The Impact of the 2007-10 Crisis on the Geography of Finance[◊]

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May 28, 2010

Abstract: The location of financial activities is traditionally characterized by a great deal of inertia. However, the 2007-10 crisis may considerably modify the geography of finance and cause an upheaval in world hierarchy. Financial centers in developed countries have been massively losing jobs, especially London, New York and tax havens. But, above all, they are on the way to lose the support implicitly provided by western governments until the crisis. At the same time, stock markets in Shanghai, Hong-Kong and Bombay are upstaging them as major players.

Keywords: Financial Geography, International Financial Centers, Globalization, Financial Crisis, Subprime.

JEL Codes: E44, G2, R1.

[◊] We would like to thank Agnès Bénassy-Quéré, Benjamin Carton, Matthieu Crozet, Ron Martin, Dariusz Wójcik as well as participants in the conference "The Changing geography of Money, Banking and Finance in a Post-Crisis World" and the "2010 Annual Meeting of the Association of American Geographers" for helpful comments. We thank also Barbara Balvet for remarkable research assistance.
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1. INTRODUCTION

Will the financial crisis put an end to the supremacy of Wall Street and the City over other stock markets? As of 2009, London was, for the first time, no longer listed in the Top 5 list of stock exchanges in terms of domestic market capitalization. New York, Tokyo, the Nasdaq, Euronext, and then Shanghai successively displaced what had been the world's number one financial center for two centuries.[1] At the same time, a growing part of the capital raised by share issues in the world is in Asia. It can be argued that China, overheating on an inflow of liquid assets, is the new theater of a speculation bubble and that Asian companies newly listed are in no way comparable to their American counterparts. However, when all is said and done, Wall Street and the City have still lost their competitive edge.

This paper is an attempt to assess the impact of the 2007-10 crisis on the hierarchy of financial centers. Usually, this hierarchy is characterized by a great deal of inertia, but we argue that this crisis could mark a breaking point in the geography of finance.[2] Admittedly, it is too early to be positive, but we aim to provide key stylized facts to support this idea.

This crisis came after two decades of globalization and development of new information and communication technologies (NICT) that had gradually, but thoroughly reshaped the world's financial geography (see Martin, 1999; Clark and Wójcik, 2007; Alessandrini, Fratianni and Zazzaro, 2009). This being so, the financial crisis that began in 2007 is of a major scale and hit the main financial centers directly. For the first time since the 1950s, the size of the financial industry in Western countries is likely to decline significantly, while financial centers in Asia confirm their growth trend.

In the following section, we review the reasons why the geography of finance is something to worry about. Then, we document the job loss that has occurred in the leading financial centers

[1] In terms of value of share trading, the rank is the following: the Nasdaq, Nyse Euronext (US), Shanghai, Tokyo, Shenzhen, London.
[2] See also Engelen and Faulconbridge (2009) and Lee, Clark, Pollard, and Leyshon (2009) for similar stances.

since 2007. More precisely, we stress the strong elasticity of the labor market in the US and we compare the current situation with the bursting of the Internet bubble. We also provide evidence of the growing size of the financial industry (mainly in the US) before the crisis. Several recent papers tackle this issue and insist on the growing needs for corporate finance, the increasing political influence of the financial industry, the implicit insurance provided by the governments, etc. to explain the growth of the financial industry. In this article, we provide an additional argument: the excessive size was the result of a rational strategy to deal with the international division of labor and the rise of offshoring. But we argue that political support in favor of financial activities is less likely since the crisis has shown the pitfalls of such a strategy. Finally, we put emphasis on the stock market boom in emerging countries.

2. COMPETITION BETWEEN FINANCIAL MARKETS: WHAT IS AT STAKE?

Political authorities' defense of their financial centers is a well established fact (Cassis, 2006) and the present situation is no exception to the rule. Despite the financial crisis and the need for countries to cooperate, competition between financial centers is as strong as before. Each government continues to promote its own financial system.

The financial system fulfills functions required for economies to operate smoothly and a number of empirical studies conclude that finance leads growth (Levine, 2005). This is why governments have traditionally defended the presence of financial intermediaries and markets within their borders. However, in a globalized economic world with free capital flows, this argument is no longer relevant. In fact, with present-day technology the functions performed out by financial systems could theoretically be fulfilled at a supranational level.

So, what is behind the defense of domestic financial centers today? Reasons of a symbolic nature very probably come into play (Ferguson, 2001). The economic – and geopolitical –

power of a country is associated with its financial power. Having a financial center means maintaining a certain status on the international scene. Additionally, financial activities are proof that emerging countries adhere to the Anglo-Saxon model and have adopted capitalism as a regulatory system.[3] Still, symbolic reasons are not the only argument.

The defense of financial centers is mainly justified by the importance of the financial industry in the economy. In 2006, i.e. shortly before the crisis began, the financial industry in the United States[4] accounted for over 6 million direct jobs (about 4.5% of total employment) and wages and salaries worth $ 500 billion (8% of total salaries). In the European Union[5], financial activities represented 6% of the GDP and directly involved over 5 million employees; this was twice the working population of Ireland and equal to the working population of Belgium, Austria or Portugal (see Capelle-Blancard, Crozet and Tripier, 2007).

Financial activities are even more significant on a regional level. In 2006, they accounted for over 10% of the jobs in London, in the state of New York or in Paris, well over 30% if the focus is limited to the City of London or to Lower Manhattan (see Capelle-Blancard and Tadjeddine, 2010). And this is without factoring in the ancillary jobs in information technology, media or law for example.

3. THE IMPACT OF THE 2007-10 CRISIS ON FINANCIAL CENTERS

Given the weight of the financial centers in developed countries' economy, the consequences of the 2007-10 crisis have been very significant. Especially, London, New York and Dublin have seen a drastic drop in hiring and employment in the financial industry.

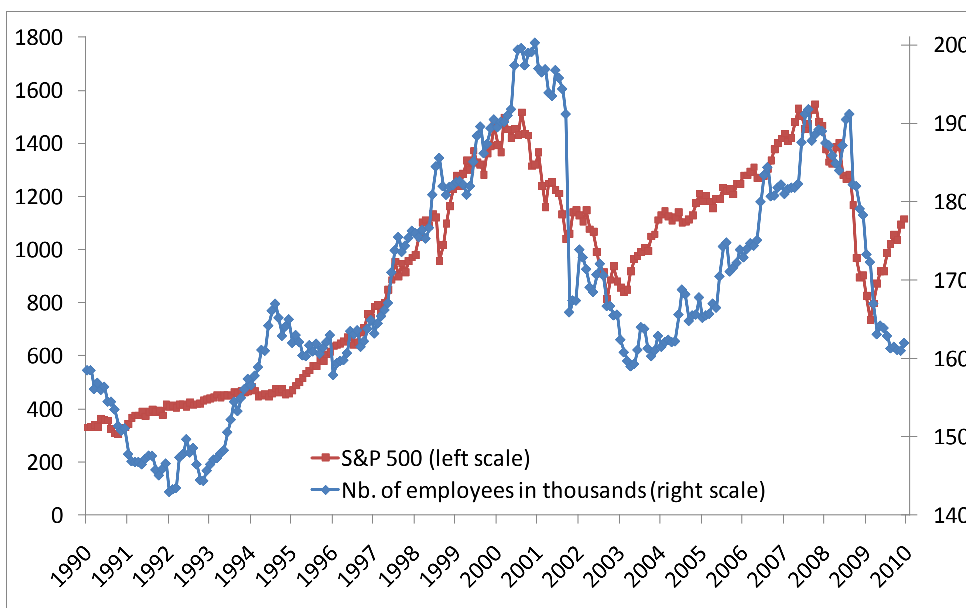
A financial crisis induces losses, bankruptcies, and finally job cuts, but the amount of job cuts

[3] For instance, the Warsaw Stock Exchange (*Gielda*) is, somewhat ironically, located on the site of the former headquarters of the Polish Unified Workers Party (PZPR).
[4] Source: Bureau of Economic Analysis (NIPA Tables, Section 6).
[5] Source: Eurostat.

depends on labor elasticity. The sensitivity of labor supply to the economic situation is contingent to structural and cultural factors. The American labor market is known for its high elasticity and the financial industry is no exception. The figure 1 shows the evolution of the number of employees in market activities and the stock market performance. We notice that the number of employees is closely linked to the trend of S&P with a slight lag. In 2009, while S&P 500 was increasing, the number of employees has decreased.

Commentaire [yt1]: Il me semble au regard du graphe que le lien est plus avec la tendance avec un phénomène de retard

Figure 1. Stock Market Performance and Wall Street Jobs



Note: Number of employees "Securities, Commodity Contracts, and Other Financial Investment & Related Activities" (in thousands). Data Source: New York State Department of Labor. Calculation: Authors.

How much can the financial crisis have cost New York? As of the end of 2009, the crisis seemed to have calmed down. Without trying to outguess future developments, an initial

assessment can be put forward. Between the end of 2007 and the end of 2009, New York City (New York State) lost around 36,000 (42,000) jobs in the finance industry, this is a drop of 12 % (10 %).[6] Therefore, the loss is of the same magnitude as between 2000 and 2003.[7] But it is very likely that job losses will be more durable than after the Internet bubble burst, since banks were directly hit (including investment banks, the jewel in the crown of New York's financial industry). Be that as it may, as of the end of 2009, the number of employees became relatively stable, above 250,000 (350,000), far from the peak reached in June 2001 with more than 310,000 (410,000) employees in the finance industry.

Banks were directly hit by the financial turmoil, but hedge funds have also suffered a head-on collision with the consequences of the crisis.[8] As of the beginning of 2008, the approximately 11,000 hedge funds registered in the world managed $ 2,150 billion and employed some 150,000 people. In one year, according to the Hedge Fund Research of Chicago, some 1,500 hedge funds have vanished. London, where alternative management had been considerably developed since the end of the 1990s, has turned out to be the hardest hit. According to data from the International Financial Services of London, assets under management in London plunged by 37.2% (from $ 430 billion in 2007 to $ 270 billion in 2008), compared with a relative drop of 26.7% in New York (from $ 860 billion in 2007 to $ 630 billion in 2008). Hedge funds employed 40,000 people in London (source: AIMA), and so large-scale job losses are expected.

Besides New York and London, the financial centers hardest hit are obviously tax havens, under the dual effect of the decrease in international volumes and the expectation of stricter

[6] The drop amounts to 14.3% (13.5 %) for the sub-industry "Securities and Commodity Contracts, and Other Financial Investment & Related Activities" in New York City (New York State).

[7] The bursting of the Internet bubble between 2000 and 2003 – in conjunction with the terrorist attacks of 9/11 – resulted in the loss of 35,000 direct jobs for New York City (plus 10,000 indirect jobs and 60,000 ancillary jobs, i.e. a total evaluated at over 100,000 jobs). According to Hevesi and Bleiwas (2004), this meant lost business opportunities worth over a billion dollars for New York City and $ 4.5 billion for New York State.

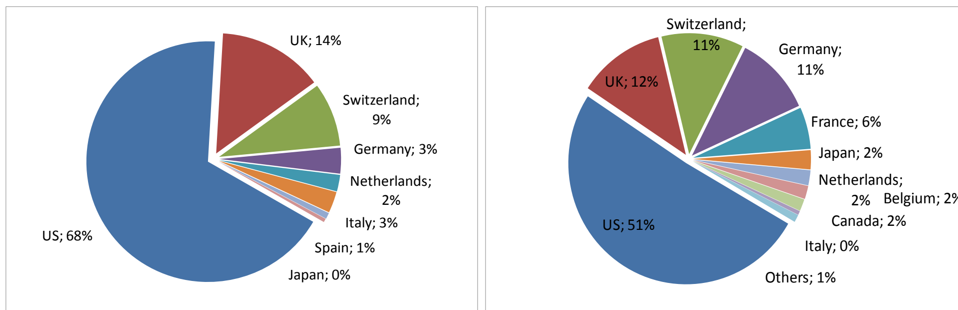
[8] The financial crisis had a delayed impact on hedge funds mainly due to the existence of barriers to the withdrawal of funds, or lock-up, which forced or encouraged investors not to withdraw their capital. It was only in the fourth quarter of 2008 that the extent of the disaster was realized.

regulations. It is difficult to get any figures, but for example, the Cayman Islands Monetary Authority observed a drop of 30% in funds registered in the Cayman Islands in 2008, whereas in Luxembourg gross added value fell by 7.3% in the financial industry.[9]

Job cuts in United States were 68% of the world's total cuts while their write-down and loss represented 51% of the world's write-down and loss (see Figure 2).[10] On the contrary, the financial centers less exposed to the crisis have resisted job losses better. This is the case for Paris and Frankfort, which have not announced any drastic reductions in personnel for the time being. Write-down and loss in France was 6% of the world's write-down and loss, but there were no massive job cuts. The German labor market is also not very elastic: 11% of the world's write-down and loss, but only 3% of the world's job cuts.

Figure 2. Job Cuts and Write-down & Loss in the Financial Industry

a. Jobs cut *b. Write-down & Loss*



Source: Job cuts by Reuters (June 24, 2009); Write-down & Loss by Bloomberg (August 12, 2008).

[9] See also Lane and Milesi-Ferretti (2010).
[10] See in Appendix for a detail of the massive job cuts in the financial industry.

4. IS THE SIZE OF THE FINANCIAL INDUSTRY EXCESSIVE?

Just after the burst of the Internet bubble, the number of employees in the financial industry had drastically grown up. As far as we know, it does not seem to be the case in 2010. This fact is important because it reveals an economic and political change in developed countries.

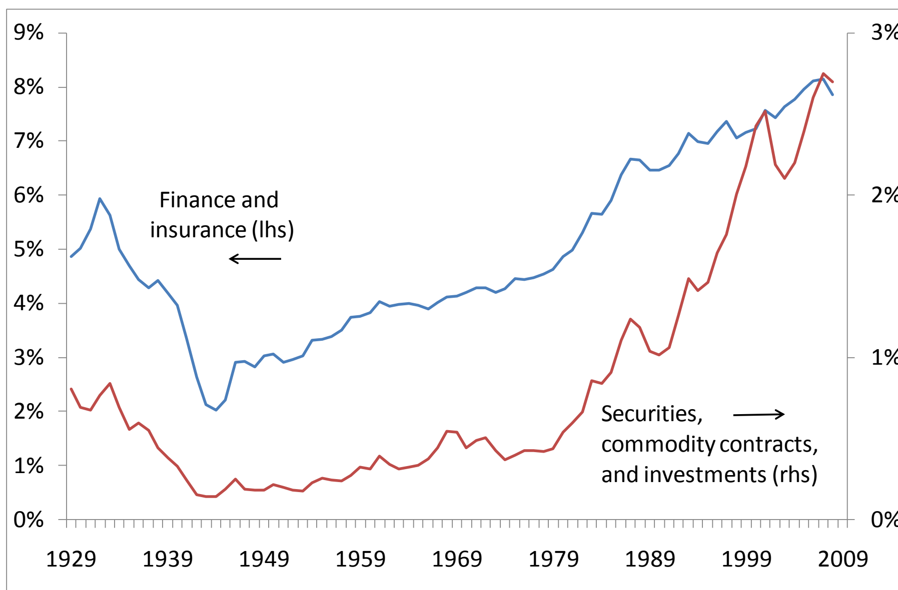
Since the collapse of Lehman Brothers, there are huge debates on the size of the financial industry. In particular, the declaration of Lord Turner, the chairman of the UK's Financial Services Agency, brought things to a head. In August 2009, he declared oneself that the financial industry in the UK has grown "beyond a socially reasonable size". He went as far as to suggest a Tobin tax on financial transactions to curb the growth of the financial industry in developed countries. This is a real turn around in opinion, since until the crisis financial activities were constantly promoted in developed countries.

4.1. Key stylized facts

Admittedly, nobody really knows what should be the right size of the financial industry. But, there are good reasons to consider that its size, at the time of the crisis, was somehow excessive. Let's consider the US, for which we have fine data and a long period of observation: the relative size of the financial industry grew continuously in the US since the 1950s, with acceleration since the 1980s. This trend is illustrated below. After the Great

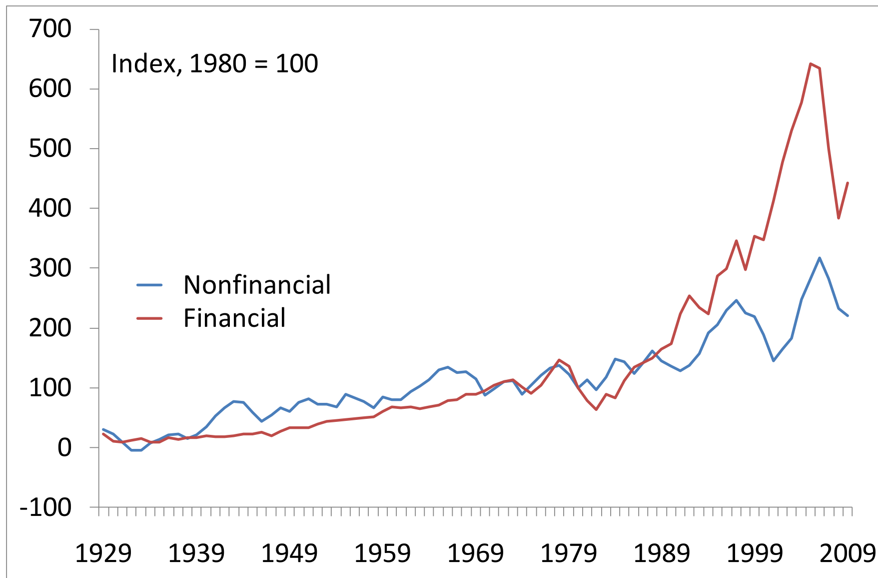
Depression, the size of the financial industry (measured by the share of the finance and insurance industry in total wages and salaries) fell by 60% (Figure 3). But, since then, growth was steady; to such an extent that the share of the financial industry in the US was higher during the last twenty years than it had ever been before. Moreover, since the end of the 1980s, profits have grown twice as fast in the financial industry than in the nonfinancial industry (Figure 4).

Figure 3. The Relative Size of the Financial Industry in the US since 1929



Note: Wage and salary accruals in the "Finance and insurance" industry or the "Securities, commodity contracts, and investments" sub-industry, relative to all industries. Data source: Bureau of Economic Analysis (NIPA Tables, Section 6). Calculation: Authors.

Figure 4. Real Profit in the US since 1929: Financial vs. Nonfinancial Industries



Note: Real corporate profits with inventory valuation and capital consumption adjustments [Index, 1980 = 100]. Data source: Bureau of Economic Analysis (NIPA Tables, Sections 1 & 6). Calculation: Authors.

4.2. Some reasons behind the growth of the financial industry

Philippon (2009) proposes a general equilibrium model to explain the growth of the financial industry. Until the end of the 1990s, the growth might be explained by increasing needs for corporate finance activities. But, since 2001, the model cannot account for the variation in the income share of the financial industry. Thus, the financial industry was too large at the time of the crisis and he calculates that it needs to shrink by approximately a fifth. Obviously, a crucial question is how the financial industry would have come to such a growth?

Several explanations have been given in the literature to account for this phenomenon. According to Philippon and Reshef (2008), the growth of the financial industry has been fuelled by the deregulation of the financial system. Johnson and Kwak (2010) argue that increasing profits have resulted in the increasing political influence of the financial industry which, in turn, has reinforced the financial deregulation. For Buiter (2009), it is the implicit

insurance provided by governments which cause the financial industry to be too big. All those previous explanations are significant. But, they miss a crucial point: the impact of the globalization.[11]

4.3. In quest of a first-class position in the international division of labor

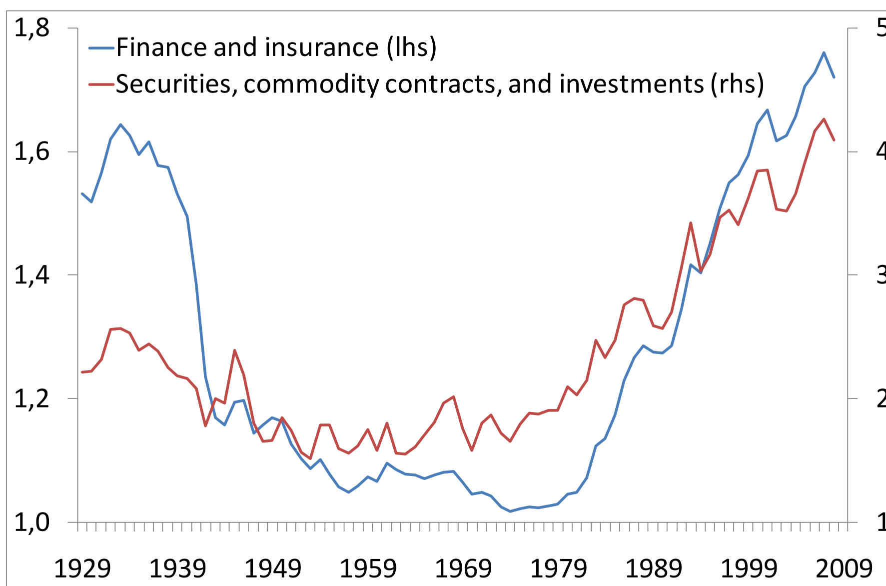
The growth of the financial industry was deliberately promoted by governments in most of the developed countries. This growth was fuelled by taking the logic of comparative advantage to extremes. Indeed, to cope with relocation of manufacturing industries, governments in the US and in Europe considered the development of knowledge intensive services – especially financial services – as a relevant way out. Deregulation and implicit insurance were only means to achieve a conscious and purposeful goal.

From a classical standpoint theory, there is no "good" specialization: countries should specialize according to their – exogenous – comparative advantage. Actually, some specializations are better than others and governments can play a role in determining and promoting comparative advantages (Clarida and Findlay, 1992). So, in most of the developed countries, finance was considered – at least until the crisis – as a first-class position in the international division of labor. In this context, the size of the financial industry in each country had no more reason to stay connected to the needs of the nonfinancial domestic sector. Thus, before the crisis, no-one really cared about the extent of the financial industry. On the contrary, governments at that time were very pleased about the growth of their financial centers, synonymous of high paying jobs and, consequently, high fiscal revenues.

[11] Philippon (2009) dismissed the role played by globalization in the growth of the US financial industry. According to him, this argument is not consistent with the fact that the US economy is a net importer of financial services. Indeed, a classical model of international trade would suggest a strong surplus of the US financial services trade balance (as it is for the UK). Actually, the problem is that the balance of payments accounts for only a minuscule part of international financial activities. For instance, arbitrage profits on the foreign exchange market have no reason to be considered in the BOP, while the boom of these activities is connected to globalization.

Indeed, financial activities are usually high value-added undertakings that require a highly qualified workforce. For instance in the US, wages and salaries in the financial industry are 1.5 to 2.5 times higher than the average; 4 times higher if we consider the securities industry (Figure 5).[12] More formally, Goldin and Katz (2008) show that graduates from Harvard University – after controlling for the sex, weeks and hours of worked, the year of graduation, the cohort and individual skills (as measured by the SAT scores), etc. – earn, in average, almost three times more than the others (see also Philippon and Reshef, 2008).

Figure 5. Relative Wage in the Financial Industries in the US since 1929



Note: Wage and salary accruals per full-time equivalent employee in the "Finance and insurance" industry or the "Securities, commodity contracts, and investments" sub-industry, relative to all industries. Data source: Bureau of Economic Analysis (NIPA Tables, Section 6). Calculation: Authors.

4.4. A recent change in the mindset

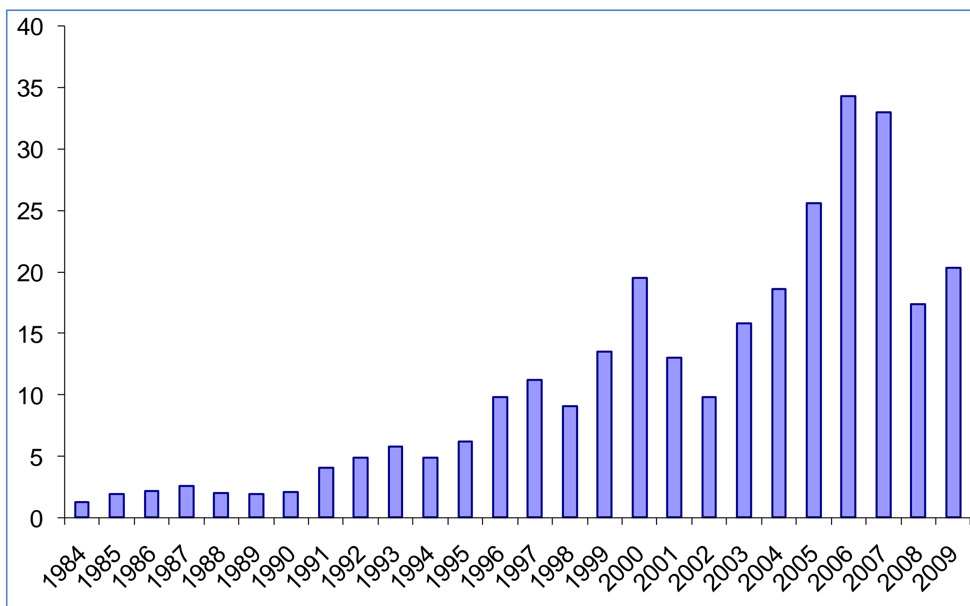
[12] Thus, Wall Street accounted for 5 % of the jobs in New York City, but one quarter of the wages paid to workers (Source: Office of the New York State Comptroller).

In 2006, the record-breaking level of bonuses in the financial industry prompted Alan Hevesi of the Office of the New York State Comptroller to say: *"When Wall Street does well, New York City and New York State do well"*. Admittedly, this is far from a proof, but it is very symptomatic of the way of thinking before the crisis, when financial activities were appreciated for themselves, and not only via their contribution to the nonfinancial sector.

Obviously, the context is now different; mindset has changed. Thus, for instance, the US President Barack Obama described bonuses to Wall Street bankers as "shameful".[13] The problem he addressed is twofold. First, there is a clear asymmetry in the distribution of the bonus. Bonuses seems weakly sensitive to the performances (See Figure 4). As stated in July 2009 by Andrew M. Cuomo, Attorney General State of New York: *"when the banks did well, their employees were paid well. When the banks did poorly, their employees were paid well. And when the banks did very poorly, they were bailed out by taxpayers and their employees were still paid well. Bonuses and overall compensation did not vary significantly as profits diminished."* Second, the financial industry has contributed to the rise in the extreme wage inequality (see Kaplan and Rauh, 2007, for the US and Bell and Van Reenen, 2010, for the UK). To consider whether bonuses are fair or not is beyond the scope of the paper. But the debate around bonuses clearly illustrates that the burden of proof has changed.

Figure 6. Wall Street bonuses since 1984 (in billions of USD)

[13] *"When I saw an article today indicating that Wall Street bankers had given themselves $20-billion worth of bonuses, the same amount of bonuses as they gave themselves in 2004, at a time when most of these institutions were teetering on collapse and they are asking for taxpayers to help sustain them and when taxpayers find themselves in the difficult position that if they don't provide help that the entire system could come down on top of our heads, that is the height of irresponsibility. It is shameful."* Barak Obama, January 2009.



Data Source: OSC. Calculation: Authors.

Thus, the crisis has clearly shown that the growth of the financial industry is not a panacea. First, excessive size is always associated with more risks. A country with an extreme specialization is dangerously exposed to shocks; this theoretical argument is valid for all industries, including financial activities (and yet, shocks that impact the financial intermediaries are usually more serious, due to the contagion effects). Second, the growth of the financial industry has pernicious effects. Moreover, earnings in the financial industry are so high that it attracts more and more talents, to the detriment of others industries.[14]

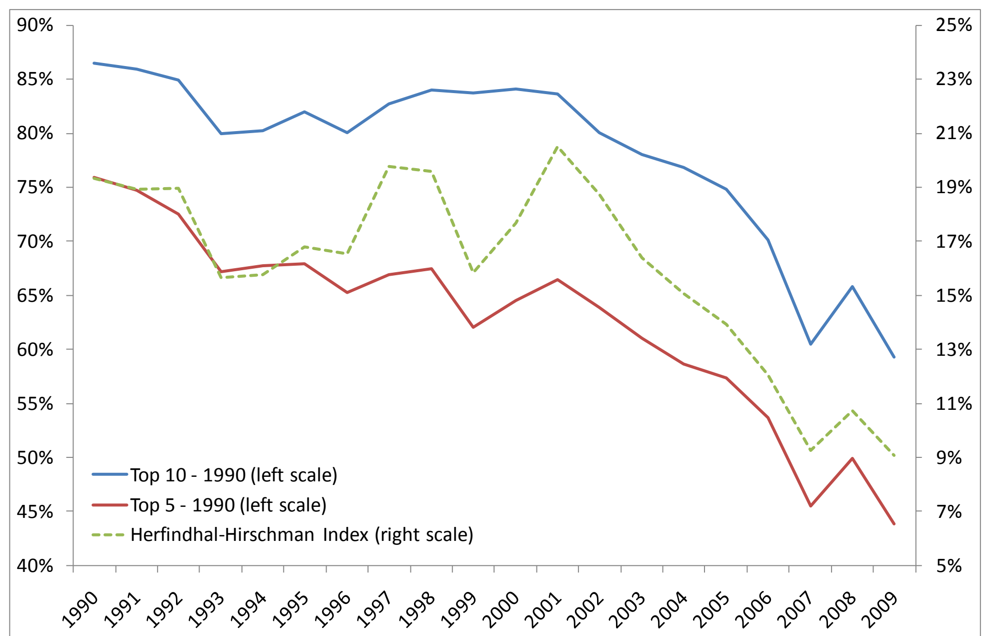
5. THE BOOMING EMERGING STOCK MARKETS

[14] Goldin and Katz (2008) show that 5 percent of men who received their BAs from Harvard University around 1970 had positions in the financial sector in 1985, while 15 percent of those who graduated around 1990, worked in the financial sector in 2005.

Historically a gradual disappearance of regional stock markets has been observed in Western countries. At the end of the 1990s, it was thought that this trend toward concentration would quickly continue beyond national borders and even accelerate because of demutualization. It is true that there was the creation of Euronext (2001) and then its merger with the NYSE (2006), as well as the grouping of Northern European stock markets under OMX Group, then its purchase by the Nasdaq and the Dubai stock market (2007). However, on the whole, there has not really been a decrease in the number of stock markets in Western countries. In contrast, during the same period of time, more than twenty stock markets have been created in the Middle East and Asia. In 2009, there is a grand total of over a hundred securities exchanges in the world – insofar as the creation of a vast planetary market was expected, this fact is highly symptomatic. Most of these newly created stock markets are arguably very small and a number of them are likely to vanish as fast as they appeared. However, it is also certain that some of them are in a position to reshuffle the cards in the world's market capitalization game.

In 1990, the five largest financial centers in terms of market capitalization were the Tokyo stock exchange, the New York stock exchange, the London stock exchange, the Deutsche Börse and Paris Bourse. This Top 5 accounted for three-quarters of the world's market capitalization at that time, but its share fell to 45% as of the end of 2009.[15] As illustrated in Figure 7, the drop in the Herfindhal-Hirschman index is also indicative of a lesser concentration of stock markets.

Figure 7. Degree of Concentration of Stock Markets Worldwide

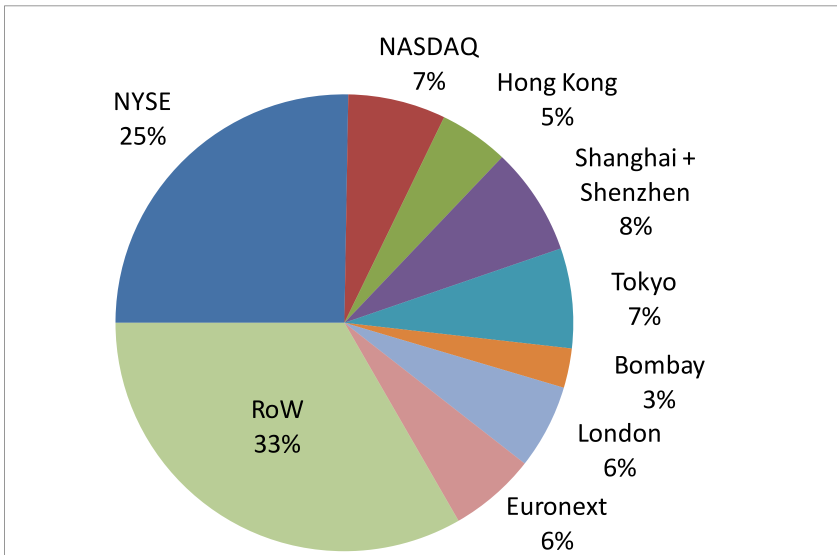


Note: Ranking on the basis of market capitalization (year-end). The Herfindhal-Hirschman index is equal to the sum of the square of the market share of all the stock markets that are members of the WFE. Data source: World Federation of Exchanges (2009). Calculation: Authors.

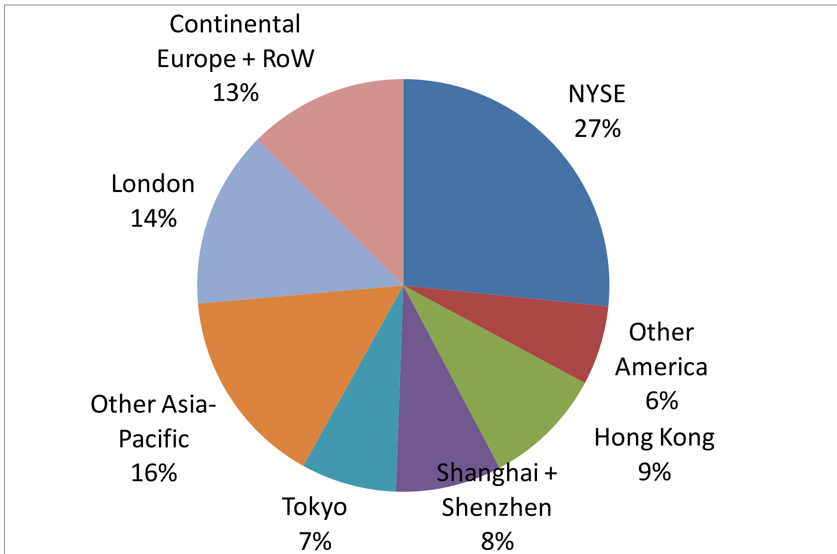
[15] As a reminder, the United States, Japan, the United Kingdom, Germany and France account for around half of the world's GDP and a twelfth of its population.

Figure 8. Stock Markets in the World in 2009

a. Domestic market capitalization



b. Capital raised by share issues



Note: All stock markets in Figure a. had a domestic market capitalization higher than $2,000 billion (except Bombay). Data source: World Federation of Exchanges. Calculation: Authors.

The decrease in the concentration of stock markets is mainly due to the rising power of new economic players on the world scene – with China and India coming in first place. Stock exchanges in Asia handle a growing percentage of the capital raised by share issues in the world. For instance, the Hong Kong, Shanghai and Shenzhen stock exchanges accounted for 17 % in 2009 (see Figure 8), and now they attract foreign firms as well. In emerging countries, it seems that finance is what follows growth.

The significance of a financial center should not be reduced to the size of its stock market, even though it is the easiest indicator to mobilize.[16] If the size of banks is used as a reference, the situation is even more critical for Western financial centers. As of the beginning of 2009, the three biggest banks in the world in terms of market value are Chinese: ICBC, China Construction Bank and Bank of China[17], whereas none of them was even listed in 2005.

6. CONCLUSION

For twenty years, the geography of finance changed smoothly, but several signs point to a latent upheaval. Until now, changes have been masked by the rigidity of spatial structures – the so-called lock-in or path dependency effect[18] – but the crisis may act as a catalyst. In this paper, we provide key stylized facts that illustrate this. On the one hand, for the first time since the 1950s, the financial industry might shrink in developed countries; on the other hand, stock markets in emerging countries are booming.

Until the crisis, almost nobody called the growth of the financial industry into question. On

[16] As far as foreign exchange activities are concerned, their inertia is almost complete. London remains by far the dominant financial center with one-third of the transactions in 2007, followed by New York (17%), Switzerland, Tokyo and Singapore (6%). Since the first Triennial Central Bank Survey of Foreign Exchange by the BIS in 1989, the Herfindhal-Hirschman index has even slightly increased, going from 14% to 16%.

[17] These banks ranked respectively 12th, 23rd and 30th on the Forbes listing that takes revenue, EBIT and book value into account, in addition to market value.

[18] Note for instance, that the City of London acquired its status of world financial center during the period of the British Empire and the supremacy of the pound sterling as an international currency. Although some of the initial conditions have vanished, the City has continued to be a leading financial center (Porteous, 1999).

the contrary, it was regarded as being an excellent position in the international division of labor (high-paying jobs and pollution-free!). The financial industry was not just supported for its contribution to the nonfinancial sector, but for itself. But nowadays, even within the traditional bastions of finance – namely Wall Street and the City of London – it is claimed that the financial industry needs to get smaller. At the same time, financial centers in Asia keep surging.

Historically, the relocation of financial centers has always gone together with a transfer of economic power and geopolitical influence (Braudel, 1985) and so the stakes are high for Western countries. In any case, our point is not to say that the growth of the financial industry should not be curbed. It is very unlikely indeed that developed countries will win the regulatory "race to the bottom". Instead, reinforcing financial regulation seems the best way to keep a cutting edge.

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Appendix. Financial intermediaries' job cuts following the subprime crisis

Company	Job cuts	Remarks	Writedown & Loss ($ US bn.)	Capital Raised ($ US bn.)
Citigroup (US)	75,000		55.1	49.1
Bank of America (US)	45,500	Includes 30,000-35,000 jobs to be slashed over three years after the purchase of Merrill Lynch and 7,500 jobs to be cut over the next two years after the acquisition of Countrywide Financial Corp	21.2	20.7
J.P.Morgan (US)	23,700	Includes 7,600 cuts announced after the purchase of Bear Stearns and up to 14,000 layoffs announced in 2009	14.3	7.9
UBS (Switzerland)	19,700		44.2	28.3
HSBC (UK)	16,350		27.4	3.9
Royal Bank of Scotland (UK)	15,250		14.9	24.3
Lehman Brothers (US)	12,570	Number made up of about 6,000 job cuts made before the bank collapsed in September and an estimated 10,500 left jobless after the bank collapsed -- about 8,000 others were transferred to Nomura and 10,000 to Barclays	8.2	13.9
American Express (US)	11,000			
Commerzbank (Germany)	9,500	All layoffs announced after the acquisition of Dresdner Bank	2.4	
Barclays (UK)	9,050	Includes 3,000 cuts after the acquisition of Lehman Brothers	9.1	18.6
UniCredit (Italy)	9,000		2.6	
Morgan Stanley (US)	8,680		14.4	5.6
National City Corp (US)	7,400	Layoffs before National City Corp merged with PNC	5.4	8.9
Crédit Suisse (Switzerland)	7,320		10.5	2.7
ING (Netherlands)	7,000		5.8	4.8
PNC Financial Services (US)	5,800	The job cuts are due to be completed by 2011		
First American (US)	5,460			
Goldman Sachs (US)	4,800		3.8	0.6
Fidelity National Financial (US)	4,100	Includes 1,500 cuts after purchase of three title insurers		
Fidelity Investments (US)	4,000			
Lloyds (UK)	3,595	Includes nearly 3,000 cuts since takeover of HBOS in 2009		
Merrill Lynch (US)	3,300	Layoffs before takeover by Bank of America closed	51.8	29.9
Santander (Spain)	2,600			
State Street (US)	1,800			
Nomura (Japan)	1,530	Includes 1,000 jobs cut after the acquisition of Lehman	3.3	1.1
Deutsche Bank (Germany)	1,380		10.8	3.2

Source: Jobs cut by Reuters (June 24, 2009); Writedown & Loss and Capital Raised by Bloomberg (August 12, 2008).