FINANCIALIZATION 
AND SOCIOSPATIAL DIVIDES

Olivier GODECHOT

ABSTRACT. – Our paper contributes to the literature on financialization of modern economy and relies on firm staff data instead of the usual company accounts data. It uses for this aim several indicators that reveal the direct or indirect power of contemporary finance: importance and relative concentration within top paid wage-earners, of the finance sector, of holdings in non-finance firms, of business consulting, and of financial managers in non-finance firms. Concentration of the finance sector among top wage earners seems to be the most striking phenomenon of the financialization process. The article then examines the impact of financialization on socio-spatial inequalities. To the increase in inequality, a phenomenon already known and demonstrated in our previous work, adds a phenomenon of territory division between the “global city” (Greater Paris and in particular its business district of La Défense) which has an international financial center and other parts of the territory. Thus, the process of spatial segregation becomes massive once we climb high enough in the wage distribution and we take into account the workplace. Albeit on a smaller scale, the concentration of working rich produced by financialization contributes to the residential ghettoization of the wealthiest wage earners.

KEYWORDS. – Centralization; Finance; France; Global city; Inequalities; Spatial segregation; Wages.

RÉSUMÉ. – L’article complète les travaux sur la financiarisation des économies contemporaines à partir de données portant non pas sur les comptes des entreprises, mais sur la composition de leur personnel. Il retient pour cela plusieurs indicateurs susceptibles de signer la puissance directe et indirecte de la finance contemporaine : l’importance et la concentration relative au sein des fractions les mieux payées des salariés travaillant dans le secteur de la finance, au sein des holdings des entreprises non-financières, dans le secteur du conseil aux entreprises ou comme cadres financiers des entreprises non-financières. La concentration des salariés de la finance au sein des salariés les mieux payés semble être le phénomène le plus marquant du processus
de financierisation. L’article examine ensuite les conséquences de la financierisation sur les inégalités socio-spatiales. À l’accroissement des inégalités, phénomène déjà connu et mis en évidence dans nos précédents travaux, s’ajoute un phénomène de fractionnement du territoire entre la « ville globale » (le grand Paris et en particulier son quartier d’affaires de La Défense) qui possède un centre financier international et les autres parties du territoire. Ainsi, le processus de ségrégation spatiale devient massif dès lors qu’on monte assez haut dans la distribution des salaires et qu’on prend en compte le lieu de travail. Quoique de moindre ampleur, la concentration des salariés riches, produite par la financierisation, participe à la ghettoïsation résidentielle des salariés les plus fortunés.

MOTS CLÉS. – Centralisation ; Finance ; France ; Inégalités ; Spatial ségrégation ; Salaires ; Ville globale.

A large consensus has arisen that, since the 1980s, the economy has been changed by the process of financialization, and that this process affects not only the modes of financial exchange, but also, more broadly, social and economic structure and inequalities (Fligstein 2001; Krippner 2005). The impact of financialization on social inequalities and cohesion is often handled in the media in spectacular terms such as “stock market layoffs,” comparing the impoverishment of some (the laid-off workers) with the enrichment of others (the capital gains of stockholders). While there can hardly be any doubt as to the existence of the layoffs, their causal relationship to the stock market is actually hazy – it is not clear that such layoffs would not have taken place in a less financialized economic system – and their impact on capital gains is uncertain (Capelle-Blancard and Couderc 2006). While financialization admittedly has repercussions on management of ordinary staff in nonfinancial companies (Montagne and Sauviat 2001), particularly regarding the sustainability of jobs and the use of layoffs or variable compensation, the causality involved in its impact through those channels on the structure of inequality is long, complex, and therefore uncertain.

On the other hand, financialization potentially has a more direct impact on inequalities by reason of the categories of employees that it promotes: those in charge of financial matters, whether they are employed in the financial sector or work as finance specialists in nonfinancial companies. A number of studies have begun to show the size of incomes collected by employees in the financial sector and its role in increasing inequality (Philippon and Reshef 2009; Bell...
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and Van Reenen 2010; Godechot 2012), especially in the United States, the United Kingdom, and France, but thus far they have barely begun to address the question of financialization outside the financial sector.

Studies of inequality concentrating on national distributions of wage and income (Atkinson, Piketty, and Saez 2010; Piketty 2001) sometimes tend to give the impression that the increase of income and (especially) wage inequalities is a phenomenon that affects the entire economy, that is, all economic sectors and all regions indiscriminately. However, the financialization process does not apply equally throughout a given country, owing to the historic concentration of financial activity in major financial centers such as New York, London, and Paris (Sassen 2001, 2005). Nevertheless, the dematerialization and computerization of financial activity could potentially allow financial activity to be liberated from these historic centers, promoting a desegregation process. Saskia Sassen (2001, 2005) affirms that globalization and computerization are promoting the growth, opulence, and segregation of the major financial centers, rather than making a dent in them. They contribute to the emergence of “global cities” due to the added value offered by idiosyncratic information transmitted face to face rather than standardized information transmitted electronically, as well as the added value of strategic control and organization jobs over the classic delocalized production and distribution jobs. Following these hypotheses, this globalization/financialization movement would thus favor the growth of sociospatial inequalities, both between the global cities and the rest of the country as well as within the global cities themselves.

This last hypothesis leads us to infer from this emergence of global cities an increase in spatial segregation, not only at work, but also in residential areas by income level. In the case of the United States, Sean F. Reardon and Kendra Bischoff (2011) have thus demonstrated a causal relationship between the increase in income inequality and spatial segregation, but they do not specify the areas most affected by this increased move toward polarization. One might suppose that the major financial centers, such as New York or London, play a role in this process, both because they have a concentration of financial jobs and because the high wages that they offer promote residential strategies of social avoidance (Maurin 2004).
We propose to connect several areas of research on present-day inequality that remain too compartmentalized—income inequality (Atkinson, Piketty, and Saez 2010), financialization (Krippner 2005), social geography (Sassen 2001), and social segregation (Reardon and Bischoff 2011)—testing the positive relationships between financialization, the increase in wage inequality, the emergence of global cities, and social segregation at home and at work. We will examine these ties using administrative wage data from the DADS (Déclarations Annuelles de Données Sociales: “Annual Declarations of Social Data”) filed on employees by companies in the private sector, with representative data (1/24th of files) since 1976 and exhaustive data since 1994.

The first part of this article will discuss indicators of financialization. The second will show that financialization and the increase in inequality primarily affect the Île-de-France region, while the third will show that such a movement promotes an increase in segregation at work and (to a lesser degree) in residential areas, but in all cases promotes increased social separatism among the most highly compensated employees. Finally, in the last section, we will try to clarify the contribution of financialization to this dynamic of social separatism.

1. Financialization and Wage Structure

Financialization is a complex and diverse process that has undeniably affected Western economies over the past thirty years, to the point that it has become the object of broad social protests in recent years (with the “Occupy Wall Street” movement), as well as an electoral campaign issue. The exact impact of this phenomenon and its full implications remain difficult to define, as it is manifested at so many different levels: from the impact of stock prices on politics to mortgage approval procedures, as well as accounting methods used to calculate the performance of firms.

The socioeconomic literature on financialization (Deutschmann 2011; Tomaskovic-Devey and Lin 2011; Krippner 2005; Epstein 2005) distinguishes among several levels of financialization, depending on the sector (financial or nonfinancial) and the scale (at the

1. The author received access to this data from the CASD (Secure Remote Access Center) dedicated to researchers granted authorization based on the recommendation of the French Statistical Confidentiality Committee.
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Financialization is manifested first and foremost through an internal change in the modes of financial intermediation. While financial markets occupied a relatively anecdotal place in economic life in the 1960s, to the point that some commentators predicted their demise, institutional changes of the past twenty-five years have helped to place them once again at the heart of the action. First of all, the end of the fixed-exchange-rate regime in the early 1970s, based on the Bretton Woods Agreement, revived the exchange market. Faced with the inflation crisis of the 1970s (Krippner 2011), Western countries, particularly the United States, the United Kingdom, and France, introduced policies to revive the market. They suppressed and dismantled barriers deemed to be anticompetitive, such as fixed brokerage fees, the Compagnie des Agents de Change, or even the Glass-Steagall Act; they added many new products (especially derivatives) and market segments; and they participated in the computerization of transactions and promoted individuals’ participation in the stock market by favoring pension funds (Montagne 2006). The combination of this pro-market policy and the game playing in the international exchange that promoted the accumulation of liquid assets (petrodollars, Chinese trade surplus, the highly accommodating monetary policy in the OECD countries starting in 2001) led people to turn more and more to financial markets. Transaction volumes soared spectacularly during the periods of 1977–1987, when the Paris stock exchange grew elevenfold (Godechot 2012), 1995–2000 (grew sevenfold), and 2004–2007 (doubled). This unprecedented expansion was accompanied by changes in financial behaviors, among which we will highlight growing support for risk quantification (McKenzie 2006) and for liquidity (Orléan 1999) – the possibility of reversing a financial position quickly and at minimal cost – short-termism, and the development of a generalized arbitration (with a speculative component) of related financial products.

Financialization is not limited to finance alone; it leaves its mark on other economic sectors. First, the strategies and work organization specific to financial markets are being applied to a growing number of nonfinancial product markets called “commodities” (energy products, raw materials, agricultural products). Next, large firms are often
equipped with internal trading floors to manage their cash flow and their risks, and to this end they employ small “trading” teams. They often dispose of banking subsidiaries in order to promote credit sales. More generally, beyond these niche financial professions, financialization is also changing management standards.

The new standards are often spread by consulting firms. Some of them, like Stern Stewart & Co. with its patented accounting concept known as EVA (Economic Value Added), have played a widely recognized role in the dissemination of financial logic (Lordon 2000; Froud and Williams 2000). The model of the multidivisional firm, whose favored objectives were diversification and expansion, gave way to the model of the firm dedicated to creating shareholder value (Fligstein 2001), restricted to its core business, the goal of which is to maximize the company’s stock market value. The financial strategies of liquidity, risk measurement, benchmarking, arbitrage, and discounted cash flow were introduced into nonfinancial firms for the choice of investments, accounting valuation, or work organization, at the cost of classic industrial and business strategies. The company is broken down into as many profit centers as basic units, the value of each being measured in the light of its potential resale value on the market. A symptom of this sea change is the growing power of financial directors at the head of firms and their designation as “chief financial officer,” replacing chief operating officers (Zorn 2004; Zorn et al. 2005). Though this movement was initiated by a change in U.S. tax code (Zorn 2004), its continuation was promoted by the shareholder value ideology, the hostile IPOs of the 1980s, and the increased role of financial analysts in establishing stock prices (Zorn et al. 2005).

At the macroeconomic level, Greta Krippner (2005) and, more recently, Donald Tomaskovic-Devey and Ken-Hou Lin (2011) have found the distribution of profits in the U.S. economy a better marker of financialization than the evolution of financial work could possibly be. The weight of the finance/insurance/real estate sector peaked at 45% of profits, whereas the same sector oscillated between 10% and 20% between 1950 and 1980 (Krippner 2005; Tomaskovic-Devey and Lin 2011). Krippner has also analyzed the growing portion of financial revenues in nonfinancial firms as a symptom of the financialization of the nonfinancial sector (2005). Tomaskovic-Devey and Lin (2011) have also analyzed the widening
gap between average wages paid in the financial sector and those
paid in the nonfinancial sector; they estimate that, between 1981
and 2008, six trillion dollars were transferred from the nonfinancial
sector to the financial sector.

The Ascendancy of the Financial Sector

Based on national accounting data, duplicating the financialization
approach based on the distribution of profits does not produce
similar results in the case of France. The proportion of total gross oper-
ating income, distributed income, and gross disposable income held by
financial companies appears, on initial examination, stable.2 Similarly,
when one attempts to measure the ascendancy of the financial sec-
tor through the evolution of its numbers in the workforce, it is clear,
as Krippner (2005) found, that this indicator is hardly a reflection of
the massive financialization of the labor force. The proportion of the
workforce employed in the financial sector has changed very little
(Figure 1).3 One of the reasons for this quantitative indicator’s lack of
sensitivity is related to the heterogeneity of the financial sector. This
sector includes traditional banks, retail banks, and banks that finance
small firms, all of which have little to do with financial markets, and
which could not be said to have been the vector of financialization; it
also includes “corporate and investment banks,” which are particularly
 emblematic of that process. And yet, while corporate banks were add-
ing employees, retail banks during the same period adopted a strat-
egy of rationalization and staff reduction (Dressen and Roux-Rossi
1997). At the aggregate level, these two contradictory trends—difficult
to separate, due to insufficiently detailed sector designations and the
French universal-bank model, which includes retail, corporate, and
investment banking under one label—cancel each other out.

2. Sources: the datasets “7.202 – Compte des institutions financières (S12A) (En
milliards d’euros)” and “7.101 – Compte des sociétés non financières (S11) (En milliards
d’euros),” Institut national de la statistique et des études économiques, available at http://
www.insee.fr/en/themes/theme.asp?theme=16&sous_theme=5.3. Nevertheless, it is to be
noted that the concept of company profit is poorly represented by gross operating income,
because it does not take financing costs or property income into consideration. This limita-
tion is particularly true of financial companies.

3. We define the financial sector as the combination of financial intermediation (sec-
tor 65 in NAF 2003) and auxiliary financial services (sector 67.1 in NAF 2003). Insurance
and the real estate sector are excluded, which is not the case in Krippner (2005) and
Tomaskovic-Devey and Lin (2011a).
Tomaskovic-Devey and Lin (2011) nevertheless supplement the profit-based approach with an approach that considers wages, showing that wages in the financial sector have taken off by comparison with those in other sectors. However, as shown by Philippon and Reshef (2009), excessive wages in the financial sector are a direct consequence of financial deregulation measures in the United States. Approaching financialization not only through average wage levels, but also at the highest ends of the spectrum (Godechot 2012), could be the way to see the new centrality of finance, owing to its wage share. This leads us to use wage data, from the DADS (see box), to isolate the share and the effect of the employees who participate the most and, potentially, profit the most from the phenomenon of financialization. Working with individual data is particularly recommended when one wishes to show the impact of this phenomenon on inequality and the spatial distribution thereof.4

**DADS (Déclarations annuelles de données sociales: “Annual Declarations of Social Data”): A Key Source for the Study of Wages in France**

On the basis of these administrative sources, two main data sets are available. The first is the DADS Panel (1976-2007), which contains 1/24th of private-sector wages from 1976 to 2001 and 1/12th of the same population from 2002 forward. The second set is made up of the exhaustive files of all jobs in the private sector from 1994 through 2008.

Because the numbers of hours declared are not always accurate, and because hourly wage is not necessarily the best approach for finding high wages (which in certain professions, such as consulting or acting, may depend on a small number of hours), we have chosen to use the concept of annual wage, the sum of pay received during the year in all jobs held by the employee. This requires us to set aside the intentionally low wages of individuals who work very little in the private sector over the course of a year (students’ summer jobs, etc.). We are keeping only those employees making more than half of the minimum wage annually. In the files, the concept of gross wage appeared better suited to representing

4. In our previous work (Godechot 2012), we discussed in greater detail the advantages and limitations of this source and the specific choices of wage definition.
wage-related phenomena (better coverage of different elements, greater stability over time). It does not, however, cover nonwage elements of compensation, such as stock options or allocation of shares, which leads us to underestimate a portion of the increase in inequality (Godechot 2012).

Aside from information about wage, number of hours, sector, and company, the databases contain information regarding the employee: sex, age, municipality of work and of residence (the latter only after 1993), and social category.

Let us highlight a few breaks in our datasets:

– First, in the exhaustive files, it is impossible to identify an employee from one job to another during the period from 1994 to 2001. Thus we are using the gross annual wages of full-time, nonsecondary jobs when these are greater than half of a minimum wage. This leads to setting aside some employees who worked multiple jobs during the year. The population is thus reduced by 16%. The exhaustive files of the year 2002, which also cover the year N-1, allow us to make a comparison between the two sets for the year 2001.

– Within the panel, the doubling of the covered population in 2002 (going from 1/24th to 1/12th of the workforce) may also introduce a modification of the representation of segregation phenomena measured on a small scale.


Even though they do not cover the public sector and do not allow us to find nonwage income, the DADS are a privileged source for the study of wages with a significant level of detail and over a relatively long period of time. They make it possible to evaluate the evolution of the place of certain sectors in wage distribution.

Figure 1 summarizes a certain number of results that we had established in our previous work dealing with the contribution of finance
to wage inequality (Godechot 2012). The percentage of the full population of private-sector employees working in the financial sector has remained stable overall, and in fact has declined since the mid-1980s (from 3.5% to 3%). On the other hand, despite this overall stability, the higher one rises in the pay hierarchy, the greater the proportion of finance workers in the sample; this number has risen rapidly. Within the top ten percent, after a progression of one point at the beginning of the period, we observe the financial sector’s share stabilizing at about 8%. Within the top 1%, the growth of this sector has been steady, having doubled its share (from 6% to 12%) over the past twenty years. The slope is even more impressive when we concentrate on the top 0.1% of the nation’s earners with the highest wages. Within that group, the portion of finance workers has grown very rapidly, especially during the latter half of the 1990s, reaching 24%, or ten times their weight (in terms of odds ratio) in the rest of the wage distribution.

*Figure 1:* The share of finance employees among employees of different wage percentiles

Note: In 2007, 24.1% of employees in the top permille (0.1% of the highest paid) worked in finance.
Wage distribution within the financial sector is considerably stretched out, to such a degree that it significantly transforms the level and the structure of inequalities. The wage share of the top 0.1% of earners rose from 1.2% to 2%, and nearly half of this increase went to the financial sector (Godechot 2012), a phenomenon similar to that which has taken place in the United Kingdom (Bell and Van Reenen 2010) and even in the United States (Bakija, Cole, and Heim 2010). All signs indicate that this movement is the result of the “financialization of finance,” or the increasing influence of the financial markets within financial and banking intermediation activities. It is strongly correlated with financial conditions (the mid-1980s boom, then the collapse following the 1987 crash and the Gulf War, a boom in the latter half of the 1990s followed by the 2002 recession, the mid-2000s boom) and with transaction volume (Godechot 2012), as well as with the significant weight of the socioprofessional professions and categories (PCS) “financial market executives” among the highest-paid finance workers (a classification measured only since 2003).

The Financialization of Nonfinancial Firms

If the stretching of finance wages results, in a relatively obvious way, from the process of financialization and, consequently, represents it relatively well, it would nevertheless be incorrect to consider the effects of financialization as limited to the financial sector alone. Particularly in the United States, the ideological movement of “shareholder comeback” is manifested less by the mobilization of shareholders, as groups of natural persons, than by the development in the 1980s of mergers and acquisitions financed through leveraging (thanks to junk bonds) that made it possible for financial raiders to dismantle conglomerates (Zorn et al. 2005; Tomaskovic-Devey and Lin 2011, Lin and Tomaskovic-Devey 2013). In this threat environment, firms did not adopt all of the recommendations of financial governance from the financial theory of the firm, sometimes spread by management consulting firms (Lordon 2000; Froud and Williams 2000), but only those most directly related to short-term stock prices, in particular the promotion of financial directors to the rank of Chief Financial Officer (Deputy Director General) (Zorn et
or the development of practices indexing directors’ compensation according to stock prices (Dobbin and Jung 2011). In the United States, one of the consequences of financialization is the growth in pay inequality and the rise of managerial wages (Lin and Tomaskovic-Devey 2013).

Using the DADS, can one find evidence of the financialization of nonfinancial companies? The task is difficult, and the indicators that we have selected are rather mediocre. Drawing inspiration from Dirk M. Zorn’s approach (Zorn 2005; Zorn et al. 2005), we have attempted to see whether financial professions in nonfinancial companies have grown both in number and in special recognition. It is difficult to isolate the position of financial director as well as the previously mentioned jobs have been isolated. Based on the four-digit PCS, one might define the professions of executives in administrative, accounting, and financial services, among which financial executives, though not isolated, are the most numerous. Addition-
ally, the quality of the four-digit PCS, the nomenclature of which changed in 2003, is very poor in the DADS: it is all but unusable prior to 1997 and does not really improve until 2001, with less than one-third of earners having manifestly erroneous or missing codes. Despite the limitations of the data, the exercise produces the following results: an overall stability in the numbers of executives related to corporate finance and a slight growth in their share of the highest levels of wage distribution, particularly in the top 0.1% (Figure 2). Nevertheless, we will take a cautious view regarding any such change.

5. In the 2003 PCS nomenclature, one finds the following professions: 372a, Executives Responsible for Economic, Financial, and Business Studies; 372b, Executives for Organization or Supervision of Administrative and Financial Services; 373a, Executives for Financial or Accounting Services in Large Companies; 373c, Executives for Financial or Accounting Services in Small and Midsize Companies.
Figure 2: The share of employees in corporate finance among the top 0.1% of employees and the total population

Note: In 2007, 14.1% of the top 0.1% of employees worked in the sector of firm administration (741J), with holdings. The change of nomenclature in the PCS in 2003 causes a break in the data. Source: DADS Exhaustive Files (1995-2007).

Faced with the limitations of the PCS to grasp this phenomenon, it is possible to return to the sector data, which are of better quality than the PCS in the DADS. Two sectors caught our attention in the 1993 NAF list. The first, 741J – Firm Administration, includes “holding activities”: to wit, the companies, generally with reduced personnel, within a group that exert primarily financial control over the other productive subsidies in the group. In 2007, according to a Liaison Financière (LIFI) study, those coded firms represented just 1.3% of wage-earners, but 38% of group heads. This method of organizing activity reflects certain characteristics of financialization: the primacy of financial indicators over industrial or commercial indicators. The second, 741G – Business and Management Consulting, only indirectly represents the financialization of non-financial companies. Often, these consulting firms are small or midsize companies whose internal operations are hardly financialized. They have nonetheless contributed, through the advice they dispense to large companies, to promoting a financialization strategy, as shown in studies on the
proliferation of shareholder management systems (Lordon 2000; Froud and Williams 2000).

Though they remain modest, these two sectors have increased their share in the overall workforce; the former grew from 0.8% to 1% between 1995 and 2007; the latter, from 0.5% to 0.9%. What is more, as evidence of the importance and value attributed to these (directly or indirectly) financial positions, their share in the top 0.1% of wages has grown even more aggressively, rising from 3.3% to 6.7% for consulting and from 9% to 14.4% for the firm administration sector. If the rise on the consulting side is more pronounced, that is more a reflection of the development of the sector as a whole. Holdings are advancing, according to a rise in their overrepresentation at the top of the pay hierarchy.

Even if we do not identify the precise impact of financialization in nonfinancial firms in a very strict way, we have a set of indicators showing the growing recognition of the professions responsible for implementing it. This movement remains, however, lesser in scope than that which we have observed in the financial sector, which consequently justifies considering the latter as the archetypal sector of financialization.

2. Financialization and the Global City

What impact might financialization have on sociospatial inequality? Saskia Sassen, in her book on global cities (2001), looks at the question more broadly, studying the effects of globalization, of which she considers financialization to be a crucial element. At a time of globalized production of goods and services, the concept of a “global city” serves first and foremost, in her view, as a name for the places in which globally dispersed economic activity is coordinated – a coordination that simultaneously takes organizational, computerized, and financial forms (Sassen 2004). However, these new venues for coordination are not without ties to the traditional forms of territorial centralization.

One might expect a decline in traditional major urban centers as a result of globalization. The drop in transportation costs and the global nature of markets, on the sides of both production and demand, could lead one to question the primacy of traditional major
urban centers such as New York, London, Tokyo, or Paris, where it is particularly expensive to settle. In finance, the “drop in transportation costs” has taken an even more radical form. Securitization and dematerialization have radically liberated financial activity from its traditional locales. Some stars in the world of finance have taken advantage of this to set up their financial activity far from Wall Street, one example being Michael Milken, who established his business in the field of junk bonds in Los Angeles in the 1980s.

Sassen explains in her book that the scattering of production made possible by globalization actually leads us to reassert the value of central job duties, and that their growing complexity requires increased demand for firms that specialize in providing services to other businesses (2001). Far from being destabilized, jobs in corporate finance and the services most needed by businesses (market finance, consulting, etc.) have become concentrated in the major urban centers. Furthermore, market finance itself is hardly threatened by the dematerialization of financial life. Face-to-face social contact and informal contact networks continue to play a major role, both as a medium for building a collective financial opinion and as a nexus that structures the labor market. This promotes the adhesion of market finance to a few centers (Sassen 2005). Furthermore, certain niches of financial activity, such as high-frequency algorithmic trading (Lenglet 2011), which performs brief microarbitrages of stock prices by means of automated transaction programs, are all the more profitable when located as close as possible to the computers of stock exchange institutions, which act as auctioneers and organize the finalization of transactions.

From this analysis, one might deduce that the traditional financial capital of a country will be strengthened by the financialization process, rather than destabilized by new opportunities to break free from the territory.

Figure 3 presents the evolution of the categories that (imperfectly) reflect corporate finance workers among the top 0.1% of earners in Île-de-France and in the French provinces, respectively. The overall level of financialization is higher in Île-de-France. However, while these professions are generally advancing in the top 0.1%, as previously indicated, as well as in their respective geographic areas, it is difficult to draw a conclusion regarding a difference in pace. If such a difference must be determined, it would be more in favor of
the provinces, which seem to be making up for some lost time where corporate finance is concerned.

*Figure 3: The share of employees in corporate finance among the top 0.1% of employees in the provinces and in Île-de-France*

Note: In 2007, 16.5% of employees in top 0.1% in Île-de-France worked in the firm administration sector (741J). 14.4% of the top 0.1% of employees in the provinces work in the same sector.

The change of nomenclature in the PCS in 2003 creates a break in the data. The distinction between the provinces and Île-de-France is based here on workplace. The proportion within the top 0.1% of each geographic region has been calculated and not within the total of both together. The threshold for membership in the top 0.1% thus differs for each of the two regions.


There is a significant contrast with what is observed in the financial sector. Indeed, as shown in figure 4, finance workers’ share of the top 1% and the top 0.1% of wages in Île-de-France grew sharply, rising in the former case from 6% in 1976 to 21% in 2007 and in the latter case from 5% to 37%, while over the same period the same sector’s share of the highest echelons of provincial wages barely changed at all.
Figure 4: The share of employees in the finance sector among employees in the provinces or Île-de-France (total, top 1%, and top 0.1%)

Note: In 2007, 37% of employees in the top 0.1% in Île-de-France worked in the finance sector.

The distinction between the provinces and Île-de-France is based here on workplace. The proportion within the top 0.1% of each geographic region has been calculated and not within the total of both together. The threshold for membership in the top 0.1% thus differs for each of the two regions.


What is the relationship between this move toward financialization and the dynamic of inequality in each of these regions? In the provinces, the wage gap remained remarkably stable. The top 1% accounted for between 5% and 5.2% of total wages in the provinces, while the top 0.1% accounted for between 1% and 1.2% (Figure 5). In Île-de-France, on the other hand, inequality grew considerably. The top percentile’s share of wages went from 6% to nearly 9% between 1996 and 2007; the top 0.1% went from 1.3% to 2.7%; and the top 0.01% went from 0.27% to 0.82%. 55% of the increase in total wages for the top 1% in Île-de-France between those two dates, as well as 62% of the increase for the top 0.1% and 77% of the increase for the top 0.01%, went to employees of the financial sector.
We can therefore conclude that the rise in wage inequality in France since the mid-1990s (Landais 2008; Solard 2010; Godechot 2012) is largely due to the increase in inequality in Île-de-France, which in turn is caused in large part (two-thirds, approximately) by the rise in top wages in the financial sector – and thus by the “financialization of finance” – and to a smaller degree (more difficult to calculate, due to the imprecision of our indicators) to the financialization of nonfinancial companies.

One consequence of this increase in high wages in Île-de-France is that the highest earners in the provinces are clearly falling behind by comparison. The pay distribution gap between Île-de-France and the provinces is, admittedly, growing overall (see Appendix). The average wage in Île-de-France has gone from 1.32 times the average wage in the provinces in 1970 to 1.44 times the average wage in the provinces.
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provinces in 2000. Nevertheless, this divergence is growing primarily at the top of the distribution; the difference in the threshold for the top 1% in the two areas has gone from 1.53 to 1.89 (Appendix). The portion of workers in the top-earning percentile who are private-sector employees working in the provinces dropped from 46% to 35% between 1976 and 2007. Looking at only the top 0.1%, the decline is even more pronounced, with those in the provinces falling from 41% to 21% (Figure 6). If we approach the question by place of residence rather than by place of work, the evolution, though somewhat less striking, remains pronounced. The portion of the top 0.1% residing in the provinces declined, from 40% to 25%. In light of this wage quantile and this rough spatial categorization of Île-de-France vs. the provinces, we have evidence of a rather marked phenomenon of spatial segregation.

Figure 6: Share of different fractiles living and working in the provinces

Note: In 2007, 77% of private-sector employees lived in the provinces, and 75% worked in the provinces; 25% of the top 0.1% highest paid private-sector employees lived in the provinces, and 21% worked there.
On this macroscopic scale, this phenomenon of segregation results less from residential choices within small geographic units and a phenomenon of social avoidance than from the spatial localization of activity – namely, the concentration of financial market management and intervention activities – and from the unequal distribution of wages for activities unequally distributed throughout the country.

Thus the concentration of high earners in Île-de-France must be put in perspective with the development of the business districts around Paris. In terms of places of work, Paris has a concentration of between 35% and 45% of the top 0.1% of earners throughout the period studied. The Hauts-de-Seine department, on the other hand, saw its share grow considerably, rising from 10% of the top 0.1% in 1976 to more than 30% in 2007. During the same period, the share for the municipalities of Puteaux and Courbevoie, in which the La Défense district is located, rose from 2% to 12% of the top-earning 0.1% of workers. In 2007, the top 0.1% of earners constituted 1.2% of the employees working in these two municipalities, one of the highest rates in the country, behind the 8th arrondissement of Paris and Neuilly (1.3%).

These results lead us to confirm, but also to nuance, the hypotheses of Saskia Sassen (2001). Contemporary economic changes have indeed considerably strengthened the great megacities and the Parisian region in France, but this is due above all to the financialization of finance, far more than to the financialization of corporates, never mind globalization or the reorganization of production.

3. The Evolution of Sociospatial Segregation

Is the impact of the financialization manifested primarily in Île-de-France enough to significantly modify the degree of sociospatial segregation? Do the highest earners and the lowest earners live more separately from each other than they did before? There have been relatively few studies of this issue – the usual angle being the segregation of minorities, rather than socioeconomic segregation – and they are often contradictory.

On the one hand, Saskia Sassen (2001) has shown that the rise in power of global cities has gone hand in hand with an increase in inequality between those cities and the rest of their countries, as well as a rise in inequality within those cities themselves. However, she
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does not propose any specific measure of spatial segregation. Sean F. Reardon and Kendra Bischoff (2011), using a study of the one hundred largest metropolitan areas in the United States, have shown a three-point increase (or a multiplication by 1.3) in their indicator of spatial segregation in those cities between 1970 and 2000, and that this rise in spatial segregation (by income rank) was as strong as the rise in absolute income inequality (measured by the Gini index). In particular, they show that a rise of one standard deviation in the income inequality indicator led to a rise of 25% of the standard deviation of the segregation index.

In France, Éric Maurin (2004), based on a study of the social homogeneity of survey strata from the Employment Survey (100,000 people surveyed per year), found socioeconomic residential segregation stable in France between 1991 and 2002. Similarly, Nina Guyon (2012), using exhaustive tax data for Île-de-France between 2000 and 2009, drew a similar conclusion. All of the many segregation indicators used indicate overall stability in the level of segregation in Île-de-France; in greater detail, they reveal a noticeable rise between 2000 and 2002, stability from 2002 to 2008, and a drop between 2008 and 2009. On the other hand, based on the 1990 and 1999 census, Edmond Préteceille (2006) observed an increase in the segregation of private-sector executives and the liberal professions in Île-de-France during that period. These studies tend to remain very general in nature (an overall segregation index with a possible study of the top and bottom deciles) and do not isolate with sufficient precision the levels of income-related stratification most affected by financialization.

We propose to examine this issue with the help of the DADS, which admittedly present some flaws, but also numerous advantages. Among the flaws, we are working with an incomplete population: private-sector employees. Many others who also contribute to the phenomenon of spatial segregation – public-sector employees, the self-employed, the unemployed, and those outside of the workforce – are missing. Next, the smallest geographic unit available to us is the municipality of work or of residence, the sizes of which are highly variable, and based on their dimensions, these will reflect more or less accurately a phenomenon of copresence or avoidance. However, these flaws are counterbalanced by

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6. In the case of large cities (Lyon, Paris, Marseille), however, we do have access to the arrondissements.
several advantages: a good description of wages and very good coverage of the population concerned, both in the 1/24th sample from 1976 and 2001 and in the 1/12th sample from 2002 to 2007, and even more so in the exhaustive files from 1994 to 2008.

To calculate segregation, we are using the classic Duncan dissimilarity index:

\[ D_g = 0.5 \times \sum_i \left| \frac{n_g}{n} \right| - \frac{n_g}{n} \]

where \( n_g \) represents the number of group \( g \) in geographic unit \( i \) and \( n_g \) represents the number of other groups (\( \neq g \) representing groups other than \( g \)) in the same unit, while \( n_g \) and \( n \) represent the number of \( g \) groups and of other groups in the total population. This aggregate index has a simple interpretation: it represents the portion of the population of group \( g \) that would have to be displaced in order to obtain an equiproportional distribution of the group in all territorial units. Based on this classic index, Sean F. Reardon and Glenn Firebaugh propose a multi-group dissimilarity index as a weighted sum of the indicators of each group:

\[ D = \frac{\sum_g \left( \frac{n_g}{n} \right) \times (1 - \frac{n_g}{n})}{\sum_g \left( \frac{n_g}{n} \right)} \times (1 - \frac{n_g}{n})] \]

We are dividing the population into five relative wage groups: F0–25, the lowest-paid quartile; F25–75, the two median quartiles; F75–90, the bottom portion of the top quartile; F90–99, the comfortable top decile (minus the top 1%); and F99–100, the top 1%. This definition does not depend on absolute wage level, but only on rank within the wage ladder. Therefore, an absolute rise in wage has no automatic impact on the spatial distribution of relative wages.

Figure 7 presents the evolution of the multigroup dissimilarity index for the municipality of work and residence in France, Île-de-France, and the provinces, as well as the department of residence and work. Above all, it presents a certain number of characteristics in level. In the provinces, workplaces are a bit more segregated than places of residence. We find rather the opposite phenomenon in Île-de-France. Furthermore, the level of residential segregation in Île-de-France is higher than in the provinces, while in terms of work segregation, the opposite seems to be the case.

7. The results derived from the sample are not directly comparable to those from the exhaustive files, particularly for the municipalities. The population of small municipalities may be poorly represented due to sample sizes in the panel, which could potentially exaggerate the gaps in an equiproportional representation.

8. The change in the set in 2001, which makes it possible to take into account better those employees working more than one job during the year, leads to a significant jump in the index for the municipality of employment.
Note: In 2008, the index of dissimilarity based on municipalities of work (exhaustive) rose to 21.9%. Thus 21.9% of the population would have to move their places of work for the composition of each municipality to be equivalent to the overall composition. Calculations for Île-de-France (and respectively for the provinces) measure spatial segregation in Île-de-France and are based on the salary level of persons working in Île-de-France.

On the other hand, on initial examination, the graph does not present any particularly clear changes. The observation oscillates, depending on the sets and the indicators, between stability and a slight increase. Let us look at this in detail.

In terms of place of work, the observation shows a slight increase in segregation. Based on the sample, we get a relatively clear rise in spatial segregation between 1976 and 1993. The overall dissimilarity index rises from 1.4 points (department) to 2 points (municipality), or multiplication by 1.12-1.13 in terms of odds ratio. What follows is a bit more ambiguous and will differ according to the selected set (sample or exhaustive). We will summarize this with overall stability between 1994 and 2001 and another rise (based on the exhaustive files) of about 2 points between 2001 and 2008, whether we are looking at the whole sample, Île-de-France, or the provinces (multiplication by 1.15). Even conservatively, we can therefore summarize
this overall evolution with an observation of a slight rise in spatial segregation at work.

In terms of place of residence, the overall observation is one of strong stability beginning in the mid-1990s. The dissimilarity rate stood at 16.65% in 1995 and at 16.74% in 2008, with the rate varying by hardly more than half a point at any time during this period. We largely confirm Eric Maurin’s analyses (2004). Nevertheless, let us first note that prior to this period, the index based on department of residence (due to the unavailability of the municipality of residence in the data) shows an increase similar to the one observed for the department of the workplace, for an increase of one point between 1976 and 1993. We must further note that the fate of spatial segregation is somewhat different in Île-de-France and in the provinces. In Île-de-France, the tendency is a rise in spatial segregation on the order of 1.2 points, while in the provinces, spatial segregation appears to have fallen on the order of half a point.9 Thus we return to Nina Guyon’s observation (2004) of a clear rise in segregation between 2000 and 2002, followed by stability.10

The overall observation, then, oscillates between stability and a slight increase in spatial segregation (for workplaces in general and for residences in Île-de-France). In any case, we observe no great upheaval and a milder rise than the phenomenon observed in the United States (Reardon and Bischoff 2011), where the increase in inequality has existed longer and is more sustained. Nevertheless, the overall indexes tend to add up uniformly phenomena that do not necessarily have the same meaning, such as, for example, a phenomenon of segregation or desegregation in the median or extreme quantiles.

Figure 8 presents a breakdown of the aggregate dissimilarity index according to our five relative wage classifications. As others have previously shown (Maurin 2004; Préteceille 2006; Guyon 2012), the phenomenon of social concentration according to income level primarily affects high incomes rather than low. In 2008, in order to obtain a proportional distribution of different classifications in each municipality, you would need to displace at least 14% of the lowest

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9. The department of residence is often uncertain in the 1994 data, particularly in Île-de-France. This led us to take 1995 as a point of reference. We are subtracting the jump linked to the change in sets in 2001 from our progression.

10. Let us note that Guyon’s observation of overall stability was based in part on the year 2009, a year of deep recession that affected some high incomes (due to the disappearance of bonuses in some sectors) and modified the spatial concentration of the very wealthy.
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quartile, 13% of the two median quartiles, 17% of the F75-90, 31% of the F90-99, and 50% of the highest percentile of wages. Of course, equiproportionality is very hypothetical and there is very little chance of coming across such an arrangement “by chance,” especially in small municipalities. We have therefore calculated (for the year 2007), based on twenty simulations, the deviation from equiproportionality that would result from the chance allocation of persons of different classes in the different municipalities (keeping their current size). The “randomized” Duncan indexes would be as follows: 2.8% for the F0-10, 2.5% for the F25-75, 3.4% for the F75-90, 4.3% for the F90-99, and 12.3% for the F99-100. Even once we have determined the chance element of this separatism, the observation of a stronger separatism at the top of the hierarchy is not upset.

Figure 8: Breakdown of residential spatial segregation by wage classification

Note: In 2008, the index of dissimilarity based on municipalities of residence rose to 50% for F99-100, the percentile of the best paid employees. At least 50% of the population of the top 1% would have to move to obtain an equiproportional distribution.


11. The standard deviations for these simulations are very low, ranging between 0.1% and 0.6%.
In fact, some municipalities have a strong concentration of individuals belonging to the top 1%. In 2007, among the municipalities that were home to over one hundred private-sector employees, the following have the strongest concentration of the working rich: Aigremont (24%), Saint-Nom-la-Bretèche (23%), Feucherolles (20%), Marnes-la-Coquettes (19%), Fourqueux (19%), Chavenay (18%), Mareil-Marly (17%), Neuilly-sur Seine (17%). For the most part, these municipalities are located in the western suburbs of Paris, in the Yvelines and Hauts-de-Seine departments, surrounded by wooded areas and golf courses. The top arrondissements of Paris, such as the 7th and the 16th (14%), are a bit farther down the list. The 7th, however, retains the top position, among municipalities with at least one thousand private-sector employees, in the category of percentage of residents in the top 0.1% (4%), ahead of Neuilly-sur-Seine (3.7%).

Aside from these variations of segregation by wage level, figure 8 highlights their conflicting trends between 1995 and 2008. Earners in the lowest quartile, and even those in the middle quantiles (F75-90 in particular), tended to experience something of a desegregation, with the lowest quartile seeing a two-point drop in its index. The concentration rate of top-decile earners, on the other hand, rose a bit (by one index point), and the top percentile’s rate rose more sharply (3.5 additional points, or a multiplication by 1.15). The trends in the indicators of exposure make it possible to examine in detail what the wealthiest workers are exposed to. On average, 58% of the workers living in the same municipality as these individuals were in the lowest three wage quartiles in 2008; they had represented 61% of the population in 1995. The wealthiest are increasingly exposed to the top 10% of earners: the rate rose from 17.3% to 18.2% for the F90-99 group and from 4% to 4.5% for the top 1%.

Furthermore, in figure 9, we propose to study the evolution of the residential and workplace segregation of the top 1%, in France, Île-de-France, and the provinces. This analysis shows that, contrary to what we found in the aggregate index, residential segregation exceeds...
workplace segregation among the highest earners. Thus, in 2007, the city in which the largest number of top-percentile earners worked (among cities with over 1,000 employees) was Courbevoie, with a rate of 8%, which represents a far weaker concentration than the residential concentration of Saint-Nom-la-Bretèche (23%). Nevertheless, it is in the workplace that spatial concentration has advanced the most: 10 additional points and multiplication by 1.5 (based on municipality) or 1.6 (based on department) between 1976 and 2007, and 7 additional points and a multiplication by 1.3 between 1995 and 2008. During the same period of time, the residential separatism of the highest earners grew by only 3.5 points. The second finding is that the segregation of the wealthiest increased twice as much in Île-de-France as it did in the provinces. The residential dissimilarity rate in Île-de-France rose by 3 points, vs. 1.8 in the provinces; the workplace rate rose by 8 points, vs. 3 points in the provinces. The difference in heterogeneity has thus only grown.

Figure 9: Development of the separation of the top 1%

Note: In 2008, the dissimilarity index of Île-de-France top 1% based on municipality of residence (exhaustive) rose to 50%. Thus at least 50% of Île-de-France top 1% would have to move to achieve an equiproportional distribution in this region. Source: Exhaustive Files (1994-2008) and DADS Sample (1976-2007).
Focusing on the highest-paid one percent of earners, then, one can conclude that there is a clear trend toward more segregation, especially in Île-de-France. This observation is consistent with both Saskia Sassen’s general framework regarding global cities and Edmond Préteceille’s analysis (2006) of the spatial segregation of private-sector executives in Île-de-France. It may appear to be out of step with Nina Guyon’s results (2012), which allowed her to conclude, based on an analysis of the top decile, that segregation is stabilizing at the top. However, her results, which are based on a different population, do not analyze the specific fortune of the members of the top 1%, and are affected in part by the 2009 recession.

4. An Evaluation of the Impact of Financialization

We have shown that, during the time when financialization was transforming the position and composition of the wage elite, they tended to live and to work (in more modest proportions) in a manner more separated from the rest of the other wage quantiles. This simultaneity is insufficient evidence of a cause-and-effect relationship.

In an effort to evaluate this more specifically, we propose to carry out a counterfactual exercise: trying to calculate what the level of spatial segregation would have been in the absence of the financialization process. We will restrict this exercise to the financialization of the financial sector, since we have only poorly identified the financialization of nonfinancial companies. As an indicator of the financialization of finance, we will use one of its clear, direct consequences: the explosion of top wages and inequality within the financial sector. The counterfactual experiment thus consists of replacing the finance workers from 2007 with those from 1995, with their share of total wages and their municipalities of residence and work. The difference between the real trend and the counterfactual trend will allow

13. The number of finance workers was lower in 1995 than in 2007, due to the overall growth of the workforce and, especially, the difference in the sets in 2001 (the date from which it becomes possible to follow better a portion of multijob workers; see box). In order to obtain the financial population in 1995 (404,069) with numbers equivalent to the 2007 population (473,572), we have supplemented it with a sample of 69,503 individuals drawn at random from the 1995 population. Since in this counterfactual population the sum of finance workers’ share of total wages in 1995 and that of nonfinance workers in 2007 cannot add up to 100%, we are normalizing the shares by dividing by the latter sum.
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us to identify the impact of financialization. Let us note that, to the extent that the distortion of wages in the financial sector is an incomplete measure of financialization, it is likely that we are somewhat underestimating the sociospatial impact of financialization.

Table 1: Simulation replacing finance employees of 2007 with those from 1995

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Note: 38.2% of employees in the top percentile lived in the provinces in 1995; 35.6% lived there in 2007. This rate would have been 36.8 if the finance sector of 2007 had retained the same places of residence and work and the same salary amount as in 1995. The transformations of the finance sector thus have contributed to 45% of the development of the top 1% between 1995 and 2007.

Table 1 presents the results of such an analysis. As we have already demonstrated by another method (Godechot 2012), the rise in wages in finance has had a noticeable impact on the structure of inequality. Without it, the growth of the top percentile’s share would have been 26% lower, and the top 0.1%’s share 33% lower.

This effect on overall inequality is also expressed spatially. The Paris-province distribution of elite wages also would have been different. The decline of the provinces in the top 1% and (even more so) in the top 0.1% would have been less pronounced: the drop would have been reduced by 45% for the top 1% and by 70% for the top 0.1%. The increase, albeit a moderate one, in the residential segregation of the top earners would have been 40% less. Curiously, the clearer rise in workplace segregation seems less affected by the process of financialization, the impact of which is just 16%. This effect is perhaps the result of the complexity of the dynamic of professional establishment at the municipality level. On the other hand, once we look on a larger scale, such as the department, we get a more substantial contribution from financialization on the separation of the highest earners.

To summarize this counterfactual analysis, then, we would say that the financialization of the financial sector, seen through the deformation of the wage structure in that sector, contributed to 20–40% of the rise in the top percentile’s sociospatial segregation and 40–70% of the segregation of the top 0.1% of earners in France.

* 

The first contribution of this article is to illustrate several trends regarding sociospatial inequality. The rise in high wages and wage inequality in France is centered mainly in Île-de-France, which has led to the disappearance of residents of the provinces from the ranks of the high-earning elite. Measured in the aggregate on the basis of municipality, residential sociospatial segregation has certainly remained stable from 1995 to 2008. On the other hand, the segregation of the best-compensated workers has indeed increased during the same period, especially when measured in Île-de-France alone or on the basis of workplaces.

The second contribution is to isolate one of the determinants of this trend: financialization. This movement, with principally affects a small elite, is admittedly not fundamentally upending the aggregate
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measures of inequality or spatial segregation, but it nonetheless produces noticeable effects on wage inequality and spatial inequality surrounding the highest wages. Thus we show that it is responsible for at least 20-30% of their increase and that it is helping to widen the gap between Île-de-France and the provinces. One important point to continue this work would be to analyze the interaction between these trends and the differentiated price dynamics in the two subsets on the real estate market.14

The gap between Paris and “the French desert” is a well-known and long-condemned phenomenon (Gravier 1947). The traditional reading of this phenomenon is above all political (the weight of monarchical and Jacobin tradition) and cultural (the centralization of cultural and journalistic life). Today, it is primarily the current economic and financial changes that are leading to a reinforcement of this imbalance. We are admittedly lacking a globalization indicator to separate what is due to financialization and what is due to nonfinancial globalization. Through the example of Paris, however, it seems that it is primarily financialization, rather than globalization, that is leading to the increased domination of the major megacities. Are not Paris, New York, London, and Tokyo primarily “financial cities,” rather than “global cities” (Sassen)? A comparative study of countries in which the economic, financial, political, and cultural functions of the great megacities are separated (Italy, the Netherlands, and Germany, for example) could shine a light on the foundations of their domination and its renewal.

Olivier GODECHOT

Sciences Po, MaxPo and OSC-CNRS

Olivier GODECHOT, a CNRS researcher at Sciences Po, MaxPo and OSC-CNRS, specialized in the emerging field of sociology of finance. In 2001, he published Les Traders (La Découverte), a detailed analysis of the work organization, hierarchies, and modes of

14. Such a connection does not seem so simple at first glance. Indeed, a comparison of the price indexes of apartments in Paris and in cities of over ten thousand residents in the provinces since 1994 shows an increasing divergence, both during the late 1990s and, especially, since 2007. On the other hand, during the period from 2001 to 2006, the rate of price increases was slightly higher in the provinces. See “Séries longues : Indices Notaires – Insee des prix des logements anciens,” Institut national de la statistique et des études économiques, http://www.insee.fr/fr/indicateurs/ind96/20100225/sl.xls.
reasoning in use on the trading floor, and in 2007, he published *Working Rich*, a book dealing more specifically with the determination of wages in the finance industry. Since then, he has been working on the macro-social impact of finance on the rest of society. Furthermore, he is simultaneously developing research on the academic world, its job market, networks, and recruitment processes, as well as wage satisfaction.

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Appendix

Evolution of relationships between the thresholds of wage distribution in Île-de-France and in the provinces

Note: In 2007, the threshold for P99 salaries in Île-de-France (the level above which the highest-paid 1% are found) was 1.9 times higher than the P99 in the provinces. P99: lower limit of the highest-paid 1%; P95: lower limit of the highest-paid 5%; P90: lower limit of the top decile; P10: upper limit of the lowest decile; Q1: upper limit of the first quartile; Q3: upper limit of the third quartile. Sources: DADS Panel (1976-2007).
Is finance responsible for the rise in wage inequality in France?

Olivier Godechot*
CNRS-Centre Maurice Halbwachs and LSQ-CREST, Paris, France
*Correspondence: olivier.godechot@ens.fr

Based on the Déclaration Annuelle de Données Sociales, a very detailed French database on wages, we show that wage inequality started to increase in France in the mid-1990s. This phenomenon is limited to the top end of income distribution and concerns mainly the top 0.1%, whose share of total salaries increased from 1.2 to 2% between 1996 and 2007. This increase in inequality was accompanied by some changes in the social composition of this wage elite. These include a decline in CEOs and an increase in lower rank management, such as chief officers and other administrative managers, as well as a rise in sportspersons. A sector approach shows that finance (3% of private sector employees) is responsible for half of the rise in inequality at the top end of wage distribution. We discuss the role the volume of financial activity plays in the tremendous increase of top financial wages.

Keywords: inequality, wages, finance, France
JEL classification: D3 microeconomics, distribution, G2 financial institutions and services, J3 wages, compensation and labor costs

The considerable rise in inequality in the USA during the last 40 years (Piketty and Saez, 2003) is by now almost common knowledge. Although less impressive, this trend appears also at an international level, especially in Anglo-Saxon countries (Atkinson et al., 2011). On the other hand, levels of inequality in continental Europe and Japan remained much more stable over the last 30 years. Is this contrast due to differences in the type of capitalism in those two sets of countries (Amable, 2003)—in short, free market capitalism, on the one hand, and state regulated capitalism, on the other—or is it simply that the same trend towards greater inequality has been delayed in continental Europe? Figures from Landais (2008) show that in France inequalities have been increasing again at a substantial rate, but only since the late 1990s.
The analytical description and interpretation of this rise in inequality is only just beginning. One element of this trend which has been widely commented on is the tremendous rise in CEO pay over the last 30 years (Bebchuk and Grinstein, 2005; Gabaix and Landier, 2008; DiPrete and Pittinsky, 2010; Nagel, 2010). Another element is the increase in compensations in the entertainment industry for sporting or artistic superstars (Rosen, 1981). The social importance and visibility of these elites, and the availability of their compensation to the public, may explain part of the focus. However, it is uncertain that they account for a great deal of the rise in inequality. More recently, partly owing to the financial crisis and the bonus outrage, the importance of financial wages has come under scrutiny (Kaplan and Rauh, 2010). Philippon and Resheff (2009) show that in recent years the financial sector has granted wages 50–60% higher than other sectors for jobs requiring the same level of qualification. Bell and Van Reenen (2010) estimate that 70% of the recent increase in the share of the top 1% in the UK was captured by workers in the financial industry. Bakija et al. (2010) offer detailed statistics on the occupations of top earners in the USA. According to their data set, a little more than 30% of the increase in the share of top earners went to people working in finance.

The goal of the following paper is to investigate the transformation of inequality in France. To that aim, we rely on the DADS data (1976–2007)\(^1\), the French Social Security wage data for the private sector. Such data enable us to ask questions about the changing patterns of wage inequality in France. Firstly, how reliable is the rise in inequality discovered by Landais using self-declared fiscal sources? If this trend is robust, then who are the beneficiaries? CEO, managers, experts, entertainment superstars? Since Paris finance is not as wealthy as that of London or Wall Street, does it nevertheless account for as much of the rise in inequality?

The paper is organized as follows. In the first section, we will describe the data. The second section is devoted to the rise in wage inequality over the last 30 years. The third section deals with the changing characteristics of the working rich in France. In the fourth section we will concentrate on the impact of finance on the evolution of wage inequality. And finally, in the last section, we will offer interpretations of the rise of top financial wages.

1. The DADS, a detailed data set on wages in the private sector

The DADS, *Déclaration Annuelle de Données Sociales*, is an INSEE (Institut national de la statistique et des études économiques) statistical data set based

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\(^1\)Access to the data was obtained through the CASD dedicated to researchers authorized by the French *Comité du secret statistique*. 
on an administrative source. In order to collect social contributions for Social Security—payroll taxes, which are more or less proportional to an employee’s wage—the French government collects data on all wages from the private sector. Social contributions from national civil servants are collected through a different system, and therefore, at present, the latter are not in the database.

On the basis of these administrative records, two main data sets are available. The first is the Panel DADS (1976–2007), which contains $\frac{1}{24}$th of private sector wage earners from 1976 to 2001 and $\frac{1}{12}$th of the same population after 2001. The second data set is made up of exhaustive files, organized by year and by region, on all jobs in the private sectors from 1994 to 2007.

The great advantage of the DADS is that it offers a very precise image of wages in France and enables us to calculate fractiles at the very top of the wage distribution. Moreover, unlike other sources (Philippon and Resheff, 2009; Kopczuk et al., 2010), wages in the DADS are not top coded. Nevertheless, there are some obvious limitations in our data that might lead us to both underestimate and overestimate inequalities in France during recent years.

The notion of wage, as collected in the DADS, is more juridical and fiscal than economic. It corresponds to the part of the wage on which social contributions are collected. Two main notions of salary are available: the net salary and the gross salary.

The gross salary ‘base csg’ is quite exhaustive. It contains not only fixed salary and variable salary, but also perks (such as car or housing), ‘participation’ and ‘intéressement’—i.e. the two main regulated profit sharing devices (DSDS, 2010, pp. 35–36). The main limitation is that stock options and free shares are not counted in this notion of salary, since before 2007, no payroll taxes were collected directly on these forms of wages. Therefore, we may underestimate some high salaries like those granted to CEOs of major firms.

Another problem may arise from the fact that the DADS files are organized according to jobs rather than individuals. Are we to calculate inequalities

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2They select people born in October every 2 years until 2001, and every year thereafter.

3In the exhaustive files, it is not possible to identify a worker from 1 year to another or even, between 1994 and 2001, from one job to another. However, these files contain the situation in year $t$ and year $t-1$, so it is possible to measure changes over a 2-year period of time.

4As outliers possibly resulting from transcription errors may have a significant impact on the top fractiles, we have excluded salaries that were more than 100 times the P99.99 threshold. That is, two salaries in 1994 over 50 million euros, one in 2002 and four in 2007 over 100 million euros.

5Unfortunately, the DADS do not give any information on the share of the different components of the salary.

6Dividends and commercial benefits are also not counted in the DADS’ notion of wage. We therefore underestimate the revenues of CEOs who own an important fraction of their firm.
among jobs or among individuals? Since workers may have multiple jobs during the year (successively or simultaneously), especially in an industry such as entertainment, the latter option appears more relevant. Unfortunately, this approach is not possible with the exhaustive data files before 2001, as those files lack individual identification variables. Therefore, before 2001, we limit ourselves to full-time, non-annex jobs\(^7\) and assume that those jobs are held by different individuals.\(^8\)

The notion of hourly wage is not the best approach for studying inequality at the top of the wage distribution, since we find jobs in consultancy or the leisure industry where people earn high wages for a very limited set of hours. Moreover, hours are adjusted by INSEE for what they consider to be extravagant hourly wages. This leans in favour of using yearly wages. Nevertheless, some workers may have jobs in the private sector for very short periods of time and therefore appear to be poor on the basis of a yearly wage. In some cases, they are in fact poor, and that should be accounted for. In other cases, they might be students, civil servants or self-employed persons who work just a few hours a year as wage-earners in the private sector. Counting them on the basis of their yearly wage as low-paid workers would be artificial and lead to an overestimation of inequality. Moreover, this fraction of the population might not be stable from 1 year to the next, which could generate a bias in the patterns of evolution. In order to avoid this limitation, we restrict our sample, as in Kopczuk et al. (2010), to salaries that are over half the yearly minimum wage.\(^9\) We have ensured that moving this minimum threshold did not change our qualitative results.

Let us summarize: first, in the panel (1976–2007) and in the 2002–2007 exhaustive files, we use the annual sum of gross wages by individuals that are over half the minimum wage.\(^10\) In the 1994–2001 exhaustive files, we use the

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\(^7\)A job is considered non-annex by INSEE if the compensation is over 3 months of minimum wage or the number of hours is over 120, the duration over 30 days and the number of hours per day over 1.5. A job is full time if the number of hours per day is over a certain threshold, which INSEE calculates for each sector.

\(^8\)This approximation first leads us to consider that a person who moves from one job to another in the middle of the year has two different jobs and is therefore considered two different individuals. We also exclude individuals who hold many jobs that are annex, part-time or under the threshold of half the yearly minimum wage. A comparison of the two approaches is possible for 2001. In the first approach (based on the 2001 files), we analyse inequalities among 12 670 098 ‘workers’. In the second approach (based on the 2002 files that go back to 2001), our analysis applies to 15 146 231 workers.

\(^9\)This restriction is applied to both the panel and the exhaustive files.

\(^10\)Before 1999, we use the fiscal gross wage and after 1999, the CSG-based gross wage. As local civil servants, mail and hospital workers only enter the panel in the 1980s; for the sake of continuity we also decided to exclude them from the panel. Local civil servants and hospital civil servants were also excluded from the treatment of the exhaustive files.
annual gross wage of full-time, non-annex jobs that are over half the minimum wage.

2. The rise in inequality in France

Social scientists generally consider France to be a good example of stability in inequality during the last 30 years (Atkinson, 2008; Piketty, 2001). We find very similar results within the scope of our data. The classical P90/P10 ratio drops by 14% from 4.26 in 1976 to 3.73 in 1984, rises by 10% between 1984 and 1989 and remains very stable through the rest of the period ending at 4.08 in 2007. With this classical indicator, there is no clear sign of a recent surge in inequality, in contrast to what has happened in other OECD countries. In the USA, for instance, the same ratio rose continuously by 27% between 1973 and 2000 (Atkinson, 2008, pp. 411–412); in the UK it increased by 20% between 1977 and 2000 (Atkinson, 2008, pp. 384–385). Even Germany, known for the stability of its income distribution, experienced a sharper increase than France: the P90/P10 ratio increased by 17% between 1989 and 2001.

Nevertheless, the P90/P10 ratio may give a biased view of the evolution of inequality, as it excludes by construction the top wages that went through a sharp increase in many countries during the last two decades. Therefore, in order to analyse the evolution of inequality, we calculate fractiles at the top of the wage distribution following Piketty (2001). As the population panel is very large (1/24 and 1/12th) and the DADS regional files are exhaustive, there is no need to compute a Paretian approximation of the threshold or the mean of each fractile.

We find a global increase of wages, albeit at different rates for each fractile. F0-90, F90-95, F95-99 and F99-99.9 seem to have increased slowly and regularly at the rate of +1% a year. F99.9-99.99 and F99.99-100, especially over the last 10 years, have increased more quickly. In 2007, the top 0.01%—that is, the 1692 highest-paid persons in the private sector earning more than 867 000 euros—were paid on average 1 682 000 euros a year, whereas the F0-90 fractile earned between 7600 and 46 700 euros in gross salary and on average 22 400 euros a year (Supplementay material, Tables S1 and S2, and Figure S1).

Therefore, the share of the majority (F0-90) is globally declining, losing 2 points in 30 years. The share of the ‘middle classes’, defined by the fractiles between P90 and P99.9, remains globally stable or is increasing at a slow rate. When we move to the top 0.1%, however, we can see a sharp increase of their share after the year 1996 (Figure 1). The share of the top 0.1% increases by 0.8 points, moving from 1.2% in 1996 up to 2.0%. Half of the 0.8-point increase is for the top 0.01% and half for the F99.9-99.99.

Given that in the panel the share of the top 0.01% is based on a limited number of workers (50–60 up to 2001 and 100–120 after 2001), the robustness
of the measured changes may be questionable. An analysis of the exhaustive files leads to largely similar results. The top 0.1% increases its share by 0.85%, moving up from 1.1% in 1996 and 1.95% in 2007.\footnote{It seems that 0.05 point of this increase was due to the change of definition in 2001.} Half of this increase is for the top 0.01%.

Are the changes that we have described reliable? There are some limitations in our data, discussed above, which may lead us to both underestimate and overestimate inequalities. Moreover, INSEE is generally cautious with income data from DADS, as they suspect that some reporting errors might diminish the quality of the description of top incomes. Hence, they generally study lower levels of top incomes (Amar, 2010). INSEE believes that errors have been diminishing over time (DSDS, 2010). If we consider that the main error at this level is that of over-reporting, this should lead us to underestimate any increase in inequality.

\emph{Note:} In 2007, the top 0.1% earners were paid 2.0% of the salaries.
\emph{Sources:} DADS, panel (1976–2007) and exhaustive job files (1994–2007).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Evolution of the share of the top 0.1% wage earners.}
\end{figure}
Nevertheless, when we compare our trends with those of other sources and authors, like Landais (2008) or Solard (2010), we find similar qualitative results. Landais, based on income self-declaration, finds that between 1998 and 2006, the total income of the top 0.01% increased by 64% (capital income and exercised stock options included), and the wages of the top 0.01% increased by 69%. For the same time period, we find a 123% (exhaustive files) to 131% (panel) increase in the top 0.01% of wages. Part of the difference may be due to the fact that Landais works on self-declared net wages and on a larger population (including civil servants and self-employed persons). Solard finds an increase in income of 39% for the top 0.01% (capital income and exercised stock options included) between 2004 and 2007. We find an increase of 44% of the top 0.01% in the panel and of 36% in the exhaustive files. Although one is based on wages and the other on full income, the two trends seem to conform to the same pattern.

Moreover, like Kopczuk et al. (2010) for the USA and Landais for France (2008), we also find with our data that the increase in inequality at the top of wage distribution during the last 12 years did not correlate with an increase in wage mobility at that level. Stability in the top 0.1% did slightly decrease in the first half of the 1980s and increased again in the second half of the same period, but remained stable in the 1990s and the 2000s. The probability of remaining in the top 0.1% in the following year remains relatively stable, changing cyclically between 70 and 80%, and after 5 years it remains constant between 50 and 60%. Therefore, despite the randomness of new forms of remuneration, such as incentive bonuses, this increase in inequality is clearly not the advent of a lottery society where people suddenly jump to the top or fall to the bottom of the wage distribution.

3. Changes among the working rich

Empirical studies on inequality (Atkinson et al., 2011, Landais, 2008) usually discuss several hypotheses in order to explain this trend: biased technological progress, growth of CEO pay due to the growing size of firms as well as an increase in superstars’ pay. However, given the limitations of their data, they are generally unable to provide sufficient empirical evidence to confirm or infirm either thesis. Although limited to private sector remuneration, the DADS has two reputable qualities: its historical depth and its economic and social variables. Thus, it is possible to explore the changes in the social composition of the working rich and to test these hypotheses with this data.

We therefore study the change in the composition of the top 0.1% and the top 0.01%. The panel gives the composition in terms of jobs since 1984, with the 1982
PCS coding. Figure 2 shows some striking transformations within the top 0.1%. The first surprise is the decline of CEOs since 1992.12 The proportion of CEOs among the top 0.1% dropped from 50% in 1992 to 22% in 2007. Is this decline due to a change in the composition of wages and a rise of stock options that are not reported in the DADS? Unfortunately, we lack precise data on stock options. Several studies converge in showing that stock options boomed in the 1990s for executives and declined after 2002 (Hamouda, 2010;)

12The increase of the proportion of CEOs between 1984 and 1992 is more difficult to analyse. In the 1980s, the coding of the PCS was not very reliable, and there were also some errors in the wages reported. Those two problems make it more likely that middle and lower categories will be artificially represented in the top 0.1%. This growth may also be due to the change in the composition of CEO remuneration from capital income to wages. And finally, it is also possible that the 1980s, a period in which free enterprise and, in particular, small firms were promoted, was also a time when access to top salaries was obtained mainly through a position as CEO.
Nevertheless, stock options have a decisive impact on executive pay mainly in big firms. If the moderate and volatile decline of CEOs of large firms (more than 1000 workers) within the top 0.1% is artificial, the sharp decline of CEOs of small firms (less than 1000 workers), from 45% of the top 0.1% in 1992 to 24% at the end of our period, is less likely to be so.

Although CEO pay for large firms may have risen sharply (Evain, 2007), our data suggests that the rise in inequality is not due mainly to the traditional elites directing firms, but rather to lower ranking managers and experts. As long as the CEOs are not the category that is most responsible for the rise in wage inequality in France or in the USA (Kaplan and Rauh, 2010; Bakija et al., 2010), the rise of their pay—although higher than that of average salaries (Evain, 2007; Gabaix and Landier, 2008)—appears to be different than generally analysed. In most models, CEO pay fluctuates independently of that of other wage earners. For instance, CEO pay in Gabaix and Landier (2008) is set by an autonomous market design, whereas in Bebchuk and Fried (2004) it is a function of executives’ power under the constraint of public outrage. The pronounced increase in pay among some lower management wage earners changes our understanding of CEO pay fluctuation, since it might also have increased the outside options (market model) or have lowered the public outrage constraint (managers’ power model).

Let us now analyse the impact of lower ranking managers on inequality growth. First, it must be noted that rising inequality is not due to the rise in the number of technical professionals such as engineers, whose share stagnates inside the top 0.1% at a limited level of 8–10%. This element mitigates the traditional interpretation in terms of biased technological progress. The rise in inequality does not seem to be due to workers holding the most technical and scientific knowledge, as was feared in the 1960s and 1970s with the birth of knowledge and technical societies.

One social category accounts for most of the rise: administrative managers (‘cadres administratifs’). This group accounted for a little less than 20% in the mid-1980s. They now represent almost 60% of the top 0.1%. This category increased by 20 points between 1996 and 2007, a period in which inequalities escalated once again. Almost half of this increase is due to the category ‘cadres d’état major’, non-executive chief officers, such as chief financial officers, chief

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13Proxinvest calculates the Black and Scholes values of shares and stock options granted to executives for CAC40 since 1998. It rises from 40 to 70% between 1998 and 2001 and drops back to 45% in the middle 2000s (Leroy, 2010).

14The comparison with Kaplan and Rauh (2010) is relatively complex, since they predominantly use publicly available information on top executives of publicly traded firms. In their data, we find stability of executives among the top 0.1%. The particularly detailed data from Bakija et al. (2010) show a decline of the proportion of CEOs among the top 0.1% from 35% in 1997 to 30% in 2005.
commercial officers, chief administrative officers etc. Unfortunately, we cannot go into greater detail, but we suspect, as in the USA (Zorn et al., 2005), that the CFOs, with the ‘financialization’ of firms, are at the root of this trend among top management. The other half is due to lower ranking managers. We will see further in the next section whether this pressure on salaries exerted by lower ranking managers is a generalized phenomenon or is due to some limited sectors of the economy.

The salaries of sports and media superstars are traditionally under significant media scrutiny due to the fame of the recipients. Rosen (1981) argues that the transformation of technology might drive a major increase for the most famous superstars, since new technologies such as television, radio, CDs etc. enable them to replicate their production almost at no cost and become famous among a wider market. In his survey of the sports economy, Andreff (2007) also signals the importance of the institutional framework that regulates both the superstar labour market and the media and advertising industries. In France, the deregulation of television in the 1980s enabled the multiplication of TV channels and competition between them for both advertising fees and broadcasting of superstars. Therefore, superstars could extract a larger share of the advertising fees. In the early 1990s, the labour market was also deregulated in the professional sports industry. In European football, the Bosman ruling in 1995 put an end to the limitation on the number of foreign players in European football clubs and, therefore, favoured an increase in transfer fees and salaries.

As the DADS are a wage database only, it will be difficult to give a complete picture of the impact of entertainment superstars on inequality. Many artists such as pop singers or writers are paid through copyrights. Nevertheless, we can at least provide some insight into two categories: sportspeople and film actors. Sportspeople, like football players, earn their base pay as a salary. And even if actors are also paid through copyrights and associated rights, a major part of their income is based on a labour contract and a wage.

Regarding the evolution of the proportion of artists and sportspeople among the top 0.01%, we must remain cautious in our interpretation, since the detailed 4-digit PCS job code is unreliable before 1997, and rather unreliable between 1997 and 1999 (with 40–60% of answers either missing or incorrect), becoming slightly better at the end of the period (missing answers drop from 34 to 18% between 2000 and 2007). Nevertheless, the more aggregate two-digit social categories code does not have such limitations and helps us to see the global trend.

With all of this in mind, the proportion of artists among the top 0.01% looks rather stable and is near 2%. Are we missing the real change, since we do not

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15The data show a significant discontinuity in 2001 due to the fact that before this date we cannot sum multiple jobs.
have their whole income? We do not think so. Newspapers quite often give rank-
ings of the best-paid actors. In 2007, Le Figaro counted 12 actors over the thresh-
old of 894 000 euros.\textsuperscript{16} In our database, we count 11 actors (PCS = 354C) in the
top 0.01%. Although their income and expenditure are largely commented on,
artists—or at least actors—do not contribute a great deal to the return of
inequality.

The impact of sportspeople seems more sensible. They increase from 4% of
the top 0.01% fractile in the mid-1990s up to 8–10% in the 2000s. In
2007, we count 112 persons coded 424A professional sportspeople. Although
we do not know their sport, it seems very likely that most of them are foot-
ball players.\textsuperscript{17} Indeed, the transformation of their labour market enabled by
the Bosman ruling seems to have had important effects on wages in the
sports industry.

In the end, however, although we find that superstars, or at least football
players, do have an effect on inequality, the effect remains limited compared
with the rise in salaries of a fraction of business managers that we will try to
define more precisely in the next section.

4. The impact of finance on the resurgence of inequality

A sector approach enables us to describe more precisely the type of business man-
gers that contributed the most to the increase in inequality. It is also a way to
address the question of the impact of finance, an industry under scrutiny since
the subprime crash and the ensuing bonus outrage.

Some sectors such as manufacturing, retail and restaurants, transport and
communication are now less represented at the top of the wage hierarchy than
they were 30 years ago. For instance, 38% of the top 0.1% worked in manufactur-
ing in 1976, whereas only 14% did so in 2007. On the other hand, service to busi-
ness, finance and, to a lesser extent, entertainment and other services increased
their share among the highest paid workers. In 1976, 10% of the top 0.1%
were in service to business, and 6% were in finance. In 2007, these figures were
26 and 24%, respectively (Supplementary material, Figure S2).

At first glance, finance still seems to lag behind service to business among the
top 0.1%. However, the increase and decrease in the different sectors at the top
should be compared with their evolution as a whole inside the private sector.
Thus, service to business is a sector in which the headcount has grown quite


\textsuperscript{17}We find several football clubs among the firms paying the highest salaries. Moreover, there were not
so many international superstars in cycling or tennis during the period, and other sports like
basketball or rugby pay much less in France.
rapidly during the last quarter of a century, whereas the number of workers in finance has remained a fairly stable proportion of the private sector.\textsuperscript{18} We therefore compute the odds ratio of (a) the percentage within the top 0.1% with (b) the percentage within the rest of the French private sector, in order to control for the fluctuations in the size of the sectors among the global population. The result is very striking: in the finance industry of the early 1980s, financial workers had twice the presence in the top 0.1% as they had under this threshold. This ratio increased smoothly in the 1980s and very sharply after 1995. In 2001, the ratio peaked at 10, as a result of the considerable bonuses granted after the excellent market year of 2000. The 2001–2002 crisis lowered it to 7, and the following boom pushed the ratio back to 10 (Supplementary material, Figure S3). Although some sectors might be over-represented among the top salaries, like service to business or entertainment, no overrepresentation is as considerable as that achieved by the finance industry in the last 10 years.

We find a correlation between the notable rise in the overrepresentation of finance among the top 0.1% after 1995 and the rise in inequality in the same period. Therefore, we can try to quantify the contribution of this sector to this increase, following Bell and Van Reenen (2010). We calculate the contribution of finance, service to business, entertainment and other sectors to the 0.85-point increase of the wage share. We find that finance contributed to 48% of this rise, whereas service to business and other sectors each contributed nearly 23%, and entertainment to 8% of the rise (Figure 3).

When we move into the top 0.01%, we find that finance makes a contribution of 57% to the increase in the share of the working rich (Table 1). At the end of the period, finance constitutes 37% of the headcount of the top 0.01%, which are 19.4 times more present at this level than below. Overrepresentation of this sector within the top fractile is much higher than that of service to business (2.3) or entertainment (6.7). Moreover, we must not forget that we have a small discontinuity in 2001 in our series of exhaustive files that may lead us to overestimate the increase between 1996 and 2007 and to underestimate the impact of finance on this increase. When we look at calculations on the basis of the panel data, finance makes a greater contribution to the increase in the top fractiles—between 47 and 70% (Table 1).

Our figures for France are in between those that can be calculated from Bakija\textit{ et al.} (2010) for the USA and those found by Bell and Van Reenen (2010) for the UK. In all three countries, finance played a major role in the return of wage inequality, contributing to a third (USA), a half (France) and three quarters (UK) of

\textsuperscript{18}Of the private-sector workforce, 2.8% was working in finance at the end of the 1970s. This proportion rose to 3.5% in the mid-1980s, declining to 2.9% in 2000 and stabilizing around 3% thereafter (panel).
the rise of top wages. This strong contribution must be balanced against the much more limited share of finance within the workforce at the end of the period: 2% in France, 3% in the UK and 3.4% in the USA. Beyond this overrepresentation of finance at the top and in the surge, we nevertheless find some striking differences. Part of the discrepancy is due to differences in data, methods and industry definition. For instance Bakija et al. (2010) analyse the full income. For France, the limitation to private sector wages only (excluding therefore many self-employed professionals such as doctors and lawyers) and to cash salaries (excluding CEO stock-options and shares) leads us to recognize that our estimation of the contribution of finance to the surge in inequality is more likely an upper bound. Nevertheless, part of the divergence also seems to come from the nature of the phenomenon. In the USA, growth of top incomes seems to additionally concern many other sectors and professions, such as lawyers, real estate professionals and non-finance business executives and managers. In France and

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19 We use the 2007 Emploi survey for France (civil servants and self-employed persons included), the 2007 Labour Force Survey for the UK and the 2008 County Business Patterns for the USA.

20 Bell and Van Reenen (2010) also estimate the contribution of finance to the growth of top incomes at 60%, a figure that can be more easily compared with that of Bakija et al. (2010).
in the UK, where the surge in inequality is much more recent, it is more concentrated in finance, a sector that could be viewed as the avant-garde of this new trend. The difference in the size of the two financial centres, Paris and London, probably accounts for this difference between France and the UK.21

Finance, therefore, appears to have played a major role in the return of wage inequality in France. How did this trend arise? Has remuneration in finance been growing at all levels compared with the rest of the economy? Or is the deviation due to certain levels of income distribution?

In order to analyse the structure of the premium for the financial sector, we run annual cross-section wage quantile regressions with the following control variables: sex, age, square age, seniority, square seniority, social group (managers, technicians, clerks, workers), geographical location (Paris region versus rest of France), number and square number of employees in the firm and a variable for the financial sector (Supplementary material, Figure S4). In 1976, the premium for the financial sector was 23%. It went down to 11% in 1989 and climbed

| Table 1 Contribution of finance to the increase in the share of the top fractiles |
|---------------------------------|----------------|----------------|----------------|
|                                  | Top 10% | Top 1% | Top 0.1% | Top 0.01% |
| France panel (%)                  |         |        |          |          |
| Share in 1996                     | 26.45   | 5.74   | 1.20     | 0.27     |
| Share in 2007                     | 27.74   | 7.06   | 2.01     | 0.65     |
| Increase in the share             | 1.29    | 1.32   | 0.81     | 0.38     |
| Contribution of finance to this increase | 51      | 47     | 57       | 69       |
| France exhaustive files (%)       |         |        |          |          |
| Share in 1996                     | 25.67   | 5.43   | 1.10     | 0.23     |
| Share in 2007                     | 27.70   | 6.97   | 1.95     | 0.60     |
| Increase in the share             | 2.03    | 1.54   | 0.85     | 0.38     |
| Contribution of finance to this increase | 33      | 39     | 48       | 57       |
| UK 1998–2008 (%)                  |         |        |          |          |
| Increase in the share             | 3.00    | 1.80   | —        | —        |
| Contribution of finance to this increase | 73      | 72     | —        | —        |
| USA 1997–2005 (%)                 |         |        |          |          |
| Increase in the share             | —       | 2.54   | 1.65     | —        |
| Contribution of finance to this increase | —      | 32     | 31       | —        |

Notes: Between 1996 and 2007, according to the France panel, the share of the top 10% increased by 1.29 points, and finance within this fractile contributed 51% to this increase.
Sources: France: DADS, panel (1976–2007) and exhaustive job files (1994–2007); UK: Bell and Van Reenen, 2010, Table 3—ASHE; USA: Bakija et al., 2010, Tables 5 and 6.

21In 2007, 3.8% of the workforce worked in finance in the Paris region (Emploi survey), while 5.5% did the same in the London region (Labour Force Survey). It should be noted that when we do the same decomposition on the Paris region only, we find that the rate of increase in inequality and the contribution of finance to this increase are more similar to the situation in the UK. The increase of top 0.1% share in Île de France is 1.4%, and the contribution of finance amounts to 60% of that share.
back to 22% in 2007. Quantile regressions show a similar evolution for most of the thresholds except for P99, which has been increasing in the medium term from 9 to 37%. The hierarchy of premium also changed substantially. At the end of the 1970s, the premium was larger at the bottom of the distribution (ranging from 9% for P99 to 34% for P10); in the 2000s, apart from the P99, most of the thresholds converged between 19 and 23%. Therefore, the contribution of finance to the increase in wage inequality mainly seems to be linked to the evolution of its top 1% and to the considerable rise in inequality within this sector. Hence, in less than 12 years, the share of the top 1% within finance moved from 6% to 12% of the wage share.

Who is responsible for the increase in inequality within the finance industry? Following Kaplan and Rauh (2010), we would expect the employees who are most tied to the financial markets to be linked to this phenomenon. In 2003, INSEE reformed its PCS code and introduced a new category, financial market managers (cadres des marchés financiers), among whom we find traders, salespeople, financial analysts, portfolio managers, brokers, financial engineers and risk managers. The category reflects quite well what people in the market generally call ‘front offices’. This group is very likely to capture the impact of the growth of financial markets on wages. Unfortunately, there are a few drawbacks. First, the category does not allow close scrutiny of the 12 years under consideration and does not allow us to view the great boom of the financial markets during the second half of the 1990s. Second, due to its novelty, firms might not be accustomed to the new code for people that were traditionally coded as bank managers (cadres de banque). Third, we do not know if heads of trading rooms and heads of desks, the highest-paid employees on the financial markets, are always coded as such. Despite its limitations, the category is a good proxy for the recent impact of the financial market (with perhaps a little underestimation of the actual scope).

During the last 5 years, the importance of this category grew in the top fractiles of the financial sector. They made up 20.6% of the top 1% in finance. They represented 27.8% in 2007. The same growing trend is observable within the French private sector. By 2007, at the end of the period studied, financial market managers accounted for 13% of the top 0.01%—that is more than professional sportspeople—and were 150 times better represented than in the rest of society. Therefore, although we do not have much historical depth, the impact of market managers on the 2003–2007 rise in inequality suggests that it is mainly the boom of financial market activity since the mid-1990s that fuelled inequality in finance.

5. Elements of interpretation

Finally, Figure 4, which compares the evolution of top salaries, allows us to sum up some of our main findings. In the figure, we analyse the evolution of the top
100 finance managers (people working in finance sector as ‘cadres’), the top 100 non-finance and non-entertainment managers, the top 100 CEOs, the top 25 sportspersons and the top 20 wage earners in the movie, TV and video sectors (most of whom are actors). Between 1996 and 2007, wages increased by 1.5 in this latter group, by 3.3 in sports and among the top CEOs, by 3.6 among the top non-finance managers and by 8.7 among the top 100 finance managers.

On the basis of salary comparison, top finance managers clearly surpass other elites both by the pace of growth and by the level of pay at the end of the period. We nevertheless must remain cautious, as we lack information on other forms of compensation such as shares or stock options. In order to partly overcome this limitation, we have estimated for top CEOs the probable changes in compensation, stock options included, by applying the share of stock options to them that Proxinvest (2009) calculated for CAC40 executive teams. The pace of increase of top finance managers pay (salary only) was double that of top CEOs, and the former almost caught the level of the latter.

Notes: In 2007, the top 100 finance managers were paid 4,652,388 euros on average per year. Yearly figures have been calculated in 2007 constant euros.


Figure 4 Evolution of the wages for several well-known jobs.

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22 We must note that the top 100 CEOs and the executive teams of CAC40 (approximately 400–500 executives) is not the same population. The best-paid CEOs in cash may be outside CAC40, or even outside the SBF 250 spectrum. They may also work in non-public firms. Nevertheless, there is enough proximity between the two populations to use as a rule of thumb the Proxinvest series, which has to my knowledge the most historical depth. Proxinvest calculates the Black and Scholes value of options granted to CEOs, with a small discount for the invalidity period. The Black and Scholes value of stock options is a good representation of compensation and, thus, of inequality in
in 2007. Moreover, although remuneration in shares and above all in stock options was not particularly common before the 2008 crisis, it is likely that this small financial elite did increasingly benefit from this form of pay.\(^{23}\)

Therefore, the most scrutinized, highly paid professionals, such as CEOs and entertainment superstars, are not responsible for most of the increase in inequality in comparison with finance managers, in particular heads of desks and heads of trading rooms.

Several interpretations have been provided in order to explain this extraordinary wage trend in the financial industry. The importance of human capital has been researched both by Philippon and Reshef (2009) for the USA, and also for one of France’s main banks (Godechot, 2011). Despite the importance of higher education degrees at the core of the financial markets, even very detailed education variables in traditional wage equations fail to explain the wage structure or its evolution.

A great deal of recent research links the way in which compensation in the financial industry has evolved with the evolution of the volume of activity (Meunier, 2007; Kaplan and Rauh, 2010; Cèlérier, 2010). Kaplan and Rauh (2010) outline an impressive series on the rise in the amount under management in hedge funds, increasing from 20 billion in 1986 to 1 trillion in 2004.

Although the volume of shares exchanged on the Paris stock market (Figure 5) may not be fully representative of the increase in the volume of financial activity—missing over-the-counter, fixed-income or foreign financial products—it is at first glance a reasonably good approximation of investment bank activity, which, in the end, in France is mainly an activity of intermediation (brokering, equity derivatives pricing and marketing etc.). Figure 5 clearly shows how financial activity boomed at a very rapid rate during three periods: 1984–1987 (+70% per year), 1995–2000 (+50% per year) and 2004–2007 (+25% per year).

If we compare the evolution of the top 100 finance managers during the last 12 years with our volume index, results are strikingly congruent with the idea

\(^{23}\)In an internet survey launched with efinancialcareers.fr in September 2008—a snowball sample \((n = 992)\), broadly representative of the diversity of the financial industry (with a junior bias)—we found that the proportion of persons earning stock options was only 3%, and the proportion of those with shares was 4%. Since the subprime crisis, pay regulation policies have recommended that firms pay roughly one-third of bonuses in restricted shares. Hedge fund managers who are partners of their firm may also earn directly commercial benefits in addition to a fixed salary, bonuses and stock options. However, hedge funds remain rare and small due to restrictive legislation in France.
that there is a strong link between volume and compensation. Between 1995 and 2006, volume was multiplied by 8.85. During the same period, the top 100 finance managers’ wages were multiplied by 8.26. The correlation between the two curves ($r = 0.92$), although not perfect, is nevertheless impressive.

Although we must remain cautious and acknowledge that a correlation based on 14 observations may be spurious, let us note that this relation is also supported by more qualitative elements collected in fieldwork research. If banks tended in the 1980s and the 1990s to replace formulas for bonus by qualitative discretionary pay, they also introduced some collective formulas based on net

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$^{24}$The effect of the first boom of the 1980s on compensations is more difficult to detect for the following reasons: financial markets represented only a small fraction of the finance activities at that time, the panel at 1/24th of the population lacks precision and a large part of these activities were then carried out by the Agents de change, traditional French brokers and their employees, who were largely paid via heterodox means.

$^{25}$If we regress the logarithm of the top 100 average wages on the logarithm of volume index, we find an R2 of 85% and a very significant coefficient of 0.9.
revenue in order to generate bonus pools at the departmental level (for instance, equity derivative departments) (Eccles and Crane, 1988). Those formulas (more generally a simple proportion of the net income) are volume driven, and in practice heads of departments’ share of the bonus pool did not seem to diminish with growth of the headcount under their supervision.

The traditional but intriguing correlation between CEO pay and firm size was recently given an explanation that could be relevant for financial market managers. Gabaix and Landier (2008) explain how the heterogeneity of CEO talent may be multiplied by a skewed distribution of volume. They develop a model where the biggest firm hires the best CEO in order to maximize the impact of the CEO for its shareholders. In this model, the best CEO does not need to be a ‘superhero’, but only to be slightly better than the 250th CEO (that is, to increase the capitalization by 0.016%) in order to get, due to the skewness of the distribution of company size, a multiple of its salary (for instance five times more in their calibration). In their model, while the cross-section relation between logarithm of pay and logarithm of size is only one-third, it increases to 1 in a longitudinal approach.

This mechanism was also invoked for financial labour markets by several authors (Meunier, 2007; Kaplan and Rauh, 2010), and Célérié (2010) developed a model based partially on this idea. In the same spirit, if a star trader can get 5.1% return on equity instead of 5.0% as an ordinary trader, he will be matched to the biggest portfolio and will get an extra bonus of 0.1% of the size of the portfolio (for instance, 1 million euros more if he is matched to a 1 billion euro portfolio). If we follow this perfect market mechanism of matching of size and talent, which requires the following two strong conditions, perfect mobility and perfect knowledge of the hierarchy of talent, the hierarchy of pay only follows a natural, independent hierarchy of talent.

Two cases may be distinguished depending on the generality or the specificity of talent for finance.

If talent is general (like in Gabaix and Landier’s main framework), pay will be distorted by the skewness of the distribution of volume. But we still cannot talk of rents here. The theoretical result rests on perfect mobility both within and between sectors. This first hypothesis is at odds with the data: the mobility rate from non-finance to finance did not increase during the 1996–2001 finance boom, although the increase in size of projects in finance should have attracted more non-finance top performers.²⁶

If talent is sector specific, the model still holds under the hypothesis of perfect mobility within the sector. But if a boom in finance increases volume and therefore pay, we may be allowed to talk of a global rent in finance, in the sense that

²⁶In 2001, only 1.1% of the top 10% of managers in 1996 working in non-finance had moved to finance (booming period). In 1996, 1.7% of 1991’s similar population did so (non-booming period).
after the boom there will be an excess in earnings over the amount necessary to keep the factor in its current occupation (Shepherd, 1970).

Moreover, the ‘natural’ origin of talent that plays an important role in these models in order to justify these compensations may be questioned. Thus, Oyer (2008) shows that MBAs will be all the more likely to work in finance, to stay in the sector long-term and to earn top wages if they have graduated in a bull market. This statement may seem quite trivial, but it shows clearly that finance managers ‘are largely “made” by circumstance rather than “born” to work on Wall Street’ (Oyer, 2008). Were finance talent natural, there would be no reason for talented finance people to be more numerous in bull years than in bear years. And were they incorrectly selected in bull years, we should see more of them leaving finance, which is clearly not the case. Oyer concludes that MBAs develop finance-specific human capital shortly after taking jobs on Wall Street.

Therefore, we can retain the idea that the volume of financial activity is responsible for the increase in pay without linking it to a natural and intangible hierarchy of talents. Talent may not only be natural, observed and eventually revealed by the financial industry (Célérer, 2010), but also acquired on the job27, a process which has been, therefore, largely funded by the employer. Moreover, talent may not be the only capacity an employee might acquire on the job. Other research has developed a model of financial activities where financial operatives appropriate the key assets of the firm and can threaten to move those assets to a competitor in the same sector (Godechot, 2008). Those assets can be traditional human sector-specific capital such as knowledge and know-how, but we must also include more material assets such as software and databases, as well as social capital such as customer relations or productive teams. In our 2008 paper, we analyse in detail a case of ‘hold-up’. In a 2001 wage renegotiation, the head of a trading room and his deputy were granted 10 and 7 million euros, respectively, by effectively threatening to move their whole teams, and therefore the core of the firm’s financial activity, to a competitor. Although those two individuals might have been very talented, what was at stake in this wage renegotiation was not their initial talent but their on-the-job accumulated social capital that enabled them to expropriate part of the firm’s assets. Thus, the specificity of finance may not be its greater sensitivity to talent (Célérer, 2010), but rather the fact that physical property rights, intellectual property rights such as patents and labour contract devices like non-compete

27Célérer builds a model where finance is a sector more sensitive to talent. Talent is discovered after the first working period. In the model, this talent can either be an initial talent that is revealed or on-the-job acquired talent. Nevertheless, in her argumentation, Célérer favours the first hypothesis.
clauses are much less effective at protecting the firms’ assets against worker appropriation.

Therefore, in such a model, if the accumulation of movable assets allows a financial worker to capture a fraction of financial activity, the growth of the latter leads to a growth in his pay. Even if we cannot totally rule out that their remuneration can be explained in a superstar framework, we can, however, find an explanation for the trend in finance pay without considering that the financial elites are the natural elites of society. Nevertheless, we must also recognize one limit of the model: although it explains the share of the joint value added between financial operatives and firms, it does not give an explanation of the growth of volumes in finance or of the value added captured by this sector.

6. Conclusion

France has experienced a strong increase in inequality over the last 12 years. Half of the increase of the share of the top 0.1% is due to an increase in pay among top finance managers. On the other hand, CEOs and entertainment superstars did not seem to play a major role in the increase in inequality.

The interpretation of this trend is only just beginning. We nevertheless find a striking correlation between the top 100 finance managers’ pay and turnover on the Paris stock market. The relationship between the volume of financial activity and pay may not only be due to a multiplicative effect of volume on initial talent, but also to the fact that workers in finance can appropriate a share of the firm’s assets, assets which have been growing rapidly over the last 12 years.

Although the basic models linking volume of financial activity and pay might be relatively similar, whether they are based on initial talent or on acquired assets, more work is needed in order to separate the contribution of these two factors. This research programme has an obvious policy implication. With the 2008 financial crisis, some social analysts pleaded in favour of a tax on financial wages, and the UK and France have experimented with this tax for a limited time. In this debate, taxing talent or taxing rents do not have the same political significance.

It should also be noted that the taxation of finance workers and the taxation of high incomes has received contradictory attention in the public debate. France, during the last decade, as in many developed countries, has been lowering the tax rates for the highest incomes, after some consideration of the positive effects of those elites on overall activity. At the same time, CEOs during the whole decade, finance workers after 2007 and sportspeople after the 2010 World Cup defeat, have been widely criticized. Both the meritocratic character of their pay and the usefulness of their economic role have been subject to
debate. It should be noted that these categories are not marginal among top wages in France. In the top 0.01% of wages for 2007, we find nearly 40% of finance workers, 20% of CEOs and 10% of sportspeople. Taxing this fractile of salary more would be another way (perhaps more easily achieved than a sectorial tax) to redistribute those salaries, which more and more citizens consider as rents.

Supplementary material
Supplementary material is available at SOCECO online.

References


