

Economic Policy and Income Distribution in France since the 1970s

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April 21, 2015

There is (...) [a] fundamental inference from our argument which has a bearing on the future of inequalities of wealth; namely, our theory of the rate of interest.
John Maynard Keynes (1936 [41], p. 374-375)

1 Introduction

Over the past four decades there have been important changes in the global financial configuration, which in turn had dire consequences for the real side of the economy. Output growth rates and standards of living have overall deteriorated, at the same time that the unemployment rate soared despite the celebrated achievement of price stability. During the same period interest rates, exchange rates, labor markets and capital accounts were liberalized worldwide¹. This liberalization process might be seen as a success by some (clearly, those who have benefited from it), as a failure by others (those who either lost from it or see it as unfair), or as having provided mixed results. One of the (apparent) successes of such process is that it has no doubt achieved its goal of providing the maximum level of profit for not-so-irrational utility- and profit-maximizers, most of which are oligopolistic multinational financial and non-financial firms. Unfortunately, however, liberalization did not bring about an equivalent maximum of welfare for society as a whole, and in turn widened income and wealth inequalities.

The previous explanation may be interpreted in at least two ways. The first is that, if liberalization did not lead to Pareto optimality (often believed as being the result of all economic agents selfishly pursuing utility- and profit-maximization ends), then it was not the *right* agenda to pursue. Accepting this idea could be interpreted as recognition of the fact that liberalization was not the adequate *aim* for achieving maximal social welfare, though this would not reject the idea that the economic (thus social) interaction of selfish individuals pursuing utility and profit maximization irresistibly leads to the most desired aggregate outcome of maximal welfare system-wide. Yet a second interpretation would be that neither liberalization was successful at providing the maximum welfare for all (in any case, the outcome was the opposite) nor is the aggregate confluence of selfish individuals capable of bringing about the maximum level of economic well-being for all.

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¹With the important exception of major economic powers like China, Russia and India, that have gone through a rather moderate (or slow motion) process of liberalization. For the Chinese case see Elliot and Yan (2013 [15]), for the case of India, see IMF ([19]) and for the Russian case see IMF (2014 [20]).

Now, sticking to the second interpretation and focusing on the economic arguments rather than on the philosophical ones, we intend to explain which were the *major* economic policies that supported this liberalization process in France, as well as their direct and indirect influences on the real side of the French economy. Our explanation (that is, the current thesis) is made up of two parts divided in six chapters.

Our analysis can be roughly summarized as follows. Following the imposition of the Washington Consensus in 1971 (the so-called Nixon shock²), exchange rates were allowed to float. Since this implied a depreciation of the dollar, and given that the profits of oil exporting countries (most of them members of the OPEC³) were denominated in dollars, this is likely to have created discomfort for these member countries⁴. As a consequence, two major oil shocks (the Arab oil embargo in 1973 and the outbreak of the Iranian Revolution in 1979) took place. Up to then, the major economic problem had been mainly the prevalence of high inflation rates virtually in every economy in the Western world (but more so in oil-importing countries), directly the consequence of high costs of production (clearly affected by the cost of transportation, in turn influenced by the oil shock, although this was also aided by the inflationary stance the economic authorities were following).

The policy response against this world-wide inflation problem came in 1979 from the then newly elected Federal Reserve chairman Paul Volcker, who decided to raise interest rates in order to tame prices⁵. With the sudden and lasting increase in interest rates in the United States, other central banks (mainly from other industrialized nations, which clearly had close financial ties with the U.S.) followed suit, possibly in order to avoid a capital flight. Now, focusing particularly in France, with the interest rates climbing, investment was strongly curtailed, unemployment soared, inflation and production fell, but perhaps most importantly, firms' demand for credit was severely reduced, which gave the signal for the whole process to start.

With the reduction in the demand for credit by firms, banks reduced their then sky-high interest rates charged on households in order to stay in business⁶. With households issuing massive amounts of debt, interest and mortgage payments increased drastically. Thus, the joint effect of wage compression and high unemployment, negatively weighing on the income side, and of interest and mortgage payments strongly pushing up the expenditure side, made the financing capacity and disposable income of French households deteriorate. As a consequence, two main outcomes resulted from this. On the one hand, since a large part of the income of

²That is, when Nixon announced the decision to stop the convertibility of gold to dollars. On this topic, see the first chapter of Graetz (2011 [27]).

³Organization of the Petroleum Exporting Countries, created in 1960 in Baghdad. According to the official website "OPEC's objective is to co-ordinate and unify petroleum policies among Member Countries, in order to secure fair and stable prices for petroleum producers; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the industry.", see http://www.opec.org/opec_web/en/about_us/24.htm.

⁴By the way, it must be remembered that the oil revenues of these countries goes directly to the government (since oil companies are state-owned) and that this had negative consequences not only for oil tycoons, but also for the welfare state of OPEC citizens. Note also that, as Ghosh (2013 [18], p. 148) points out "most late industrializing countries created strongly regulated and even predominantly state-controlled financial markets aimed at mobilizing savings and using the intermediary function of these markets to influence the size and structure of investment". Therefore, the mere fact that these oil companies are run by the government should not be seen as a market imperfection, but rather as a natural consequence of "late industrialization".

⁵It must be noted in passing that former chairman William Miller had stubbornly refused to raise interest rates, ending abruptly his one year tenure at the head of the Fed, mainly due to his failure at taming inflation.

⁶An alternative, though not contradictory, theory is that lenders also shifted their supply of credit to other parts of the world, i.e. to countries that would later on experience balance of payments imbalances (other European countries, Latin America and Asia mainly).

those left on the workforce (whose numbers were in turn proportionately less than during the *Trente Glorieuses*) was destined to honor debt, and given that several others were left out of the labor market, aggregate demand was severely reduced. On the other hand, since credit was then cheaper for households, they were encouraged to invest in real estate during the first half of the eighties, which at the same time made home prices increase importantly by the end of the decade, and once again from 2001 to 2007⁷.

Meanwhile, as mentioned above, the demand for credit by firms fell. As a consequence, and according to trade-off theory in finance (see below), a large part of these firms shifted their policy to issuing more equity than debt obligations in order to meet investment needs. Since selling equity requires buyers, bull markets were largely encouraged. This in turn created three major stock price bubbles: the first from 1982 to 1987, the second one throughout the second half of the nineties, and the third from 2003 to 2007. Thus, instability in the stock and real estate markets, coupled with the fall in demand, explain a large part of the volatile nature of private investment in France since the early eighties, with the main driving factor being movements in interest rates⁸.

2 Economic policy in France since the late seventies

2.1 From the collapse of the Bretton Woods system to the Volcker shock

Perhaps one of the main events that illustrates the shift in the policy goals of economic authorities around the world (from maximum employment to minimum inflation) dates back to the collapse of the Bretton Woods system. Under such system -from 1945 to 1971- at a time when the dollar was already the dominant currency (see Eichengreen and Flandreau, 2009 [14]), central banks around the world accumulated reserves denominated in dollars⁹ in order to defend their currency parities in case of need, with the dollar being imperfectly tied to gold, and all currencies in turn tied to the dollar. This particular exchange rate regime is what Gandolfo (2002 [22], chapter 3) defined as a *limping gold exchange standard*, given that the gold content of the dollar may at some point not correspond to its actual value (thus the term *limping*). This *sui generis* system of fixed exchange rates created an atmosphere of discomfort in certain circles that saw intervention¹⁰ with suspicion. Needless to say, according to market fundamentalists

⁷Clearly, these real estate ups and downs were not nearly as bad as in several English-speaking countries or Spain. For an international comparative of housing bubbles see Girouard, Kennedy and André, (2006 [23]). However, as will be seen, these developments in the housing market have been (along with other problems) at the heart of the current crisis in France. It must be noted in passing that, rather than attaching too much weight to a single major event (i.e. the housing bubble) as the cause of the strong degradation in living standards for workers and profitability for firms, we give a much more important weight to long-term (clearly unsustainable and possibly also unanticipated) processes that took place since 1971 in explaining economic trends. Paraphrasing Shiller (2000, [66], p. 17): "Rome wasn't built in a day, nor was it destroyed by one sudden bolt of bad fortune".

⁸The link between investment and interest rates is hardly new. What is new in our analysis, or so we think, is that our study of the French economy provides a rationale for understanding interest rates and how these have a strong influence above all other policy variables, as well as in what direction these should be kept (of course, down, as Keynes suggested).

⁹Part of these reserves took the form of what are now known as Special Drawing Rights which were "created by the IMF in 1969 to supplement the existing official reserves of member countries" (see <http://www.imf.org/external/about/sdr.htm>).

¹⁰For instance, when central banks buy their own currency in order to keep the exchange rate at a particular level, they intervene. At the same time, of course, they impede the 'natural' working of markets in setting prices through supply and demand.

intervention is one of the major enemies of free markets, and free markets are (or should be, following this logic) the ultimate goal pursued by economic policymakers¹¹.

There is little to no doubt that a financial system based on fixed exchange rates is not perfect¹². However, this line of thought has led public opinion (usually not very well informed) and several policymakers to pursue foreign policy in the extreme opposite sense¹³. For instance, in an article entitled 'The end of the Bretton Woods System (1972-81)' the IMF mentions that "[b]y the early 1960s, the U.S. dollar's fixed value against gold, under the Bretton Woods system of fixed exchange rates, was seen as overvalued. A sizable increase in domestic spending on President Lyndon Johnson's Great Society programs and a rise in military spending caused by the Vietnam War gradually worsened the overvaluation of the dollar" (see <http://www.imf.org/external/about/histend.htm>).

Another example of the official perception towards the Bretton Woods system is an article by Sandra Kollen Ghizoni from the Federal Reserve of Atlanta¹⁴, which says that "[f]rom 1962 until the closing of the US gold window in August 1971, the Federal Reserve relied on 'currency swaps' as its key mechanism for temporarily defending the US gold stock. In March 1962, the Federal Reserve established its first swap line with the Bank of France and by the end of that year lines had been set up with nine central banks (Austria, Belgium, England, France, Germany, Italy, the Netherlands, Switzerland, and Canada). Altogether, the lines provided up to \$900 million equivalent in foreign exchange. What started as a small, short-term credit facility grew to be a large, intermediate-term facility until the US gold window closed in August 1971. The growth and need for the swap lines signaled that they were not just a temporary fix, but a *sign of a fundamental problem in the monetary system*" (our italics).

During the Bretton Woods years, for a central bank to guarantee stability in the financial system it had to buy or sell its own currency in order to respect the established exchange rate, which in turn was tied to gold, whose price per ounce was fixed at 35 USD. If a currency was being undervalued (for instance, due to lack of demand for financial assets denominated in that currency), then the central bank would have to buy its own currency which otherwise nobody else would buy. In the extreme opposite case, when a currency was being overvalued (for instance, due to an excess demand for financial assets denominated in that currency) then the central bank would have to sell its own currency in order to keep the exchange rate stable. This particular form of intervention required a full set of side instruments, which included interest rates¹⁵, tariffs, quotas, government expenditure, seigniorage, and whatever other means the authorities could lay their hands on in order to attain currency stability.

A major drawback of this system is that governments may (and often did) choose to make abusive use of protectionist policies (i.e. raising tariffs and quotas) in order to minimize their

¹¹Central to our arguments is the idea that central banks have lost power in steering markets since the liberalization process began, but have somehow gained it back after the crisis (more on this below).

¹²The existence of the EMU guarantees that there is a single currency for member countries. Yet, the euro floats with respect to other currencies.

¹³That is, to achieve exchange rates determined by the market. Under this light, liberalism may be seen as a master plan elaborated intellectually in the 1960s, started in the 1970s, in transition during the 1980s, full-fledged in the 1990s, with turbulence in the early 2000s, and in decadence during the 2010s. The question is now, what is the next step for the 2020s? For a more complete discussion of liberalism, its cause and consequences, see Duménil and Levy (2011 [13]).

¹⁴See the following link: <http://www.federalreservehistory.org/Events/DetailView/33>.

¹⁵Note that we refer to interest rates as being a "side instrument" in the sense that exchange rate stability was the *aim*. However, this does not contradict our claim that the interest rate is the most important policy instrument because its movements are a *tool*, not an *aim*.

imports and/or to boost their exports (potentially achieved also through subsidies), thus gaining what others are losing. This is an example of the so-called beggar-thy-neighbor policies that, as we saw above, were *not* part of public discussion. Perhaps the main reason of the unpopularity of the Bretton Woods system was the overvaluation of the dollar (characteristic of the period), which impinged a relative loss of competitiveness for U.S. producers and exporters vis-à-vis its trading partners, that in turn provoked the worsening of the trade balance¹⁶.

Broadly speaking, the Bretton Woods system (or the world regime of fixed exchange rates) was characterized not only by stability of currency values, but also by relatively high growth rates, low unemployment rates, higher inflation rates, and also by higher leverage ratios (mainly developed economies, and at least compared to today's figures). The last of these observations is based on two factors. On the one hand, given that economic authorities tended to adopt an inflationary stance (deficit spending and low interest rates, for instance) credit might have been the preferred instrument (above equity) for non-financial firms to finance their investment (more on this below). On the other hand, by the end of the fifties Franco Modigliani and Merton Miller (1958 [54]) published one of the most influential papers on the field of corporate finance which (simplified at a maximum) led the authors to conclude that, under a set of assumptions¹⁷, the capital structure (between debt issuing and equity issuing) of firms is irrelevant. Simply put, as Miller himself once put it, M&M states that "if you take money out of your left pocket and put it in your right pocket you are no richer" (see the following link <http://www.economist.com/node/348586>). The influence of this paper is not to be underestimated, for blind belief in its conclusions has wreaked havoc in the world economy.

Indeed, the M&M theorem attracted a good deal of attention, although it certainly did not make its way through without some opposition. During the seventies and eighties at least three strands of literature emerged from the opposition to M&M: trade-off theory (attributed to Kraus and Litzenberger, 1973 [43]), agency costs (Jensen and Meckling, 1976 [37]; Jensen, 1986 [36]) and pecking order theory (Myers, 1983 [55]; Myers and Majluf, 1984 [56]). Other important economists also opposed this irrelevance theorem, among which we can find Hyman Minsky and James Tobin, both of which based their approaches on the work of J. M. Keynes. Minsky's financial instability hypothesis (1977 [52] and 1986 [53]) does not deal directly with the capital structure of firms, although it does address key issues concerning both debt and equity. James Tobin's seminal 'pitfalls' article (together with William Brainard, 1968 [5]) paved the way of what is known today as modern portfolio theory¹⁸, which in turn inspired the stock-flow literature (upon which we rely heavily) as in the work of Godley and Lavoie (2007 [25]). Both modern portfolio theory (at least the Tobin and Brainard strand) and the stock-flow literature deny any such irrelevance of the capital structure of firms¹⁹.

¹⁶According to former chairman of the Federal Reserve, Arthur Burns, back then there was a widespread belief in American circles "that many U.S. industries can no longer compete against more efficient Japanese firms. There is worry as well that American producers are being victimized by unfair competition from low-wage producers in developing countries and subsidized products of European and other foreign enterprises. Such explanations of the U.S. foreign trade deficit contain an element of truth, but hardly more than that" (see Burns, 1984 [8]). He then goes on to say that "[t]he principal causes of America's recent trade deterioration are to be found elsewhere: in the high value of the dollar in foreign exchange markets, in the faster rebound from recession in the United States than in Western Europe or Japan, and in the unavoidable need of debt-ridden developing countries to practice austerity". The author further adds: "[w]ith the virus of protectionist sentiment spreading, the need for economic statesmanship, especially in the United States and Europe, has become urgent" (op. cit.).

¹⁷Basically, these are complete and perfectly competitive capital markets.

¹⁸Actually, portfolio theory dates all the way back to Harry Markowitz's work during the decade of the fifties.

¹⁹Tobin and Brainard (1977 [68] p. 241) mention that "[i]t is true that the celebrated Modigliani-Miller theorem says that a firm's valuation should be independent of its financial structure (...). But there are important

Going back to the leverage ratios of firms during the Bretton Woods years, the strands of literature described above did not (and still *do not*) agree on what the "best" (or optimal) strategy is for firms to adopt in order to finance their investment. On the one hand (at least from the pure theory perspective), M&M suggested firms should issue the least costly instrument or the one that bears the minimum risk²⁰, thus that yields the maximum value for the firm. In any case, there would not be any difference whatsoever for the value of such firms as long as they raised funds in order to invest, and since debt was by then quite popular (perhaps as much as it is unpopular nowadays), the capital structure of French firms tilted towards such instrument.

On the other hand, the major changes that took place after the end of the Bretton Woods system were in part a natural consequence of the event itself (going from a fixed exchange rate regime to a flexible exchange rate regime), and in part the consequence of the policy actions taken afterwards. A major policy decision was notably the strong rise in interest rates that took place (first in the U.S., then in several other countries including France) at the end of the seventies. One of the main direct consequences of this shock therapy in the banking system was that it forced firms to look for alternative (normally riskier) ways to finance their investment; that is, issuing massive amounts of equity²¹. Again, M&M would predict that the value of the firm would not be affected following this change in their capital structure. As a result, not many economists or policymakers saw this shift as having severe consequences.

In contrast to the standard view that suggests that the main problem of the Bretton Woods system was a gold shortage, Eichengreen and Flandreau (2009 [14], page 28) mention that "if there was a problem to be solved (...), it was *not a problem of gold shortage but rather a problem of gold distribution*. Gold reserves were disproportionately concentrated in the coffers of two central banks: the Federal Reserve and the Bank of France" (our italics). It must be noted that this 'shortage' misconception may have been in part the reflection of misinformation about the ultimate purpose of the Bretton Woods system itself. Note that it could also be a sign of pressure coming from the heads of industry to allow for price competition (of course, with foreign competitors) which, up to then, was not possible in the downward direction²².

The Bretton Woods system had close ties with the progressive ideas being promoted and implemented in the United States since the times of the New Deal, which in turn had an important (direct and indirect) influence in other economies. In fact, fixed exchange rates are some type of way of protecting workers from being affected by sharp fluctuations in the value of their money wage, relative to workers from competing countries, provided there are no tax

reasons for believing that the valuation of a firm's physical assets and their returns cannot be divorced from its financial structure".

²⁰The discussion of risk is undeniably linked to the Capital Asset Pricing Model. See Fama and French (2004 [16]) for a thorough review of this literature.

²¹As an anecdote, just two years after the 1987 stock market crash, artist Arturo di Modica dropped his infamous charging bull in front of the New York Stock Exchange (see <http://chargingbull.com/>), which is currently located two blocks away from the Exchange after being impounded by the police. Clearly, no reference is made to bears as in, for example, the Frankfurt Stock Exchange. Since credit was relatively expensive, we interpret this charging bull story as a sign that the U.S. stock market has encouraged buying equity aggressively, which in turn has been used to finance investment.

²²It must be remembered that labor unions were strong during this period (at least much stronger than nowadays). At the same time, economic authorities did not have the ability to devalue their currency (of course, much less so did the U.S.) by more than a predetermined narrow band set by the IMF. Compared to the post-Bretton Woods system (also referred to as the Washington Consensus), these two factors no doubt weighted heavily on firms' costs.

increases, wage cuts or reductions in social benefits. This idea, although debatable²³, could be a coincidental byproduct of the time rather than an objective in itself. The period 1944-1971 was coupled with an inflationary bias that favored employment. Such *high employment regime* was, however, seen with suspicion by (among others) central bankers, mainly because under such circumstances it is difficult to achieve their seemingly main (or single) goal of taming the inflation rate. On this point see the Per Jacobsson lecture delivered by Arthur Burns in 1979 entitled "The Anguish of Central Banking" [9].

According to our arguments, interest rates are the single most important policy instrument that brought about a series of changes in the global financial system. As a consequence, we believe it is relevant to analyze the ideological motivations of those responsible of deciding the direction of change of interest rates²⁴. In fact, some years after the Per Jacobsson lecture (which by the way gathers central bankers and other financial actors) took place, Burns categorically brought up the Bretton Woods system, this time in an article which can be found in Foreign Affairs. In it, he mentioned that "Europeans naturally prefer a stable dollar to one that oscillates in buying power, and for that matter so do Americans and others. But no one has yet found an *acceptable* method of returning to the kind of stability in exchange rates that existed under the Bretton Woods system. In a world in which capital movements often overshadow trade movements and in which inflation rates of individual countries diverge widely, central bank intervention in foreign exchange markets - a remedy that is *still* popular in some political circles - cannot accomplish anything beyond smoothing out the very short-run fluctuations of exchange rates." (Burns, 1984 [8], our italics).

In this context, and given the growing aversion towards intervention and inflation, Nixon suspended the convertibility of gold into dollars in 1971, thus making the dollar (the currency to which all other currencies were tied) float. This change from fixed to flexible exchange rates, despite the price controls implemented right after, made the dollar devalue mainly vis-à-vis the German mark and Japanese yen. The devaluation made the price of oil, along with that of other commodities, fall. "Oil producing nations lost purchasing power throughout the world as the value of the dollar fell because their oil prices were set in dollars. In September 1971, a month after Nixon's speech, at an OPEC meeting in Beirut, its member states increased oil prices by nearly 9 percent explicitly to compensate for the devaluation of the U.S. currency. And the value of the dollar continued to decline for several more years. By mid-1973, the dollar price of gold had risen to more than \$90 an ounce; by the end of the decade, it exceeded \$450" (Graetz, M. 2011 [27] p. 18).

High (though volatile) demand for oil and low prices certainly left oil producers unhappy, so much that in 1973 OPEC members embargoed the U.S. and other countries. The main cause being, of course, their reduced oil- and dollar-related profits. Thus, the first half of the seventies was the beginning of a new era, which began with the oil shock just mentioned. The main consequence of this oil shortage was the sharp increase in the general price level. At the end of the decade, another oil shock took place, though this time retaliation came apparently for political, rather than economic, reasons (the Iranian Revolution). The direct effects of oil shocks on the global economy are analyzed in Roubini and Sester (2004 [62]). In the remaining of our work, however, we will focus on other (seemingly indirect) effects, such as the shift in

²³Thanks to Julio López for pointing this out.

²⁴As Robert Hetzel put it in his 1998 article *Arthur Burns and Inflation*, ([28] p. 21): "[t]o explain monetary policy, one requires more than an understanding of the views of the Chairman of the FOMC. One must understand the general political and intellectual environment of the time as well". Moreover, according to Hetzel, a monetarist, in order to understand Burns, one must first understand Wesley Clair Mitchell, an institutionalist and founder of the National Bureau of Economic Research.

the capital structure of firms in developed countries (the U.S and Western Europe, mainly) and the corresponding consequences of these.

Policymaking around the globe during the decade of the seventies was thus marked by a strong inflationary bias, both *caused* and *absorbed*. One of the factors that we believe *caused* this bias was the existence of a strong (though by then declining) Welfare State²⁵ that was created during (and preserved after) the New Deal years, and that was reinforced after WWII, which in turn promoted job security and benefits. As a consequence, unions were relatively strong, so that workers were able to appeal against wage, employment and social benefits cuts. Important *absorbed* factors include the oil shocks²⁶, which worsened the inflationary bias significantly, so much that they overly dwarfed previous problems (i.e. those already existing in the labor market, just mentioned on the *causes*).

The "paradigm shift", materialized in the collapse of the Bretton Woods System imposed (or rather *replaced*) by the so-called Washington Consensus, came along with a set of dire consequences worldwide. The first of these were the oil shocks briefly described above. Past the second one of these, the then newly-elected chairman of the Federal Reserve Paul Volcker (who, like Milton Friedman and Alan Greenspan, was deeply influenced by Arthur Burns) raised the federal funds rate by three to four times its 1977 level (around 4% back then²⁷). In our view, it is this decision (the strong rise in interest rates) which led to a full reconfiguration of the financial system in which we live today. Other policies (like liberalizing current and capital accounts, austerity measures and the like) are thus seen here as being complementary.

In the remaining of our work, we will focus on key macroeconomic fundamentals for France past the Volcker shock. In the next part we analyze the direct effects of high (then rapidly falling) interest rates for households in the first half of the eighties. Then, in the following part, we turn to analyze the consequences for non-financial firms and, as a consequence, production and employment.

2.2 The effect of high, but falling, interest rates for French households

Following the so-called Volcker shock, and given that goods and financial markets around the globe were already on their way to becoming more and more integrated, *Banque de France* and other central banks raised their interest rates as well. This decision was the only reasonable choice to make because, had they not followed lead their economies would have suffered a pronounced capital flight towards the most profitable financial market which at the moment had the highest interest rate²⁸ (i.e. the U.S.).

By raising interest rates, the Fed and the other central banks around the world created a new economic environment in which the working class would have to pay for previous policy

²⁵By 1979 Paul Samuelson would even say that "[t]oday's inflation is chronic. Its roots are deep in the nature of the welfare state." (Samuelson, 1979 [63] p. 972).

²⁶In our opinion, these were rather caused by irresponsible decision-making, and the bill, of course, was paid by the working class (worsening of their income and wealth) and developing countries (balance of payments crises).

²⁷See Goodfriend and King (2004 [26]) for a monetarist explanation of the "success" of this policy.

²⁸This idea can also be found in Burns (1984 [8]), who mentions: "first, high American interest rates are damaging European economies by attracting to the United States funds that otherwise would be directed to capital investment at home. Second, European interest rates are also higher than they would be without the outflow of capital to the United States".

mistakes²⁹. The oil shocks, which were more responsible than unions in generating the strong inflationary atmosphere that prevailed by the end of the seventies, were thus palliated by means of a combination of strong devaluations, wage restraint (see Boyer, 1992 [4]), high unemployment rates and the loss of progressive taxation as a tool to fight income and wealth inequality (see Piketty 2003 [59] for the French case, and Piketty and Saez, 2003 [60] for the case of the United States). However, the anti-inflationary stance taken by *Banque de France* (further reinforced by pressures coming from Germany and the European Economic Community) was met with resistance from the socialist government elected in 1981, but the dispute was settled in favor of the monetary and supranational authorities with the *tournant de la rigueur* in 1983 (see Duchaussoy, 2011 [12]).

By the end of the seventies French households did not rely as much on credit as they do today³⁰. In the last quarter of 1982 the share of their stock of credit liabilities out of their disposable income was no more than 20% (blue line in Figure 1) at the same time that the quarterly real interest rate they paid³¹ was 3.5%. In stark contrast, by 2012 indebtedness represented 76% of households' disposable income, whereas the real (apparent) interest rate was only 0.27%, measured on a quarterly basis.

Figure 1 shows that, as real interest rates fell, the proportion of the stock of debt by households out of disposable income increased. From 1980 to 1982 the quarterly interest rate went from 2.15 to 3.5%, period during which the stock of debt out of disposable income went from 15 to 16%. This was partly the result of stable debt levels and falling aggregate income due to the 1980 crisis. From then up to 1989, the countercyclical behavior of both series (which by the way is almost perfectly timed) is more evident. However, from the second quarter of 1989 to the second quarter of 1990 both series increased sharply. This was again the result of falling households' revenues. In 1994, following the recovery from the 1990 recession, the debt-disposable income ratio fell from 53.7 to 52.5%, whereas the real quarterly interest rate was also falling, from 1.4 to 1.2%. This, of course, was due to the opposite effect (that is, rising income, which weighs on the denominator), but it was by no means even close to being enough to offset the already threefold increase of debt's share of disposable income since the beginning of the eighties.

From the first quarter of 1999 to the third quarter of 2000, the quarterly interest rate strongly fell from 1.3 to only 0.2%, again creating an incentive for households to borrow larger sums of money out of their disposable income, which this time went from 59 to 61.7%. Past the crisis, interest rates went up again, and household indebtedness correspondingly fell. This process went on until 2002, when the quarterly interest rate started falling again, at a speed comparable to those observed in 1982 and 1999. From 2004 to 2006 the quarterly interest rate stabilized at 0.24%, but borrowing as share of income kept on increasing dramatically, going from 67.5% in 2004 to 81.4% in 2007, despite the slight increase in the interest rate in the second quarter of 2006. Once the 2007-08 crisis hit, both series have evolved more pro-cyclically,

²⁹As we saw from the quotation in footnote 25, back in the seventies there was the widespread belief that workers had become too demanding. As a consequence *discipline*, following this 'logic', would have to come from the labor market, and eventually also from the government.

³⁰As anticipated above, this strong increase in credit demand by households is not independent of the fall of credit demand by firms. Once private banks realized this, they sought for alternative sources of profit. Moreover, "if new ways of distributing business loans were established, the most dramatic change indeed concern the relationship of banks with 'households'" (Braudel and Labrousse, 1993 [6] p. 1179, our translation).

³¹Interest rates are calculated as "apparent". For instance, the quarterly nominal interest rate paid by households was calculated as the ratio of interest payments disbursed divided by the stock of debt obligations from the previous period. For further details on the construction of the series, see chapter 4.

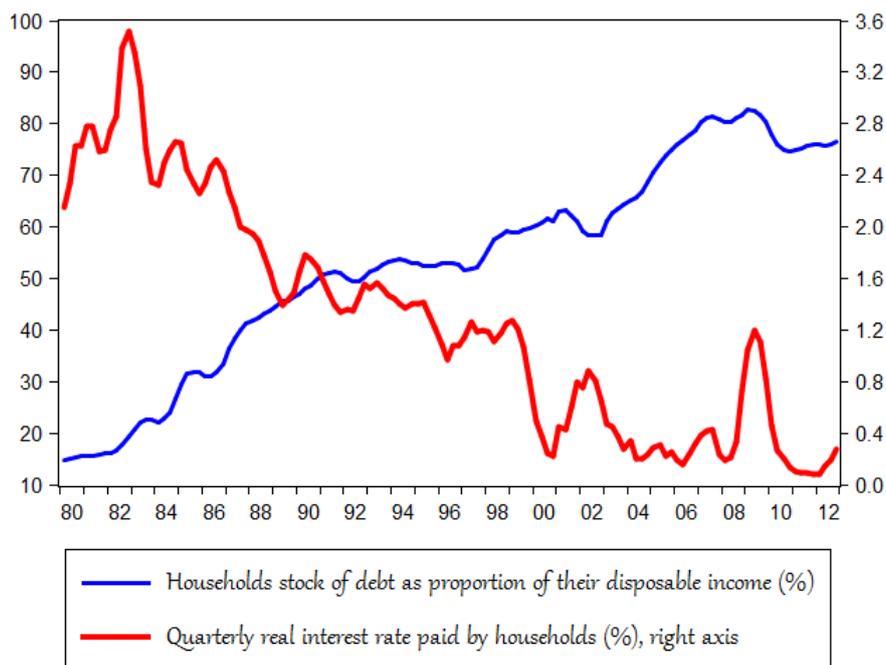


Figure 1: Households’ stock of debt as proportion of their disposable income and quarterly real interest rate paid by households, 1980-2012. Source: author’s calculations based on data by *INSEE* and *Banque de France*.

perhaps due to the fact that households have become less sensitive to reductions in interest rates (i.e. they fell into a liquidity trap after the global financial crisis).

The strong increase in interest rates had two major effects for the economic well-being of French households. The first was already mentioned in the previous section, and is related to the rise in interest payments which, coupled with the restrictive monetary, fiscal and incomes policies, made disposable income fall both in absolute terms (i.e. its growth rate) and in relative terms (i.e. as share of GDP), as is shown in Figure 2. With falling income, rising interest payments and taxes at a time when the unemployment rate was high and with wage growth lagging behind increases in labor productivity³², it is pretty evident that, on the aggregate, French households dedicated larger shares of their paychecks to service debt. This combination (rising debts, unemployment and taxes coupled with falling incomes) grew unbearable for households, and ultimately weighted heavily on domestic demand.

The blue line in Figure 2 shows that the growth rate of disposable income (left scale) fluctuated violently during the decade of the fifties, although it was on average more than 1% quarter after quarter and only reached zero in 1958. From 1950 to 1957, the annual growth rate of output was 4.6%, with inflation imposing an important threat to the economy. In 1958, following the strong devaluation of the franc, the slowdown of the world economy, and with a political crisis unfolding, France knew one of its major economic crises (see Jeanneney, 1992 [35], p. 10-11). From 1958 to 1969 population increased 12.4%, GDP grew 5.5% annually, investment 7.6%

³²According to our database (described in chapter 4) from 1982 to 1986, on average, labor productivity grew faster than real wages paid by non-financial firms: 0.3% higher on a quarterly basis (which is equivalent to 1.2% annually).

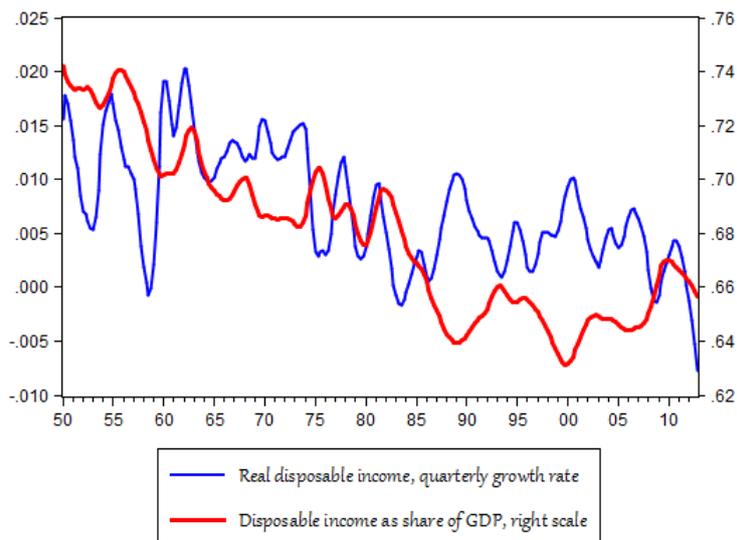


Figure 2: Households' disposable income, 1949-2012. HP filters with $\lambda = 10$. Source: author's calculations based on data from *INSEE*.

and real wages 3.6% (Jeanneney op. cit., p. 12). During this period, disposable income grew at a quarterly average of 1.3% (close to 5% annually). This rhythm would go on until 1974, when the quarterly rate of growth of disposable income began its volatile downward path, until it reached its then historical low of -0.1% in 1983q4. From that period and until the fourth quarter of 2007, it fluctuated at a quarterly average of 0.5%. Besides these unfavorable developments, disposable income fell as a share of GDP (red line in the figure), passing from 75.5% in 1949 to as low as 63.1% in 1999 and, despite the recovery that took place right after (mainly due to an important fall in the denominator of the corresponding ratio), it only reached 67% around 2009.

<i>Period</i>	<i>Wages</i>	<i>Profits</i>	<i>Taxes</i>	<i>Int. rec.</i>	<i>Int. paid</i>	<i>S. ben.</i>	<i>S. contr.</i>	<i>Cons.</i>
1949-1959	61.7	37.9	4.0	2.3	0.7	15.4	16.2	83.1
1960-1969	68.7	32.9	5.3	2.9	0.8	18.8	20.8	81.1
1970-1979	77.4	26.3	6.3	5.7	2.2	21.8	25.9	79.4
1980-1989	81.9	23.0	8.4	8.6	3.9	27.7	33.0	85.2
1990-1999	80.7	22.9	10.6	7.5	3.3	30.2	34.1	85.3
2000-2007	81.9	22.7	13.7	4.0	2.3	30.3	31.7	84.8
2008-2013	81.1	21.5	13.3	3.0	2.2	32.0	31.9	84.1

Table 1: Selected macroeconomic fundamentals for households, average quarterly shares of disposable income, all as %. **Wages** are the sum of *masse salariale*, *cotisations sociales employeurs* and *cotisations imputées*. **Profits** are gross profits of individual entrepreneurs and households. **Taxes** are the sum of *impôts sur le revenu* and *autres impôts courants*. **Int. rec.** are interests received. **Int. paid** are interests paid. **S. ben.** are social benefits, and are the sum of all items denominated *prestations*. **S. contr.** are social contributions, calculated as the sum of all terms denominated *cotisations* (these are paid by workers). **Cons.** stands for personal consumption. **Source:** Author's calculations using data from *INSEE*.

The deterioration in households' revenue was further reinforced by important changes in

the composition of disposable income itself. These can be observed in Table 1³³. The profits of individual entrepreneurs and households has steadily fallen since the late forties, going from 37.9% of disposable income in the first sub-period under analysis (1949q1-1959q4) to as low as 21.5% in the last one (2008q1-2013q1), which is mainly due to the fall in the number of individual entrepreneurs at the same time that the number of salaried workers was on the rise (Bournay and Pionnier, 2007 [2]). Correspondingly, wages increased their share of disposable income from 61.7% during the 1950s to 81.9% in the 1980s, and remained at around that level since then. We interpret these developments as a sign of the degradation of individual entrepreneurship in France since the fifties, and not as a sign of the strength of wages which, as will be seen below, has not been the case.

The fourth column of the table shows the tax rate paid by households, which is calculated as the proportion of tax payments out of disposable income. This indicator escalated from 4% in the late forties and throughout the fifties, to more than three times that level since 2000. This tax increase (in relative terms) took place notwithstanding the fall in income (in absolute terms).

Interest receipts for households (which normally stem from deposits) increased sharply as share of disposable income, going from no less than 3% before the 1970s, to 5.7% in that decade, reaching up to 8.6% in the eighties, thanks to the stark increase in interest rates (described above). Following the fall of the latter instrument, interest received also declined and went back to levels comparable to those prevailing in the 1950s. Interest payments (most of which are used to service debt) follow the same up and down trend. Strikingly, however, these go from representing around 0.8% of disposable income before the seventies, to 2.2 and 3.9% in the 1970s and 1980s respectively, and start falling since then. However, these payments do not go back to less than 1% and stay at more than double that level afterwards. Moreover, the gap between interests receipts and interest payments (both as share of disposable income) has narrowed over time, going from 1.6% in the 1950s to only 0.8% after the global financial crisis.

From 1949 to 2007 social security contributions paid by households out of their gross disposable income was higher than social security benefits received by them, with the gap between the two widening in some periods (1970s, 1980s and 1990s) and narrowing at others (1950s, 1960s and 2000-2007). From 2008 to the first quarter of 2013, however, the sign of the gap was reverted, with benefits exceeding contributions, which is likely to have been caused by the strong activation of the automatic stabilizers following the 2007-08 crisis. That is, the combination of the fall in aggregate income, consumption and government tax receipts coupled with the rise in the number of registrations in *pôle emploi* asking for unemployment benefits contributed to this reversal. Needless to mention, had this latter mechanism not been present, and despite the hostility that austerity pundits show towards this type of public expenditure, aggregate demand and production would have fallen even more after 2007.

A second major consequence of the increase in (and consequent drop of) interest rates for households was the build-up of two housing bubbles³⁴. Now, when dealing with *housing*

³³Note: the data shown in this table do not match those presented by Braudel and Labrousse (1993 [6], p. 1063) for two main reasons. On the one hand, data is revised constantly. On the other, the authors' presentation is somehow different than ours. However, the trends described in their work (up the period they analyzed) are reinforced and prolonged in ours.

³⁴This suggests, of course, that most of the money borrowed was channeled towards the housing market, although it is likely that part of that demand for credit was partly used for consumption purposes. Despite the fact that these bubbles in France were *not as important* as those in several English-speaking countries or Spain does not imply in itself that they were unimportant for France. As we will see, they had no minor consequences.

problems one may naturally tend to believe it is the price of 'housing' (*logements*) itself which lies at the heart of the analysis. However, as can be seen in Figure 3, our series built from the *Comptes de Patrimoine* indicate that it is not the evolution of the price of housing (the red line) itself which should be worrisome; it is rather the price of land (the green line). Indeed, the growth rate of the price index of non-financial assets held by households (blue line) is depends on the evolution of the previous two indicators, as well as on other relevant non-financial assets. Nonetheless, it should be noted that the extreme volatility of land prices have been strongly mirrored in the evolution of the former indicator that contains it.

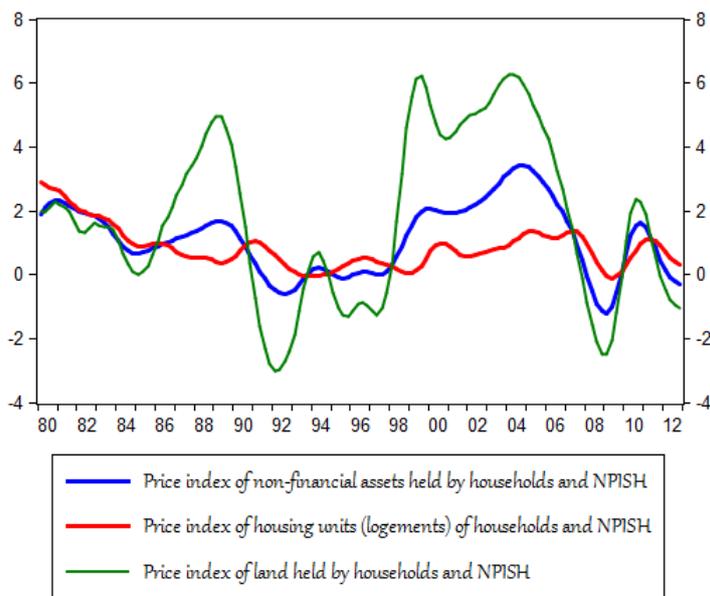


Figure 3: Quarterly growth rate of housing prices, 1980-2012. HP filters with $\lambda = 10$. Source: author's calculations based on data from *INSEE's Comptes de Patrimoine*.

The first bubble took place in the second half of the eighties, and was coupled with a strong and sustained increase in the price of dwellings, which went from a level of 40 in 1985 to 53 in 1991 (with the price index *in level* being 100 in 2005, series not shown). In terms of the figure shown above³⁵, this was equivalent to a strong rise in the quarterly growth rate of the price of non-financial assets that went from 0.7% in the first quarter of 1985, to 1.7% in the second quarter of 1989. The figures for the price of land were 0 and 5% respectively, which clearly indicates that these severe fluctuations had a larger impact on the previous indicator than the price of housing itself, whose growth rate was by then was falling from 1 to 0.4%.

From 1989 to 1998 housing prices fell from its previous level of 53 to 51. However, the second bubble (way more important than the first one) started that year, and lasted until 2008 when the price of non-financial assets suddenly stopped its upward path. By then, nevertheless, it had already reached 120, that is, more than double its 1998 level. As was shown above, during this period household indebtedness soared, both in absolute and relative terms (in level and as percentage of disposable income, respectively). From the first quarter of 1998 to the fourth quarter of 2004 alone, the quarterly growth rate of the price of households' non-financial assets

³⁵Note: the analysis is carried out in terms of the smooth series. Despite the 'lack of realism' this may imply, we want to highlight overall long term trends, which serves as a justification for this.

went from 0.3 to 3.4%³⁶, whereas that of land reached 6.1% in 1999q3 and 6.2% in 2004q3. Both real estate indicators started a steep fall afterwards that lasted until the last quarter of 2008. Perhaps this pronounced and lasting drop in land, housing and non-financial assets' prices is a clear indicator that the crisis (at least on the real estate front) could have been anticipated, softened or even avoided³⁷.

It is reasonable to believe that as interest rates charged to households declined indebtedness and, as a consequence, housing investment increased, thus promoting the creation of the real estate bubbles just described. The presence of bubbles, while they last, are just as good as the aftermath of the bursting of the bubble is bad for homeowners' balance sheets. Or, even if they do not burst, their remaining at high levels (as in the French case) can reduce the demand for dwellings considerably. With land (or, for that purpose, house) prices growing well above their fundamental values, existing proprietors may feel confident that they are becoming richer and may even pay a blind eye to the issue, actually believing that prices 'naturally' go up. Moreover, several homeowners rent their property and as the value of the former rises, even in the absence of a rise in demand for rented property, market ideology leads them to raise rents, further worsening renters' disposable income and, in this way, aggregate demand. New home owners, on the other hand, are irresistibly tempted to get a loan (which anyways is cheap) perhaps because the future value of their property-to-be will more than offset the current cost of indebtedness³⁸. Households' stock of assets goes up rapidly during the expansionary phase of property prices, and so does debt and other (related or unrelated) expenditures, potentially improving (or at least not worsening) their net worth. When the trend reverts, households' stock of assets declines but their debt liabilities do not. In fact, they may even increase if debts remain unpaid and sanctions arise. Clearly, in the absence of a bailout (normally the responsibility of the government) the deterioration in households' wealth becomes critical. This is an example of how national wealth can be quickly lost.

Under this logic, it was the reduction in interest rates paid by households (which are ultimately set and regulated, if at all, by the central bank) that provided green light to the housing industry for the build-up of the bubbles. As we saw above, these were not the result of increases in the price of housing itself, but of the rise in the price of land (a non-produced non-financial asset). The discrepancy between market values and fundamental (replacement or simply non-market) values, created an incentive for indebted households to dig their own hole. The natural question that arises is: how come the authorities ignored these instability problems? Of course, this question assumes that the authorities were aware of these evolutions, and they were!

A document published by Bouveret, Costes and Simon (2010 [3]) entitled *Trends in the French housing market* (prepared under the authority of the Treasury, though without the Ministry assuming responsibility for the authors' opinions) mentions the following (p. 4 of the English version):

³⁶These growth rates may appear insignificant. However, it must be noted that these are presented on a quarterly basis. As a rough representation of the annual figures, one must multiply these by four to get an idea how large these growth rates can be.

³⁷Somehow anticipating the build-up and corresponding burst of housing bubbles, the previous trends were studied for Norway by Jacobsen and Naug (2004 [33]) and for the U.S. by McCarthy and Peach (2004 [50]), with the latter paying close attention to land prices.

³⁸This optimistic perception can in turn be fueled by the expectation that inflation will be contained, thus that with stable prices their property will be more valuable in the future than at the time they signed the contract. However, what happens with homes happens also with debts, so that indebted households who expect to gain from price stability actually loose from it.

During the period of sharply rising home prices, public policies sought to contain rising prices by stimulating supply; these policies took the form of tax breaks (a series of tax incentives for buy-to-let investment since 1986, and subsidized loans to finance low-rental housing), or legislative and regulatory measures, e.g., the law on urban solidarity and renewal (the "SRU [*solidarité au renouvellement urbain*³⁹, LR] law") providing for the construction of low-rental housing, and housing-to-office floorage ratios.

During the period, however, the policies addressing the property sector also had social objectives that made them **procyclical**. The **measures** for first-time buyers and measures intended to correct a market imperfection (solvent, modest-income households excluded from the market because unable to make the appropriate down payment) thus stimulated demand and activity during a period of sharply rising prices (authors' emphasis in the original).

So, an attempt to answer the question asked a few paragraphs above would be: the French authorities allowed the [second] bubble build-up because there were other forces that were (and still are) found elsewhere that made them overlook the problem. These problems were related to the link between firms and banks through their balance sheets, and their influence on that of households. This takes us back to the starting point, the collapse of the Bretton Woods system and the late seventies policy response implemented by the Federal Reserve and other central banks around the world. When interest rates sharply increased in 1979, this included the one paid by firms on their loans. As French firms perceived the rise in the cost of debt, many of them reduced their demand for this instrument and, as they did, they turned to the stock market to finance their investment. By doing so, banks sought alternative ways to lend. Perhaps one of these alternatives was lending abroad, which may have been one of the main causes of the 'capital flight' episodes that gained strength from the mid-eighties on in Europe, Latin America and Asia (in no particular order). Another alternative was lending to households, the effects of which we have already seen.

2.3 The effect of rising interest rates for French firms and the liquidity trap

While excessive indebtedness proved dangerous for households, it is still a need. Indeed, without it several households would not be able to buy a house or invest in small or medium sized businesses. In the absence of bubbles, and under fair and stable conditions, credit should not be seen as a bad thing. Nevertheless, when dealing with a large structure that needs financing in order to hire workers (generate employment) and buy intermediate goods (investment demand) in order to produce goods and services, credit may prove vital. Broadly speaking, two other sources of funding (other than credit) include own funds (that is, issuing equity) and profits. The combination of these three (which may ultimately boil down to the first two only) has been both a matter of controversy and misunderstandings. After all, as Carl Kester and Timothy Luehrman (1992 [40] p. 31) put it "managers typically estimate the cost of capital for a particular project by first determining how much debt the project can support and, by implication, how much equity capital must be put at risk".

During the 1960s French non-financial firms gradually became highly leveraged. That is, their issuance of debt obligations was growing importantly, relative to their issuance of equity. According to data from Braudel and Labrousse (1993 [6] p. 1171) in 1961, their share of debt

³⁹Solidarity urban renewal.

out of total liabilities⁴⁰ (in stock form) was 55.1%, whereas by 1969 it had reached 64%. Naturally, this means that the share of own funds out of liabilities correspondingly fell from 44.9 to 36%. There are several potential drawbacks for firms that accumulate large amounts of debt.

The first and most obvious of these drawbacks is that, the larger the stock of debt (compared, for instance, to the stock of non-financial assets) the higher the risk of default. The second is that the incumbent firm's sensitiveness to changes in interest rates may increase, and with it their incentive to lobby for lax monetary policy. A third disadvantage is that, in their attempt to raise larger amounts of funds through debt, firms may be subject to conditions imposed by banks (i.e. credit rationing⁴¹) so that the latter reduce default risk at a minimum⁴². As a consequence of the latter, a fourth drawback emerges, and is directly related to risk perception and the nature of investment. When a firm is highly leveraged, the constraints imposed by banks often make firms engage into less risky (thus, if successful, less profitable) investment projects than they otherwise would. The natural counterpart of this is that, when firms rely much less on credit than on their own funds, they may invest in riskier (though potentially more profitable) projects.

Long and Malitz (1985 [45]) studied whether the type of investment opportunities determined financial leverage. Their theoretical model posits that the value of equity may increase if a risky investment is chosen. This is so because bankers may not want to finance risky projects and because they would bear most of the loss in case the project (which in any case would be costly to monitor) is not successful. The authors provide cross sectional evidence for 68 U.S. portfolios between 1978 and 1980 to their model, which takes different measures of leverage as the dependent variable and some potential explanatory variables; such as advertising expenditures and R&D expenditures as proxies for risky investments⁴³, as well as capital expenditures as a proxy for productive capital. They found a statistically significant negative relationship between the first two and leverage (which suggests that risky investments are not financed by debt) and a positive one between capital expenditure and leverage, which indicates that *productive investment* is closely related to indebtedness.

If Long and Malitz's evidence is well founded, and if their results are not particular of time and space, then their conclusion concerning the advantages of debt implies that (in the aggregate) French firms during the 1960s were not only bearing important default and related risks, but also that they were likely to have invested in less risky and productive projects. This would also mean that, since capital expenditure (which normally is labor-intensive) was preferred above advertising and R&D expenditures (which tend to be labor-saving), then labor demand was likewise higher than under an alternative hypothetical scenario in which firms would not have been highly leveraged.

Unfortunately, we were unable to find information about the capital structure of French non-financial firms during most of the 1970s. A hunch would be that during this period debt represented at least more than 50% of their stock of liabilities. Fortunately, however, *Banque*

⁴⁰Note, for the remaining of our work we will refer to this share as our measure of the capital structure of non-financial firms.

⁴¹An obliged reference on this subject is Jaffe and Stiglitz (1990 [34]).

⁴²Analogous to these conditions are, at an international level, the structural reforms imposed by the IMF on debtor (more often developing) countries. Crises no doubt have had major consequences on the financial and real sectors of affected and neighboring economies, but the imposition of these reforms (deregulation in financial markets, privatization, and restrictive monetary and fiscal policies, mainly) have not always been in the right direction, and in some extreme cases (for instance Latin America) they have even proven disastrous.

⁴³It must be noted that these types of investment tend to be less labor-intensive. More on this below.

de France provides data on the financial accounts for all sectors in the economy since 1978. Based on these, we were able to see that the capital structure of non-financial firms shifted in favor of own funds starting in the mid-eighties. The red line in Figure 4 shows the share of the stock of debt out of total liabilities. This share was quite important in 1982 (68%), but in that period it began falling rapidly, reaching as low as 14% in 1999 and remaining at 20% on average from that period on, until 2012.

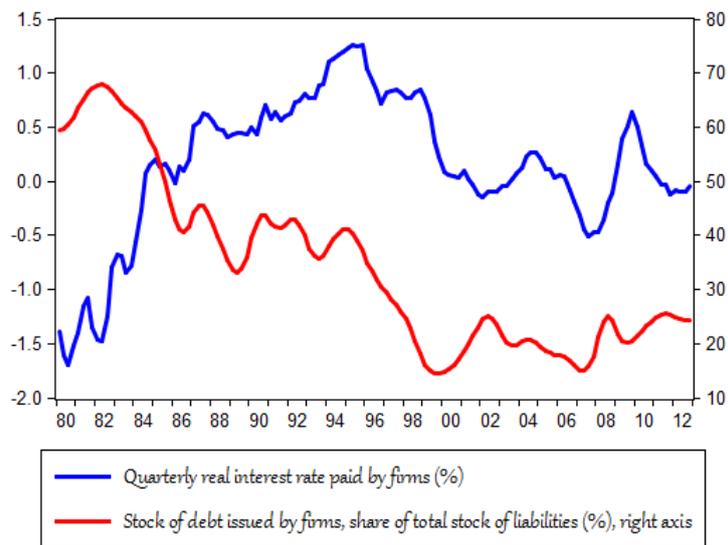


Figure 4: Firms' real quarterly interest rate paid by firms and stock of debt as proportion of their liabilities, 1980-2012. Source: author's calculations based on data by *INSEE* and *Banque de France*.

The figure also shows the long term evolution of the quarterly real interest rate paid by firms (blue line). This indicator was in negative territory until the second quarter of 1984, period after which it increased rapidly, reaching 1.26%⁴⁴ by the end of 1995, and falling sharply afterwards until the 2007-08 crisis aftermath made it go up again. One may naturally ask, if real interest rates were negative in the first half of the 1980s, why did firms shift their preference in favor of own funds and away from indebtedness? Our interpretation of this phenomenon goes like this: since managers and consulting firms (the main decision-makers at the corporate level) were well aware of the central bank's commitment to fight inflation, they expected nominal interest rates to rise and the inflation rate to fall. Both factors may have contributed to the belief that credit would become more expensive. On the one hand because the nominal cost of contracting loans was rising. On the other hand, because with lower inflation the real value of debt related payments would turn out to be higher at maturity than at the time when they were contracted⁴⁵.

Figure 5 shows the nominal interest rate and the inflation rate on a quarterly basis, the difference of which make up the real interest rate shown previously. From 1979 to 1982, both inflation and the nominal interest rate went up. The latter increased as a policy response to

⁴⁴Roughly, this would be tantamount to a yearly real interest rate of 5%.

⁴⁵This argument can also be found in Krugman (2011 [44]) where the author mentions that "a fall in wages, leading to a fall in the general price level, worsens the real burden of debt and actually has a contractionary effect on the economy". Naturally, without a strong fall in the demand for credit, banks would benefit from a contractionary monetary policy, as much as firms would benefit from a loose monetary policy, as long as inflation and indebtedness do not reach unusually high levels.

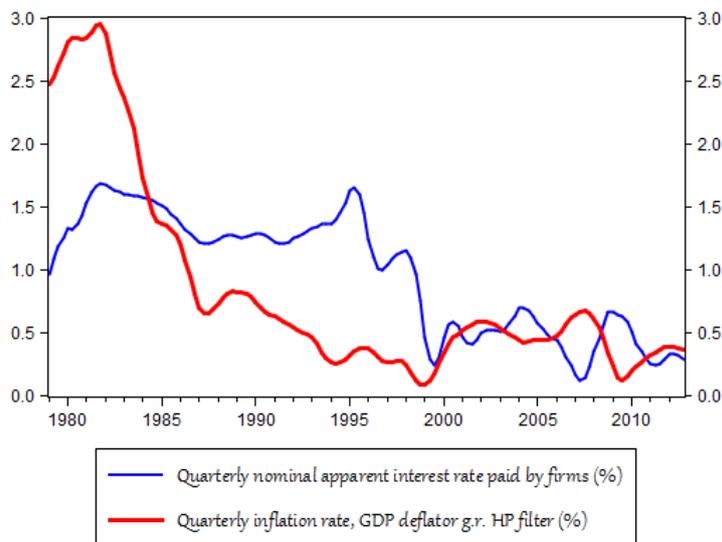


Figure 5: Quarterly nominal interest rate paid by firms (apparent) and quarterly inflation rate (HP filter with $\lambda = 10$), 1979-2012. Source: author's calculations based on data by *INSEE* and *Banque de France*.

the rise in the former⁴⁶. The quarterly inflation rate went from 2.5% in the first quarter of 1979 to 2.9% in the last quarter of 1981, at the same time that the quarterly interest rate went from roughly 1 to 1.7%. While this was happening, non-financial firms increased their demand for credit above their own funds, which went from 60% in 1979 to 68% in 1982. *Banque de France's* resolution to take control over the price level was so effective that from that year on inflation, employment and credit demand fell sharply. The stark rise in interest rates brought about this new financial configuration, which in turn affected the labor market, the structure of the productive sector, the strong welfare state achieved during the Bretton Woods years, banking practices, economic policy goals, the status quo of the economics profession and even politics⁴⁷.

In our view, the strong shift in the capital structure of firms was the result of a combination of (1) high nominal interest rates (which affect the current cost of credit), (2) rapidly falling inflation rates (which increase the burden of debt at maturity), and (3) expectations concerning interest and inflation rates (which affect the behavior of financial actors when it comes to medium- to long-term planning). Note that we are giving importance to expectations but we are not attaching too much weight to their assumed underlying nature, like the rational expectations literature does. Instead, we interpret these in terms of Keynes' (1936 [41], chapter 12) *state of long term expectations*⁴⁸. Keynes' analysis (at least in that part of his vast contribution to the economics field) is carried out in terms of the psychology of financial investors in the stock market and animal spirits. Two major episodes concerning two major financial actors

⁴⁶See the 1983 *compte rendu* from *Banque de France* in the following link <http://gallica.bnf.fr/ark:/12148/bpt6k6495802s/texteBrut>.

⁴⁷Labor unions around the world lost bargaining power, riskier and less labor-intensive investments were favored (i.e. advertising and R&D), austerity measures were preferred above employee-friendly policies, banks favored households as clients, policy goals went from maximum employment to minimum inflation, economics would become even more intertwined with public opinion and politicians, and so-called socialist or labor political parties which since that period preach the opposite of what they actually do (i.e. promote employment).

⁴⁸In this sense, we consider ourselves *Chapter 12ers* (see Krugman, 2011 [44]).

may be useful in illustrating our arguments.

The first concerns Michael Milken (one of the men who inspired Oliver Stone's main character, Gordon Gekko, in his 1987 film *Wall Street*) who in 1977, while working at Drexel (an important financial firm back then), contributed largely to the creation of what is nowadays known as the junk-bond market. Junk-bonds are characterized by high-yields and are, as a consequence, considered speculative. Simply put, what Drexel did under Milken's influence was what other financial firms were unwilling to do: help underrated (thus, seemingly unprofitable) companies get funding (if only at a higher interest rate, which is why they were speculative). These firms' *underratedness* are decided by rating agencies under a set of standard criteria that are by no means infallible. In 1989, Milken was accused of fraud and one year later he would start serving a 10 year sentence that eventually was reduced to two⁴⁹.

Now, for the purpose of our exposition, what we want to stress from this case is the fact that rating agencies often act in a way resembling newspaper competitions of which Keynes spoke in chapter 12 of his *General Theory*. In these competitions, actors "have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole" (Keynes, 1936 [41] p. 156). Furthermore, this practice is so standard that we have even "reached the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be" (op cit). Translating to Milken's case, what this implies is that average opinion (i.e. that of rating agencies) often overlook firms' productive potential, thus restricting access to credit for them. Junk-bond dealers, be they honest or otherwise, fill in this financing gap.

The second episode concerns George Soros who, like Milken⁵⁰, is a philanthropist and finance researcher. In 1992 Soros literally 'broke' the Bank of England⁵¹ by short-selling financial instruments denominated in sterling. In this episode, the BoE's commitment to adhere to the Exchange Rate Mechanism (the arrangements previous to the introduction of the euro) forced the monetary authorities to devalue the pound. Speculators like Soros (clearly, he is the most important one) bought massive amounts of sterling when this currency became slightly appreciated, and sold it when it depreciated. The conviction that the value of the British currency would eventually fall was key to Soros' success in his becoming one of the wealthiest (and most hated) individuals in the world.

What stands out from this second example is that speculators can make large profits (even at the expense of central banks and whole nations) simply because this is allowed to happen. Again, on this point Keynes mentions that "[t]he spectacle of modern investment markets has sometimes moved me towards the conclusion that to make the purchase of an investment permanent and indissoluble (...). For this would force the investor to direct his mind to the long-term prospects and those only" (Keynes, 1936 [41] p. 160). Eventually, what Soros taught the BoE (which by then it should have already known) was that, as a monetary authority, you cannot expect to make credible commitments without expecting a whiplash of speculation (when it is allowed) in return.

⁴⁹The full story can be found in an article entitled "Stars of the junkyard" in The Economist <http://www.economist.com/node/17306419>.

⁵⁰Interestingly, in 2009 Milken published a post on The Wall Street Journal entitled "Why Capital Structure Matters", where he sets forth several arguments which provide support for our own in the present work. See the following link <http://www.wsj.com/articles/SB124027187331937083>.

⁵¹See <http://www.investopedia.com/ask/answers/08/george-soros-bank-of-england.asp>.

Going back to the discussion about the capital structure of French firms, it should be clear that *mass psychology* (i.e. public opinion) and *herd behavior* (i.e. speculation) play an important role in financial markets⁵². Coincidentally, from the moment when *Banque de France* achieved its goal in bringing down prices (1982) firms began a furious de-leveraging race that left private banks with no other choice but to look for alternative sources of profit. A major alternative source, together with its consequences, was discussed in the previous part; household's credit.

While excessive debt is certainly a bad thing, excessive (and even more extreme) reliance on own funds has proven even worse. Before 1982, French firms invested at the pace allowed by the evolution of interest and inflation rates. When the interest rate declined, investment tended to increase. When inflation increased, and this increase was likely to last (at least until maturity of the corresponding debt was to be reached) firms had an incentive to borrow, thus to invest. In contrast, banks normally have an incentive to lend with high interest rates and low inflation rates. After 1982, French firms became more sensitive to changes in the *CAC 40*⁵³ index than to interest rates. This is so because since then they rely more on equity (or what is misleadingly called "stock") in order to finance their investment. Several implications arise from the discussion up to here. Let us stop for a moment and take stock of the points raised.

In a nutshell, the effects of rising real interest rates at the end of the seventies for French firms were (in no particular order of importance) the following. First, given that credit became more expensive firms relied more on equity than on debt, and ever since the corresponding shift took place productive investment became more sensitive to the evolution of stock market fundamentals. Second, as this was happening business executives became more estranged from central bank command (which is normally exercised through the interest rate) and felt the irresistible need to lobby for deregulation in financial markets. Third, as a consequence of the former point, the French economy was subject to what Keynes called a liquidity trap. Fourth, by demanding less credit, lenders (i.e. banks) had a strong urge in becoming *market makers* and find customers from which there were formerly no potential gains (i.e. households and developing economies), creating new sources of instability. Fifth, since firms are no longer subject to the pressure of banks to invest in safer-though-less-profitable projects, investment tends to take place in riskier sectors, thus promoting even more risk-taking (i.e. issuing more equities at higher prices). Sixth, as a consequence of the former point, since riskier investment projects tend to be less labor-intensive than less-risky projects, labor demand diminished, thus aggravating (and even perpetuating) the unemployment problem. Seventh, since the nature of riskier projects tends to be unproductive (for instance, advertising), new creation of wealth tends to be slower than it would otherwise be⁵⁴. Let us now deal with each consequence at the time.

As evidence of the first point raised, Figure 6 shows the ratio of the price of equities issued by firms⁵⁵ and the price of non-financial assets for firms (blue line) together with the annu-

⁵²It must be noted in passing that financial markets (like any other market) have two sides; holders and issuers. Now, despite the obviousness of this sentence, it is worth reminding this to the reader because, even in the academy, often one side or the other is blatantly ignored, whereas it is crucial to study both.

⁵³*CAC 40* stands for *cotation assistée en continu*, and is a benchmark stock market index that represents a weighted measure of the 40 largest firms in the French stock market.

⁵⁴This was coupled with (and in turn worsened by) the *reallocation* of manufacturing towards other less developed countries, which by the way were often the targets of the new allocation of financial flows (i.e. Latin America and Asia).

⁵⁵Note, both indexes were computed from *Banque de France*'s financial accounts, and they follow very closely the evolution of the original series (i.e. *CAC 40* and price of non-financial assets of firms). However, we decided

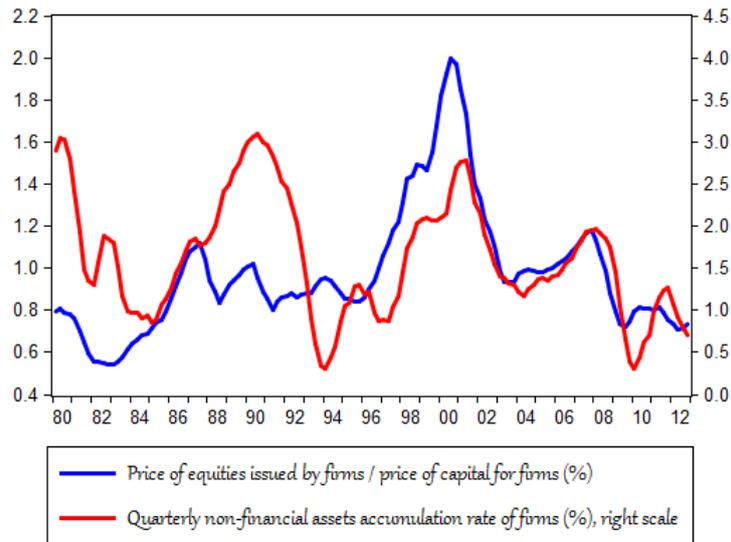


Figure 6: Price of equities issued-price of capital ratio and annualized accumulation rate of firms (seasonally adjusted); 1980-2012. Source: author’s calculations based on data by *INSEE* and *Banque de France*.

alized accumulation rate (red line, right scale). The timing of both series’ ups and downs is impressive, notably from 1985 to 1987 and from 2002 to 2008.

The price of firms’ non-financial assets has followed the evolution of housing prices for households which, as seen above, have in turn been deeply affected by the evolution of land prices. Since firms also own land, the price of their non-financial assets has followed roughly the same long-term trends as those of households⁵⁶. Despite this, the evolution of equity prices has been even more extreme, so much that during the second half of the eighties and from 1997 to 2004, while land prices were on the rise, equity prices increased even more. Except for the period that goes from 1987 to 1997, this series and the physical capital accumulation rate followed the same long term trends, in the sense that they *tended*⁵⁷ to rise and fall at about the same time. We hypothesize that the sense of causality between the price ratio (of equity and capital), simply called relative price henceforth, and the accumulation rate has constantly changed and could even be a matter of confusion.

For instance, the drastic fall of this relative price that took place between 1980 and 1982 was more *likely* to have been *caused* by the fall in investment, whereas the takeoff that went from 1985 to the 1987 stock market crash (given the circumstances of the time, i.e. that firms

to show these two because they stem straight from the accounts, thus they include all firms and not only the 40 largest. These data were also used in our model, and the details of how these were computed can be seen in the appendix at the end.

⁵⁶A straightforward negative consequence of this on firms is the strong increase in the denominator of the profit rate, calculated as the ratio of current period self-financing and the stock of capital the previous quarter. Clearly, with rising prices of capital, the profit rate tends to fall. We will come back to this in chapter 5.

⁵⁷The emphasis is on this word because we do not mean that the evolution of both series was not perfectly timed. In fact, since both variables in the graph are seasonally adjusted, we are unable to provide a detailed description of the turning points. However, over a three to five years span we can see that both move in the same direction, and this is the main aspect in which we want to focus throughout our work rather than on particular events.

were issuing more equity than debt) is likely to have driven the strong recovery⁵⁸. Likewise, the stock market boom that began around 1995 (manifest in the strong increase in equity prices) is likely to have driven the lagged response in the accumulation rate from that period and until 2001, when the synchronization of both series resumed. This in turn lasted until 2008, when the dependency between the two series (in whatever sense it has played) was strongly diminished. This stylized fact alone reinforces the rest of the points raised above (and dealt with below).

The second effect of rising interest rates for non-financial firms (executives' alienation from central bank command and their incentive to lobby for deregulation in financial markets) is a direct consequence of the former. The reason is straightforward, by feeling less dependent on debt, firms also become less sensitive to changes in the interest rate. Since the latter is set by the central bank, less sensitiveness to interest rates is equivalent to more independence from central banks. All the while, investment becomes dependent on its new source of funding, but if regulations keep funds from flowing freely from buyers to sellers of equity, then both types of actors (notably the latter) will find it irresistible to lobby for these to be removed.

The third effect (the economy's susceptibility to fall into a liquidity trap) derives straight from the former. With less debts on the liability side of firms' balance sheets and consequently less reliance on interest rates, any changes in the latter during this period is likely to have no effect in the demand for credit from non-financial firms, thus on investment.

The fourth effect (banks becoming *market makers*) is an indirect consequence of the former three, and has to do with the fall in the demand for credit, through the lenses of bondholders⁵⁹. With banks perceiving the degradation in their balance sheets (as a consequence on their profits) their 'natural' reaction was to seek for other sources of funding. This point was discussed above in some detail.

The fifth effect (firms' risk-taking behavior) is twofold. On the one hand, following the strong rise in the cost of credit, existing firms that rely on this liability may either declare bankruptcy or (if they make it through) may consider the possibility of changing the nature of their productive activity. Now, if Long and Malitz's evidence (and the works inspired by it) is right, then French firms shifted to other under the new financial order⁶⁰ (usually less labor-intensive activities), which means that (following the standard textbook production function story) they tended to favor capital over labor and, in contrast to the years of the *Trente Glorieuses*, favored supply-side measures above demand-side ones, perpetuating in this way the unemployment problem. On the other hand, with less external influence (i.e. that of private and central banks) firms tended to promote speculation in the stock market in order attract capital. This leads us back to the first point raised and to Figure 6.

Obviously, the sixth effect (the worsening of the unemployment problem) is closely linked to the former point. Here we do not mean at all that the capital structure shift caused the unemployment problem *per se*. The strong rise in the unemployment rate in France since the late 1970s has its roots in several factors, some of which are particular of their time (the oil

⁵⁸That begs the question of why both series became disconnected afterwards. We come back to this below, when we deal with the role of the government in policymaking.

⁵⁹For an interesting article dealing with this and other issues raised in this part (which was also a source of inspiration in this part of our work), see Shi (2003 [65]).

⁶⁰As an example of this is the industrial composition shift, from agriculture and manufacturing before the eighties, to commerce and other services afterwards. On top of that, the dot-com bubble gave non-service industries the *coup de grâce* by seemingly providing evidence to the substitutability of manpower and computers (or, more broadly, machines).

shocks and the corresponding restrictive policies implemented), and others rather structural (*la tournant de la rigueur* and labor market liberalization, for instance). However, what we do imply in this point is that the shift in firms' capital structure coupled with the corresponding industry shift towards riskier and less labor-intensive activities, worsened the *already existing* unemployment problem and may have even contributed in making it last longer than it would have lasted, had it only been a minor random recession dealt with what were considered standard tools up to then. By reducing labor demand, firms were making the recovery even more difficult, given that by doing so they reduced an important source of demand for their own products (workers' income). Parallel to the case of banks being obliged to look for alternative borrowers, French firms were somehow forced to look for new sources of demand (i.e. exports) or innovative techniques to sell to existing sources (i.e. aggressive advertising campaigns).

Finally, all this leads us to the seventh effect, which by the way was caused and further reinforced by the previous ones. The apparent superiority of riskier projects led firms to invest in these rather than on capital expenditures. Unfortunately, however, the long term trend of the accumulation rate (red line in Figure 6) tends to be in the downward direction (not upward, as the European authorities presumed it would). Supply-side and demand-side effects have no doubt played a role in this and, naturally, they just tend to reinforce each other. But with firms favoring the production of services rather than agriculture and industry⁶¹, wealth creation (which by the way occurs *only in the real sector*) takes place at a slower pace than it would have done under no such productive and capital structure shift.

Let us now focus on the liquidity trap and the discussion surrounding this interesting subject.

2.4 From the Liquidity Trap to the Financial Crisis... and Depression

It is not uncommon to read or hear journalists and economists refer to the current recession as a problem related to the so-called liquidity trap. As mentioned above, this situation is said to have arisen once downward movements in interest rates no longer have an expansionary effect on the economy. Most (though not all) economists would agree that the mechanism which links interest rates and investment is the credit market. A common argument, other than the one based on the credit market, is that quantitative easing *in itself* is expansionary, with the newly printed money making its way through banks, thus lowering interest rates. The idea is relatively simple to grasp, and describing the symptoms of such disease are also straightforward. What is, however, not straightforward is how can an economy get to that point⁶².

Our discussion so far has focused on movements in interest rates and the shift in the capital structure of firms. Central to our argument is the idea that, just as Keynes hypothesized more than eight decades ago in his *GT*, *the key instrument to steer the economy is the interest rate*⁶³.

⁶¹As of 2010, industry in France employed 3.5 million workers, whereas commerce, transportation, accommodation and catering absorbed roughly 5.3 million workers (see INSEE, 2013 [31] p. 15). To put these numbers into perspective, "the weight of industry in employment was around 30% in 1962; it is no more than 15% in 2007" (Marchand, 2010 [48], our translation). For a detailed description of the transformations in the structure of employment see Marchand (op cit), which can be found in the following link http://www.insee.fr/fr/themes/document.asp?reg_id=0&id=3071%C2.

⁶²An interesting exception is the work of Koo (2009 [42]) which, despite some crucial differences of opinion concerning Keynes' work and other subjects, also inspired our own research.

⁶³Of course, Keynes' analysis was based on good old standard ('western') finance. As a consequence, it excluded the possibility of finance *without* interest rates (in which case another general theory would have to be studied). For instance, Islam forbids Muslims to charge and to receive interest (what could be seen as

An increase in interest rates would bring about benefits to debt- and bond-holders (national and foreign), whereas it would make debtors (governments, firms or individuals) worse-off. Equivalently, a fall in interest rates would bring about a fall in bankers' profits, whereas it would leave debtors better-off, thus creating an incentive for borrowers to invest and, as long as that investment is not excessive (i.e. it does not lead to the build-up of bubbles), an accrual in national wealth. The idea is based on two major assumptions (which in turn depend on other assumptions). The first is that investment is the main driver of economic growth. The second is that the economy is sensitive to changes in interest rates.

Despite some theoretical differences with respect to the neoclassical school (at least in its textbook version), there is rather consensus among economists that investment, and not saving, is in fact the main driver of economic growth. Keynes explained this through his now famous paradox of thrift which, despite ample theoretical and empirical evidence of its importance, is far from being fully accepted⁶⁴. The main counter-argument to detractors of the investment-saving discussion can be found in the works of Michal Kalecki. As a summary of his thoughts concerning the supremacy of investment over saving⁶⁵ in being the main driver of economic growth in a capitalist economy, let us read his own words written as early as 1937:

Investment considered as capitalists' spending *is the source of prosperity*, and every increase of it improves business and stimulates a further rise of spending for investment. But at the same time investment is an addition to the capital equipment and right from birth it competes with the older generation of this equipment. The tragedy of investment is that it calls forth the crisis because it is useful. I do not wonder that many people consider this theory paradoxical. But it is not the theory which is paradoxical but its subject – the capitalist economy (Kalecki, 1937 [38] p. 95-96, our italics).

Now, concerning the sensitiveness of investment with respect to the interest rate, Keynes' liquidity trap is of the utmost importance. This is so not only because it clearly provides a rationale for understanding what has happened to the French economy since the capital structure shift took place, but because it fills an important apparent gap in Keynes' *general* theory: inter-sectoral relationships, notably with respect to banks. But before delving into the details of the French liquidity trap, let us take a small step back and review the words of one of the most influential economists of our day with respect to Keynes' *GT*, Paul Krugman, whose words are also worth quoting in full:

Perhaps the most surprising **omission** in the *General Theory* – and the one that has so far generated the most **soul-searching** among those macroeconomists who had not forgotten basic Keynesian concepts – is the book's failure to discuss **banking crises**. There's basically **no financial sector** in the *General Theory*;

selling money, which of course has no intrinsic value). As a consequence, *Islamic Finance* is interest-rate-less finance (see Buiter and Rahbari, 2015 [7] for an overview which, by the way, gives more weight to debt than to own funds). Islamic finance is a common practice nowadays (notably, for instance, in Muslim countries like Malaysia), but there are still some drawbacks that have to be addressed for it to be a solid alternative to standard finance. A discussion about this passionating subject is well beyond the scope of the present work.

⁶⁴For instance, a quick glance at investopedia (a website dedicated to investing education) says that "the paradox of thrift is a theory, not a fact, and is widely disputed by non-Keynesian economists. One of the main arguments against the paradox of thrift is that when people increase savings in a bank, the bank has more money to lend, which will generally decrease the interest rate and spur lending and spending". See the following link <http://www.investopedia.com/terms/p/paradox-of-thrift.asp>.

⁶⁵For a discussion on the differences and similarities between Keynes and Kalecki on this point can be found in López and Mott (1999 [46]).

textbook macroeconomics ever since has more or less discussed money and banking off to the side, giving it no central role in business cycle analysis (Krugman, 2011 [44] p. 16, italics in the original, bold caps added).

Interestingly, the title of Krugman's article (of course, from where this citation was obtained) is "Mr. Keynes and the moderns", which is a straightforward reference to Hicks' (1937 [29]) article "Mr. Keynes and the "classics"; a suggested interpretation". Not that this part is devoted to either Krugman's or Hicks' interpretation of what Keynes meant, did not mean or should have meant, but a few words about the titles themselves are worth mentioning. Hicks' IS-LL (later renamed IS-LM by Alvin Hansen) model proposed in that article is quite relevant today, despite some drawbacks in the way it is taught today (Colander, 2003 [10]) and criticism from its own author (Hicks 1980 [30]). His model became the macroeconomics mainstream of the post-*GT* era and the pre-monetarist one. Yet his interpretation that Keynes' theory is particular rather than general, and that the general theory was (and still is) a special case of the classical theory, gives way (in our opinion) to Krugman's analogy with respect to modern macroeconomic theory; the idea that Keynes' theory is incomplete. If Krugman (indeed an important spokesperson for Keynesian economists⁶⁶) is right in that Keynes ignored the financial sector, then explicit inclusion of the financial sector into his theory is the right lead (though certainly not the only one). Without pretending to lecture our predecessors, our model modestly proposes some hints in that direction. The discussion of the liquidity trap is a bridge.

Since, as we saw in the previous section, French firms changed their capital structure in favor of equity given their perception that the nominal interest rate was rising and the inflation rate was falling, naturally the relevant variable is the real (not the nominal) interest rate. Going back to Figure 4, it is worth noting that roughly until 1995 (at least at a first glance), the share of debt obligations in the stock of liabilities of non-financial firms and the real interest rate paid by this same institutional sector moved counter cyclically. From then up to 2001, however, they moved in the same direction. From 2001 to approximately 2004 the relationship between the two became again negative, but turning once again pro-cyclical from 2004 to 2008. Following the crisis, of course, the relationship between credit demand and the interest rate became again negative.

In other words, following the restrictive policies implemented at the end of the seventies, the liquidity trap in France *could* be said to have started with the internet boom (1995) and spanned until the global financial crisis (2008), with the important exception of 2001-2003. However, this assertion would presume that our evidence is based *exclusively* on the long-term procyclicality of the interest rate and the capital structure of firms. But what this would ignore is that the disconnection between the two series⁶⁶ may be coincidental without reflecting any clear-cut (dis)association. Indeed, under a long-run perspective, the real interest rate kept on rising after the capital structure had already shifted in favor of equities (around 1982), but the short-run fluctuations in the latter do not follow the short-run movements in the former shortly after this period. In order to provide a less simplistic (though still rough) explanation of the timing of this relationship⁶⁷, let us carry out a simple first year undergrad correlation exercise from a standard econometrics course.

Table 2 shows the correlation coefficient between the real interest rate and the capital structure of firms (seen from the debt-side). In the absence of any anomaly, this relationship *should*

⁶⁶Note, the Keen-Krugman controversies have fueled Krugman's falling from grace from (non-new-) Keynesian circles.

⁶⁷Clearly, this aspect alone deserves a study of its own, but lies outside the scope of the present work.

<i>Period</i>	<i>Correlation coefficient</i>
<i>1979q1-1981q3</i>	0.66
<i>1981q4-1986q2</i>	-0.81
<i>1986q3-1992q2</i>	0.41
<i>1992q3-2000q4</i>	0.79
<i>2001q1-2003q4</i>	-0.91
<i>2004q1-2008q3</i>	0.21
<i>2008q4-2012q4</i>	-0.92
<i>1979q1-2012q4</i>	-0.45

Table 2: Correlation coefficient between quarterly real interest rate and capital structure of firms, several periods. Source: authors' calculations based on data from *INSEE* and *Banque de France*.

be negative, given that credit demand depends negatively on its cost, which in this case is represented by the difference between the nominal interest rate and the inflation rate on a quarterly basis. The correlation coefficient between these two series in three sub-periods (1981q4-1986q2, 2001q1-2003q4 and 2008q4-2012q4), more than -0.8 in absolute value, indicate that this was indeed the case. Nevertheless, three other sub-samples (1979q1-1981q3, 1986q3-2000q4⁶⁸ and 2004q1-2008q3) are, under this light, anomalous. Let us delve a little bit deeper into these numbers.

As mentioned previously, the restrictive monetary policy implemented by *Banque de France* beginning in 1979 was a response to two major adverse effects; domestic inflationary pressures and dis-inflationary measures in the United States (thus the risk of capital flight). Depending on the circumstances and the reactivity of economic actors, macroeconomic policy may take some time to be effective. This was the case at the end of the 1970s. Nominal interest rates were already on their way up, but for this to have any effect on the inflation rate (thus on the real interest rate) two more years would have to elapse. As a consequence, the relationship between the real interest rate and the capital structure is positive from 1979q1 to 1981q3. Nonetheless, once the policy gained effectiveness and credibility, rising interest rates reduced demand for credit and output expansion significantly. Indeed, for the share of debt issued out of total liabilities to go from 68% in 1982 to only 41% in 1986 is no minor change. With the onset of the 1987 stock market crash and following the 1990 recession, indebtedness showed slight signs of recovery with respect to own funds, but the overall trend since the second quarter of 1986 and up to the fourth quarter of 2000, the correlation coefficient between the series analyzed (real interest rate and capital structure) was positive, although stronger since 1992q3. Following the strong fall in the price of equities in 2000-2001, credit demand was again given a place of honor (and with it the interest rate too), but this lasted only until 2004, when capital structure became insensitive to changes in the real interest rate. The 2000-2001 story repeated itself with the global financial crisis.

Based on this rough correlation representation, we can say that the liquidity trap started in 1986q3 (not in 1995 as graphical inspection alone seemed to suggest), and lasted until 2008q3. An important exception of this *trap span* is the post-crisis period 2001-2003, during which debt issuance gained momentum, even if only for a short time. Now, in 2008 the stock-market bubble burst, and the housing bubble drastically stopped its aggressive upward path. As has been suggested throughout the discussion, the process of the origin (and end) of both is strongly

⁶⁸This period is shown in two parts. More on this below.

related⁶⁹, and can be explained by the evolution of interest rates, which in turn were strongly influenced by the events leading (and pertaining) to the Volcker experiment.

To sum up, the housing bubble is likely to have been fed by, at least, two major long-term trends: (1) the sharp increase in households' indebtedness, and (2) the strong degradation in their living standards (wage contraction and rise in unemployment, mainly). In turn, throughout the same period the stock-market bubble grew thanks to the bull market that accompanied the massive issuance of equities created by (1) movements in interest rates and (2) the falling from grace of credit demand by firms (both of which were mutually reinforcing). With the collapse of Lehman Brothers in the U.S. came the signal of the worldwide bubble burst of both markets⁷⁰. Persistent price increases of houses and equity could not last forever unless major changes occur, notably so in the context of a monetary union.

Since the implosion of the most recent global financial crisis, tons of works (well-founded or otherwise) have addressed this important issue. Perhaps before getting there directly, it is worth taking one more step back in order to understand what the government can do (if it has the will to do or if it is not constrained to follow 'disciplinary measures') to smooth the business cycle, particularly before and after a slump.

3 From maximum employment to minimum inflation; the role of the government and income distribution

3.1 The employment-price stability paradox

The outcome of the strong restrictive monetary policy implemented at the beginning of the 1980s in France has had important negative consequences for households and non-financial firms, and the government has (at times) tried to compensate these unfavorable events. The consequences on their balance sheets and current accounts was described in the previous section. Nevertheless, in our opinion there are two more consequences even more important than the ones described up to here: the strong increase and persistence of high unemployment and income inequality. To illustrate our reasons, for the sake of simplicity (and despite the clear lack of realism), let us assume that everything that we have described thus far happens in an economy that is at full employment, even in the face of dire changes in the interest rates, firms' capital structure, inflation, and so on. Under this logic, firms may be assumed to lower wages proportionately for all workers instead of laying some of them off in case of important financial constraints.

In these circumstances, following a resolute decision of the authorities to implement a strong restrictive monetary policy of the same size as that observed in the early 1980s, firms would have to lower wages drastically in order to preserve their share constant. In the absence of a paternalistic or even populist⁷¹ government, the fall in wages would have to be considerable.

⁶⁹For a thorough (and somehow different) analysis of the link between housing and stock market bubbles, see Shiller's (2014 [67]) Nobel lecture.

⁷⁰This is only a half truth. Housing bubbles went bust in several English-speaking countries and Spain, but not in France and other countries. Indeed, the second major bubble mentioned in section 2.2 did not collapse. What happened instead was a sudden halt in the upward evolution of housing (and land) prices.

⁷¹Interestingly, in a recent conference at Kedge Business School addressed by the newly elected vice-president of the European Commission Jirky Katainen, we were able to see that every time Mr. Katainen referred to

For this to work, unions would have to accept wage cuts instead of opposing them. Be it as it may, with the strong fall in wages every worker would be worse-off than before the adverse shock. Now, at this point we did not assume equal wages for every worker, so that inequalities already existed in this hypothetical scenario. With the adverse shock, and under the circumstances depicted here, the wage cut would have to be proportional for all.

If this had actually been the case (clearly, it was not) national revenue would have fallen equally for all and, no matter how strong the fall in national income would be, the economy would still be at full employment. Eventually, of course, with the recovery everybody will be equally better-off, depending on how fast the economy grows. Those at the bottom of the income distribution ladder would momentarily find themselves below the poverty line (whatever that level might be) during the slump, but would get out of it with the recovery. Those at the top of the ladder would see their wealth diminish and rise up again, without their very subsistence being threatened. Under this restrictive set of assumptions we have ignored (just like neoclassical economists do in their models) that employment and income and wealth inequality *do not* remain proportional along the business cycle. This simple thought experiment is useful in that it proves (by assuming the 'absurd') the importance of why employment and inequality matter.

Before delving into the aspects concerning the role of the government in smoothing business cycles and the *functional* distribution of income, let us deal first with the *personal* distribution of income. To do so, let us first take a look at Figure 7, which shows the unemployment rate⁷² and the inflation rate, which normally make up the Phillips curve in a single diagram with no time dimension. In the mid-seventies, the inflation rate was high and the unemployment rate was correspondingly low. The series moved counter-cyclically until 1978, then pro-cyclically from that period until 1981, only to get back to the previous regular pattern, which was reversed again between 1996 and 1999. By then, however, the unemployment rate was already intolerably high (10%). In contrast, consumer prices were growing mildly (much less than 1% per quarter). Whereas, having a well paid job was commonplace before the seventies, it seems as though it were a privilege today, particularly so for the young.

It is important to note that, as the inter-sector leveraging shift (between firms and households, as described above) took place in the second half the eighties, the unemployment rate reached 9% and the inflation rate drastically fell to 0.63% on a quarterly basis. Perhaps since then, the regime and paradigm shift can be associated to the capital composition of firms. Central bankers' dream of taming inflation⁷³ came true, but clearly at a high price (though this price was clearly born only by those at the bottom).

With the unemployment rate at triple its *Trente Glorieuses*-level⁷⁴ and with the degradation of living standards⁷⁵, inequalities are likely to have risen since then. Thus, under the new

'Euro-skeptics' he would add the term 'populists' in order to highlight his perception that *skepticism about Europe* (which should in any case be perceived as skepticism about the rules imposed by the authorities in charge, rather than on Europe itself) comes from *populists* who oppose fiscal discipline.

⁷²This graph starts in 1975 given that unemployment quarterly data from *INSEE* is only available starting in that period.

⁷³See for instance Feldstein's interview with former Federal Reserve chairman Paul Volcker (2013 [17]). See also "The Anguish of Central Banking" by also former chairman of the Fed Arthur Burns (1979 [9]).

⁷⁴Just like any statistic, we believe this series contains important measurement errors (see Goarant et al, 2010 [24] p. 7). Moreover, it is likely that it is underestimated, given methodological issues stemming straight from ILO (number of hours worked to be considered employed, or the consideration of 'actively searching for a job', for instance).

⁷⁵As we will see below, real wages were also contained.

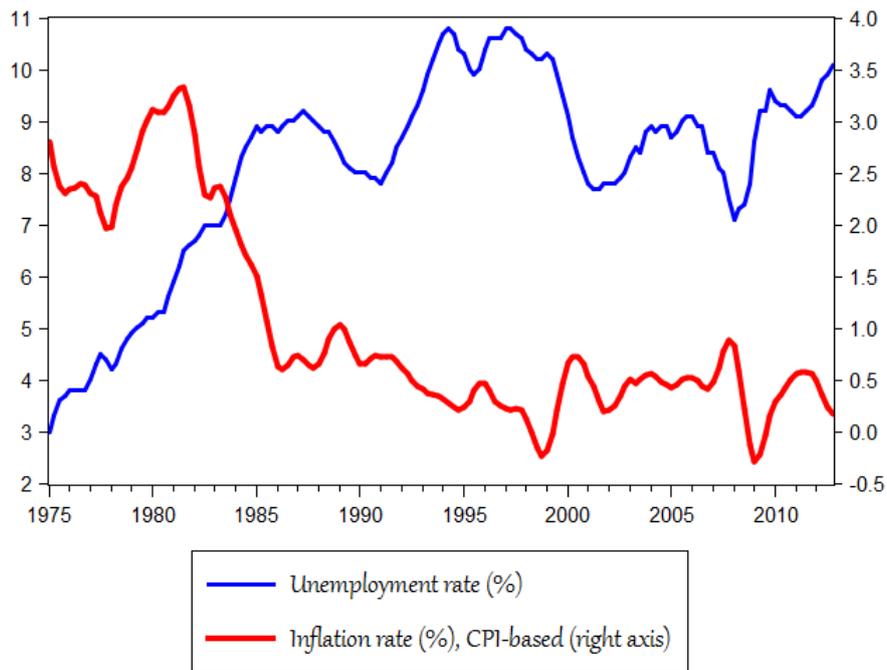


Figure 7: Unemployment rate and inflation rate (%); 1975-2012. Source: author's calculations based on data by *INSEE*.

Spencerian order, social polarization between income brackets would turn out to be even more extreme, with the bottom becoming thicker and the top slimmer.

3.2 The role of the French government in economic policy

Throughout the years known as the *Trente Glorieuses*, the French government was a key player in the economic landscape. Not only because of it was (and still is) *big* in the sense implied by Minsky (1986 [53]), but also because it was wise in following what we consider to be the correct measures⁷⁶. These measures had a common goal: to achieve the maximum level of employment.

As stressed over and over in this work, with the advent of the Washington consensus came two major oil shocks, and with the second one came a strong policy response that drastically changed this landscape, and with it (along with all the changes described in the previous section) the role of the government. Since *Banque de France* proved being stronger than the government (probably also because of the alleged supremacy of interest rates), the minimum inflation goals of the former would have to be pursued at the expense of the latter's goals (at least up to 1979) of maximum employment. A contemporaneous example of this policy goal conflict in the European Union is the Stability and Growth Pact⁷⁷ which, of course, has as a

⁷⁶The word *correct* should be interpreted in a broader sense when it comes to this particular case. For instance, for much of the fifties and sixties, public investment as a proportion of GDP was growing importantly. This policy in itself is seen as encouraging private investment and thus employment in the corresponding country. However, at least a part of these expenses was used to finance the war in former Indochina and Algeria and related expenses. War, in whatever context, is not seen here as *correct*.

⁷⁷On the European Central Bank website one can read that "[t]he Stability and Growth Pact (SGP) is a set of rules designed to ensure that countries in the European Union pursue sound public finances and coordinate their fiscal policies." See http://ec.europa.eu/economy_finance/economic_governance/sgp/index_en.htm.

priority *stability* (otherwise it would be the Growth and Stability Pact). It should be noted that the European authorities see consumer price stability (rather than, for example, equity or housing price stability) as a precondition of growth, instead of as the standard trade-off implied by the Phillips curve. Clearly, seven years after the crisis, sustained economic growth is still to come for all member states.

Let us begin by studying the current account balance of the government. Table 3 shows the income side of the public current account from 1949 to 2012 in several sub-periods. Two stylized facts stand out from these numbers. The first is that the bulk of government receipts come from taxes (value added taxes and income taxes⁷⁸) and contributions. The second is that some clear trends provide support to our claim of the policy goals pursued before and after the strong rise in interest rates.

<i>Period</i>	<i>GOP</i>	<i>VAT</i>	<i>Subv.</i>	<i>Div/Int</i>	<i>Inc. tax</i>	<i>S. contr.</i>	<i>Transf.</i>	<i>Publ. rev.</i>
<i>1949-1959</i>	3.2	51.2	-6.9	2.7	14.8	30.7	4.4	31.6
<i>1960-1969</i>	3.8	47.2	-6.4	3.0	15.6	35.4	1.4	35.3
<i>1970-1979</i>	4.2	37.6	-5.0	3.2	17.0	41.5	1.5	38.5
<i>1980-1989</i>	5.0	33.7	-5.0	2.8	17.5	44.7	1.3	44.5
<i>1990-1999</i>	5.2	32.4	-3.4	2.4	19.1	42.8	1.5	46.5
<i>2000-2007</i>	5.3	32.1	-3.2	1.5	24.4	38.3	1.5	47.1
<i>2008-2012</i>	5.9	31.8	-3.2	1.7	23.2	39.2	1.6	47.7

Table 3: Government revenue by source % of total government receipts, except last column (% of GDP). **GOP** is gross operating surplus. **VAT** is the sum of *TVA*, *droits de douane*, *impôts sur les produits*, *impôts sur la main d'oeuvre* and *autres impôts sur la production*. **Subv.** are subsidies. **Div/Int** are interests, dividends, insurance and property income. **Inc. tax** are all income taxes received by the government. **S. contr.** are social contributions paid by all sectors. **Transf.** stands for transfers received. **Publ. rev.** is total public revenue. **Source:** Author's calculations using data from *INSEE*.

The second column of the table shows the gross operating surplus of the government⁷⁹, and it shows that it has somehow progressed as proportion of total public revenues, mainly due to the reduction in public sector employment. The third column shows the opposite trend for value added taxes, which in the decade of the fifties represented more than half of total revenues, but has progressively fallen to less than a third. As Kalecki hypothesized in his mark-up theory of prices⁸⁰, any increase in sales taxes (i.e. VAT) would either have to reduce mark-ups or translate into higher prices, which would ultimately be paid by consumers. This strong tendency for value added taxes to fall as a proportion of public receipts may reflect the French government's will to promote price stability.

Subsidies, dividends and interest receipts have declined significantly since the beginning of the sample under study. Since, as we saw above, individual entrepreneurs (allegedly the most important recipient of subsidies) have decreased in number, it is not surprising to see subsidies

⁷⁸Reminder; as we saw above, income taxes as proportion of disposable income has increased sharply since the 1950s. As a consequence, a bulk of these government revenues has come from the pockets of households.

⁷⁹This item is the difference between value added (which in the case of the government is non-market production) and subsidies on the one hand, and wages paid to civil servants on the other.

⁸⁰Reynolds (2004 [61] p. 105) mentions that "[t]he main thrust of [Kalecki's 1941 papers] was to argue in favour of rationing and *against indirect taxes*, which he saw as merely a form of government-controlled inflation" (italics added).

represent a smaller share of total receipts. Now, before the 1980s dividends (the most important item in the fifth column of the table) were more important than afterwards as a proportion of government receipts. This is so because of the privatization wave that accompanied the liberalization and deregulation process characteristic of the last thirty-some years.

The weight of income taxes in public revenue has been progressively rising since the late forties, going from 14.8% in the first sub-period (1949-1959) to 23.2% in the last one (2008q1-2012q4). Actually, given the strong activation of the automatic stabilizers after the 2008 crisis, income taxes fell relative to public revenues afterwards. Social security contributions, on the other hand, has neatly increased in the composition of government incomes. The bulk of these are paid by employers (61.7% out of total). Transfers represented 4.4% of public revenues from 1949 to 1959 (mostly in the form of international cooperation, or simply reconstruction aid), but since the following decade it has not reached more than 1.6%. Finally, to our surprise, as the last column shows public revenue as a share of GDP has increased (and not fallen, as we would have expected). We interpret this being mainly the result of the gradual fall in growth rates since the immediate post-war period.

Let us now analyze the expenditure side of the public balance. Table 4 shows the main components of public expenditure by broad group. The first column indicates that the amount of public resources dedicated to pay public servants has been declining since the 1980s. On average, this item represented no less than 41.2% out of total expenditures from 1949 to 1979, but from then on it has progressively fallen until finally reaching 34.5% in the period 2008q1-2012q4. It must be noted that wages, together with benefits, represent the bulk of government expenditures.

<i>Period</i>	<i>Wages</i>	<i>Int.</i>	<i>S. ben.</i>	<i>Transf.</i>	<i>Govt. outlays</i>
<i>1949-1959</i>	42.8	5.2	45.1	6.9	21.3
<i>1960-1969</i>	41.2	4.3	49.0	5.6	23.5
<i>1970-1979</i>	42.2	3.1	50.1	4.6	26.8
<i>1980-1989</i>	39.2	6.4	50.0	4.4	33.4
<i>1990-1999</i>	36.5	8.8	48.9	5.9	36.2
<i>2000-2007</i>	36.5	7.8	48.5	7.3	36.2
<i>2008-2012</i>	34.5	6.8	50.2	8.4	38.3

Table 4: Government current expenditure by destination % of total public spending, except last column (% of GDP). **Wages** is the sum of *masse salariale*, *cotisations sociales employeurs* and *cotisations imputées*. **Int.** is interest payments. **S. ben.** is the sum of all social security benefits (*prestations*). **Transf.** are all transfers. **Source:** Author's calculations using data from *INSEE*.

Interest payments are, of course, paid to banks (both domestic and foreign) in exchange for the issuance of bonds. Given that interest rates were presumably lower before the 1980s⁸¹, it is hardly surprising that interest payments actually diminished from the 1950s to the 1970s. With the restrictive monetary policy implemented in the early 1980s, we can see that during this decade interest payments more than doubled in importance as share of public spending. The following two sub-periods it would be even higher (though diminishing), in order to settle

⁸¹As we mentioned above, data constraints do not allow us to calculate the apparent interest rate paid by the government. However, given the inflationary bias of the period, we assume this was actually the case. Of course, the mere fact that interest payments were lower as percentage of government expenditure is another indicator that supports this claim.

at 6.8% from 2008q1 to 2012q4. It must be noted that the interest rate paid by the government progressively fell in the mid-nineties (more on this below).

After having increased by 3.9% out of public expenditure from the fifties to the sixties, social benefits have remained remarkably stable, remaining at around 49%. However, it is worth noting that despite the worsening of households' revenue and the strong rise in the unemployment rate since the 1980s, benefits (which include family allowances, along with retirement, handicap and unemployment benefits) did not increase their share. This lack of proportionality between benefits (on the expenditure side) and falling incomes (on the social side) may be indicative of a political motivation to contain public expenditure, which is often considered as inflationary in itself. Other types of aid, included under the heading transfers (fifth column), fell steadily until the 1980s but progressed afterwards. This item includes current transfers to non-profit institutions serving households, intra-governmental transfers, the *quatrième ressource propre* and other redistributive expenses (see INSEE [32], p. 120 - 121).

Another key element at the disposal of the government to smooth the business cycle is investment which, added to the current expenditure analyzed above, and both subtracted from public revenue make up the government balance or, equivalently, its financing capacity (when it is positive) or need (when it is negative). These two items are shown in Figure 8 as percentage of GDP from the first quarter of 1949 to the fourth quarter of 2012.

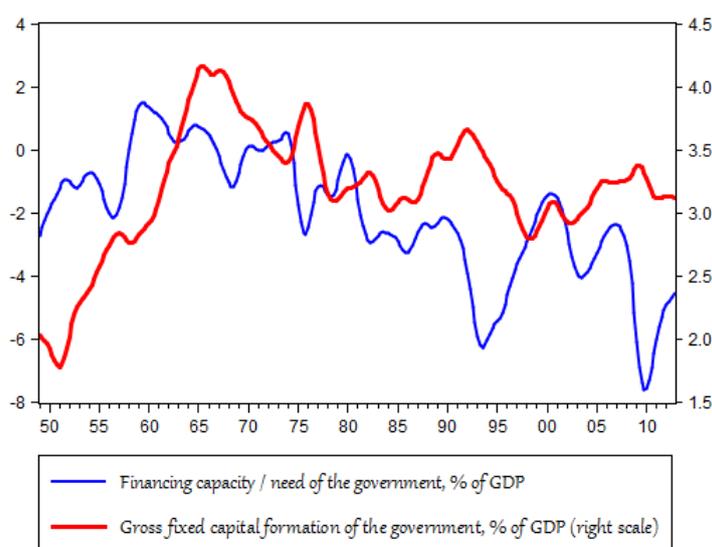


Figure 8: Government balance and investment as share of GDP; 1949-2012. HP filters with $\lambda = 10$. Source: author's calculations based on data by INSEE.

Several features of the series stand out. One is the fact that the government balance - the blue line - reached an important surplus (1.5% of GDP) in 1959, after having climbed rapidly since 1956, period in which there was an important public deficit⁸² (2.2% of GDP). Since then, however, it has steadily deteriorated, reaching record deficits in 1993 (6.3%) and 2009 (7.6%). Another aspect that is important to highlight from the public balance is that it has been strongly countercyclical, although not always with perfect timing. For example, following

⁸²At this point it must be noted that this series does not correspond to the Maastricht criteria, therefore, the graph does not necessarily represent the ones shown in the press.

the first oil shock, the government ran a deficit equivalent to 2.6% of GDP. However, with the second oil shock already hurting the economy, the Giscard administration (with Raymond Barre as prime minister) did not allow for the automatic stabilizers to be activated, and these would wait until François Mitterrand was elected president for Barre to resign and allow the government to run a public deficit equivalent to 2.9% of GDP in 1982, which would be kept at around that level until the first *cohabitation* (with Jacques Chirac elected as prime minister), period during which the government would pursue fiscal consolidation again.

Public investment was very important during the 1950s and 1960s. This can be seen in the strong rise of this series during these two decades, going from 1.8% of GDP in 1951, to 4.2% in 1965 (notably, due to the reconstruction). Since that peak it would start declining, first strongly (1967-1978, with the exception of 1975-76), then it would stabilize and even increase (1978-1992), in order to fall again after the 1990 recession and during the internet boom (1992-1998) in order to rise (until 2009) and fall again (after 2009).

A particularly interesting episode started around 19 October 1987 (black Monday), period in which the price of equities issued by non-financial firms fell drastically. Nonetheless, taking a look back at Figure 6, it can be seen that, despite the fact that (according to our arguments) investment was no longer reacting to changes in the interest rate but were instead sensitive to the evolution of the price of equities, physical capital accumulation *did not* fall immediately after this adverse shock. In fact, accumulation even gains momentum, and this is thanks to the fact that *public investment did not fall during this period* - it actually increased - thus crowding-*in* (and not crowding-*out* as anti-Keynesians like to think) private firms' investment⁸³. By 1989 (with socialist Édith Cresson as prime minister) public investment started declining again slightly, but with the 1990 recession it climbed back up rapidly, together with current public expenditure. These developments led to a strong government deficit that lasted until 1993, when Édouard Balladur (formerly minister of the economy and finance during Chirac's tenure) took office as prime minister, inaugurating the second *cohabitation* and the renewal of the fiscal consolidation agenda.

It is worth mentioning that the expansionary fiscal policies (when they took place, mostly under prime ministers from the socialist party) implemented after 1980 were coupled with restrictive monetary policies. What this implies is, on the one hand, that the effectiveness of such policies was rather limited due to the lack of consistency between fiscal and monetary policy. On the other hand what this implied was that, with employment, production and money supply being strongly constrained, coupled with a government that has a reputation for being generous with its citizens, this had the effect of pushing up the burden of public debt as share of GDP. With *Banque de France* (and the ECB after the introduction of the euro) pulling in one way, and with the government pushing in the other sense, it is natural that the overall outcome has been mixed since the capital structure shift took place. Moreover, with less growth and employment, the more the need for public debt to finance the lack of effective demand.

Figure 9 shows the stock of liabilities of the government⁸⁴ as share of GDP (red line) and the interest rate on public debt (blue line). Two things must be highlighted from the figure. The first is that both the interest rate and the debt-GDP ratio were low at the beginning of

⁸³Interestingly, given that non-financial firms had already drastically curtailed their demand for credit, with the government stepping in as a *borrower of last resort* even if this had made interest rates rise (it *did not*), such rise would not even have been a problem, given that firms relied much more on own funds than on debt.

⁸⁴Note, this series was built under certain assumptions that fit our model's simplification purposes. However, we tried to keep the series as loyal to the original as possible. See chapter 4 for the details.

the 1980s (-1.9% and 19%, respectively), but high by 2012 (0.3%⁸⁵ and 93%). The second is the apparent lack of synchronization between business cycles and the debt-GDP ratio. Let us deal with each at the time.

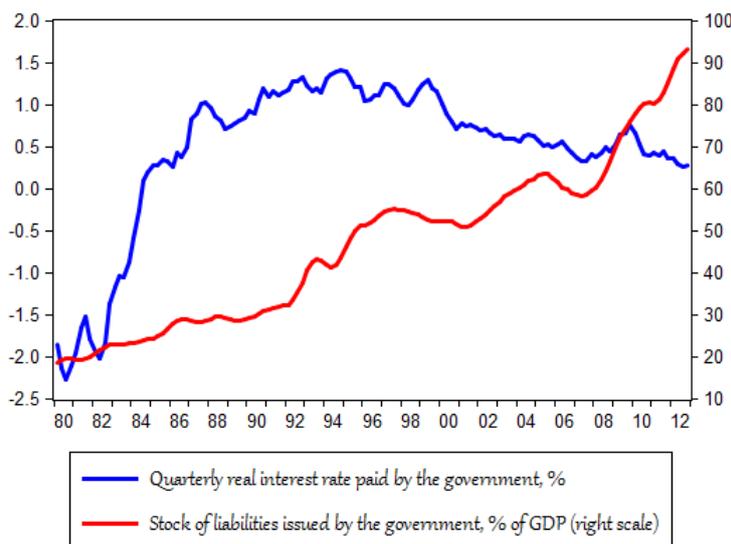


Figure 9: Public liabilities (% of GDP) and quarterly apparent interest rate paid by the government (%); 1980-2012. Source: author's calculations based on data by *INSEE* and *Banque de France*.

As mentioned previously for the relationship between firms' debt and the interest rate they have to pay, once a debt is contracted it is paid back at maturity. Now, public liabilities are made up of bonds in a much larger proportion than debt, which could indicate that the treatment is different. However, governments have the reputation of *rolling-over* debt (that is, delaying payments) as much as possible. As a consequence, long-term debts contracted in, say, 1982 would normally be expected to get paid back one, five or ten years hence. Moreover, the temptation of paying debt with yet more debt in periods when incomes, tax receipts, employment, production and savings are falling (i.e. the 1980s) is irresistible given that there seems to be no other alternatives of raising funds for the fiscal authority. Bearing this in mind, it is now comprehensible why we did not observe a strong rise of the stock of government liabilities immediately after the 1980-1982 recession. What was observed instead was a strong and sustained (though irregular) rise in the debt-GDP ratio starting in 1992; ten years later.

Naturally, with GDP growing rapidly during the internet boom (1995-2000) the public debt-to-GDP ratio tended to fall, if only during that period, for after the 2000 crisis it would increase drastically. The rise in this indicator was due to three effects: (1) the fall in output (the denominator of the ratio), (2) the rise in debt itself due to the crisis⁸⁶, and (3) the slight fall in the real interest rate that took place beginning in 2001. A relatively strong drop in the public debt-GDP ratio taking place between 2005q3 and 2007q2 (the beginning of the global financial

⁸⁵This number may seem low. However, the reader must note that (1) these are quarterly interest rates (thus, roughly four times that number should be equivalent to the annual figure), and (2) the interest rate at the end of the period is higher, so that these numbers are also significantly higher than at in the first half of the eighties in absolute terms.

⁸⁶Another important factor is the arrival of baby-boomers at retirement age (Goarant et al, 2010 [24], p. 8) which, of course, have to get paid for retirement, the sources of which also come from debt.

crisis) marked the resumption of the rise in this ratio, which from then until 2012 grew even more.

The apparent lack of synchronization between the interest rate and the debt-ratio is partly explained by the timing problem described above. However, two more things should be added. First, with the real interest rate going up (that is, with the combination of the increase in the nominal interest rate and the fall in the inflation rate) the cost of debt increased but, since governments look after this element with less stringency than firms (presumably because they have multiple objectives which must correspond to other sectors other than itself) debt kept on rising⁸⁷. Second, with public debt contracted in a period when commodities' prices are higher than at maturity, the burden of debt increases in itself. A low inflation environment, of course, is beneficial for lenders (i.e. domestic and foreign banks), but as much as it benefits them it harms indebted sectors (households and the government at this point) because it implies that a given amount borrowed at some point in time will have to be reimbursed at a higher value in the future (interest payments aside).

This discussion clearly refutes the idea that public debt is a *cause* of the current crisis in France. We see it rather as a *consequence* of events that date all the way back to the collapse of the Bretton Woods system, its consequent replacement by the Washington consensus, the Volcker shock, and the restrictive policies irregularly implemented (though eventually converging) since then. With rising nominal interest rates the inflation rate fell and firms de-leveraged at the same time that they issued massive amounts of equity to finance their investment, making the economy more sensitive to the stock market and less so with respect to the central bank. Once real interest rates stopped rising for households, these (despite the strong fall in their incomes) increased their demand for credit, and this in turn created two housing bubbles. In the meantime, with falling demand for credit from firms and with households borrowing part of these 'unborrowed' funds, the government also stepped in as a *borrower of last resort*, although it might have been obliged to do so rather than having the political will to do it.

Let us now focus our attention on the aftermath of the global financial crisis to confirm what we just said. From 2008 to 2010 the automatic stabilizers were allowed to be activated, thanks in part to the IMF and in part given the strong need for these act, if at least as in a regular recession. In 2010, notwithstanding the gravity of the crisis and the high unemployment rates, fiscal consolidation was back on the policy agenda. Paradoxically though, this time it is the socialist party in power that pursues this goal. Now, aiming at fiscal consolidation during the slump (and not once this phase of the cycle is over), that is, at a time when aggregate demand is falling, production is stagnating, *firms and households are de-leveraging*, demand for dwellings and equity is weakening and, perhaps most importantly, when the unemployment rate is at unbearably high levels, does not seem like a good idea (or even a *morally* viable choice!). Moreover, by asking affected Eurozone member states to pursue "belt-tightening" measures in order to safeguard the stability of their common currency in this period when it is most needed (at levels comparable to those only seen between two world wars), European authorities may be seen as endangering political stability, thus promoting the opposite of what it is actually looking for.

Now, since in France social security and health expenses paid by the public sector are the main items in which the government spends⁸⁸ (fourth column of Table 4), it is not surpris-

⁸⁷It should also be noted that governments do not issue equity (not yet?), so there is no alternative to raise funds other than taxes and money printing, but since neither option seemed feasible (except the former, see below), debt kept on increasing because it was basically the only option available.

⁸⁸Indeed, these two items also rank high among developed economies, see Ministère de l'Économie 2013 [11].

ing that *l'Élysée* also targets these important safety nets. By reducing spending on these two and other key social development items (for instance education), let alone expenditure itself, the government may quickly reach its obsessive goal of achieving fiscal balance, but at a *high social cost*. By considerably reducing the welfare state (or carrying out so-called "structural reforms"), European authorities might only see the day they achieve their Lisbon strategy dream of turning Europe (if only the northern part) into the most competitive block when middle- to low-income European economies become fully de-industrialized (including France).

Perhaps if instead of following European authorities down a blind alley the French government pursued expansionary **monetary, fiscal and incomes** (that is, *Keynesian/Kaleckian*) policies as it is supposed to do⁸⁹, private sector balance sheets would recover faster. In fact, if it chooses to follow the austerity way, as it has so far, balance sheets of firms, households, the government, and even banks may (if at all) take longer to be repaired.

Now, lending support to our claims that the *paradigm shift*, manifest in the change of the capital structure of firms (in turn caused by changes in interest rates), has had a major impact in the new economic order, Luigi Pasinetti (a major figure in the Cambridge controversies) is of the opinion that "the emphasis and insistence, as well as the thrust with which the Modigliani-Miller theorem was adopted, elaborated and presented in such numerous articles, books and textbooks of mainstream economic theory, contributed to generating a dramatic shift in economic, monetary and financial policies over the past few decades" (Pasinetti, 2012 [58], p. 1440).

3.3 Personal and functional distribution of income from the golden years (1949-1979) to the Washington consensus (1979-2012)

As we saw above (Figure 2), in 1949 French households' disposable income⁹⁰ represented around 75% of GDP and it has declined since then. By the end of the forties, their saving was roughly 13% of total output, whereas their investment was about 6%. Compared to today's figures, these are high levels of income and saving, but a low level of investment. These numbers imply that the sector's financing capacity (the difference between their saving and investment) was close to 7%.

During the decade of the fifties these numbers changed considerably. Households' financing capacity⁹¹ fell gradually to 3.8% by the end of the decade, but this was the consequence of an increase in their investment rate to 7.7% on average through the second half of the corresponding decade. Disposable income represented 3% of output less than in 1949. However, it must be noted that these trends were coupled with an unemployment rate of no more than 3% (see Galeson and Zellner, 1957 [21]). Inflation went from nearly 0 in 1949 to 7.5% quarterly in 1951q2, and a sharp decline again close to 0 that lasted from 1952 to 1957, then growing again, though not as much as before⁹².

By 1961, households' saving rate was 12.3%, though it climbed significantly from that point on until it reached 13.5% in 1963 (mainly driven by a sudden quarterly increase of 3.5% of the

⁸⁹As a socialist party, it *should* promote these policies, otherwise it is no longer socialist, thus it should at least change its name to avoid confusing the uneducated public.

⁹⁰Households' disposable income is individual entrepreneurs' profits plus (net) wages received by workers, interest received on deposits, dividends, and benefits, less interests on debts, contributions and taxes paid.

⁹¹That is, the difference between their savings and investments.

⁹²The data described in this paragraph, and the rest of the section, unless otherwise specified (for instance the unemployment rate before 1975) stem from *INSEE's Comptes Détaillées par Agent*.

real wage), bouncing slightly back to 13% in 1964, but settling at around 13.3% until 1969, when it fell again. These ups and downs are mirrored in the evolution of disposable income, which went from 70% of national income in 1961 to 71.4% two years later, though it gradually fell until it reached 70% in 1968, despite the strong decline in production of 5.4% in the second quarter of that year. During this decade, their investment rate kept on increasing, going from 7.3% in 1960 to 9.1% in 1969, which further diminished their financing capacity. During the first half of the sixties (perhaps the peak of the years known as the *Trente Glorieuses*) the average unemployment rate was 1.5%⁹³, and the average quarterly inflation rate 1%. The figures during the second half were 2.3 and 1.1%, respectively.

Meanwhile, firms' financing *need* (that is, the difference between their profits after distribution and taxes, or self-financing, and their gross investment) went from -0.4% of GDP in 1950 to -5% in 1951. From that period until 1953 it remained at around that level, and began declining gradually until it reached a 7.3% deficit in 1958. It must be noted that, during the 1950s, their self-financing remained at an average of 4.7% of total output, whereas their investment rate remained at around 8.8%. During these two 1950s and 1960s the saving rates of these two sectors (households and non-financial firms) moved counter cyclically, mainly given that a financing capacity from households normally financed firms' investment. A particularly interesting episode took place from 1961 to 1963, when the slice of the cake for households grew by 3.4%, at the same time that that of firms shrank by 4%.

For the first three years of the decade of the seventies households kept their financing capacity at around 4.3% of GDP, the government balance was in equilibrium, and the financing need of non-financial firms moved counter-cyclically with respect to the rest of the world's current account. The first went from a 5.6% deficit in 1970q2 to -4.2% a year hence, whereas the current account went from near balance to a 1% deficit. The link between financing capacities and needs between firms and the rest of the world was much clearer once the first oil shock hit. From 1973q4 to 1974q1, firms' financing need went from -4.6 to -7.6% of output. The financing capacity of households went from 4.2 to 3.1%. At the same time, the current account improved by 2.7%. The losses incurred by the private sector were not absorbed by the government *immediately*, which saw its financing capacity rise from near-balance to 1% of national income. Nonetheless, the public balance started worsening in the second quarter of 1974 and, as the government increased its expenditure above its receipts, the balance of households and firms improved. This is a clear example of the effectiveness of fiscal policy. It is also worth saying that part of its success is due to the fact that monetary policy *was not* as restrictive it is today.

Despite the sharp and prolonged decline in output between 1974 and 1975⁹⁴, during this period firms and households improved their current account balances. In 1975 the government ran a deficit of 2.8% of GDP. However, the year after it embarked upon a fiscal consolidation plan (the so-called *Plan Barre*), which had as a consequence a worsening of the financing capacity of the private sector while the plan lasted. In the meantime, although price increases were more or less contained, the unemployment rate did not stop from growing. Our interpretation of the efficiency (rather than the inefficiency) of fiscal policy is clearly at odds with the current official discourse, which is documented in Martin, Tytell and Yakadina (2011 [49]).

⁹³See Table 1 of Nickell, Nunziata and Ochel (2005 [57]).

⁹⁴At this point it is worth mentioning that, during this period, the growth rate of real wages did not match the fate of the growth rate of output. In fact, contrary to GDP, real wages did not fall. This was rather rare, given that there was a clear direct association between both series from 1949 to 1979, except for some particular periods (1960-1963 and 1968q2).

Now, this more or less brief discussion of the financing capacity of households, firms, the government and the rest of the world before 1979, which accounts for a description of the *functional* distribution of income, has to be complemented by an analysis of the description of the *personal* distribution of income up to then. Although difficult to come by, certain measures are available at the Top Incomes Database⁹⁵, some of which we present here.

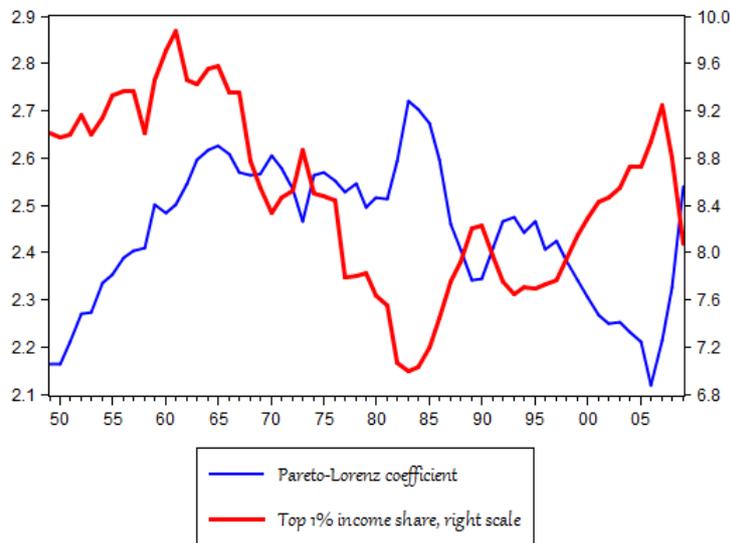


Figure 10: The Pareto-Lorenz a coefficients were computed using the top shares estimates. As a rule they were estimated from the top 0.1% share within the top 1% share. When the top 0.1% and top 1% shares were not available, the closest substitutes were used. Source: Top Incomes Database.

Figure 10 shows the Lorenz coefficient⁹⁶ and the Top 1% income share, that is, the share of income held by the wealthiest 1% of the French population. Evidently, if the top 1% becomes richer, the remaining 99% becomes likewise poorer, and the other way around. The Lorenz coefficient (a) is interpreted in the opposite sense and for a comparative between the top 1 and 0.1% shares. Thus, if a increases income concentration is less extreme between the top 1 and the top 0.1%. From 1949 to 1961 income inequality increased, given that the income share of the top 1% increased from 9 to 9.8%. Paradoxically, inequality *at the top* decreased. From 1961 to 1970 income inequality was reduced, which can be seen in the fact that the share of the top 1% fell to 8.3%. After a rather short period (1970-1973) inequality worsened, but for the next decade it improved considerably. The counter-cyclicity between the Lorenz coefficient and the top 1% share was only clear beginning in 1969, which indicates that from then on income inequality at the top would follow the same trend as global inequality between the top 1% and the remaining 99% percentiles.

⁹⁵See the following link <http://topincomes.parisschoolofeconomics.eu/>.

⁹⁶As mentioned at the source, this coefficient is calculated as $a = \frac{1}{\left(1 - \frac{\log(S1\%/S0.1\%)}{\log(10)}\right)}$. Thus, it should be read as increasing when income inequality between the top 1 and 0.1% percentiles is less acute. This is so because if $S1\%/S0.1\%$ is proportional to $1/0.1$, then $\frac{\log(S1\%/S0.1\%)}{\log(10)}$ should be equal to 1 and, if this is the case, $\left(1 - \frac{\log(S1\%/S0.1\%)}{\log(10)}\right)$ boils down to zero, and a tends to infinity. As a consequence, when a increases there is less inequality between the top 1 and the top 0.1 percentiles.

From 1983 to 1990 income inequality worsened, and improved from then up to 1993, when it started deteriorating again. With the arrival of the global financial crisis, all incomes worsened, but top 1% incomes did so even more. It is interesting to note, perhaps only coincidentally, that the Lorenz coefficient (blue line in Figure 10) follows the exact same pattern as the share of debt out of total liabilities of non-financial firms (red line in Figure 4). Both series rise from 1979 to 1982-83, then fall from that period until 1989, rise momentarily (until 1992) and fall again drastically until 2006-07, and starting in that period both series go up once again. Note that the timing of our analysis is *not* exact, it is in fact lagged one year for the Lorenz curve. If this is *not* a mere coincidence, then this would imply that *income inequality worsens when firms' capital structure tilts towards own funds*. If this were true⁹⁷, then the missing link would be Long and Malitz's model of the advantages of debt. For a rise in demand for credit above own funds would promote more productive labor-intensive investment projects, while it would avoid bubble build-ups. This would reduce income and wealth gaps because, on the one hand, with labor, wages and productivity going up, workers see an improvement in their income, and possibly also in their balance sheets. On the other hand, with *monopoly power*⁹⁸ contained by limiting the power of firms in the economy through credit rationing (when and if necessary) by enhancing at the same time the *power of the central bank to steer markets through the interest rate* (see section 2.3).

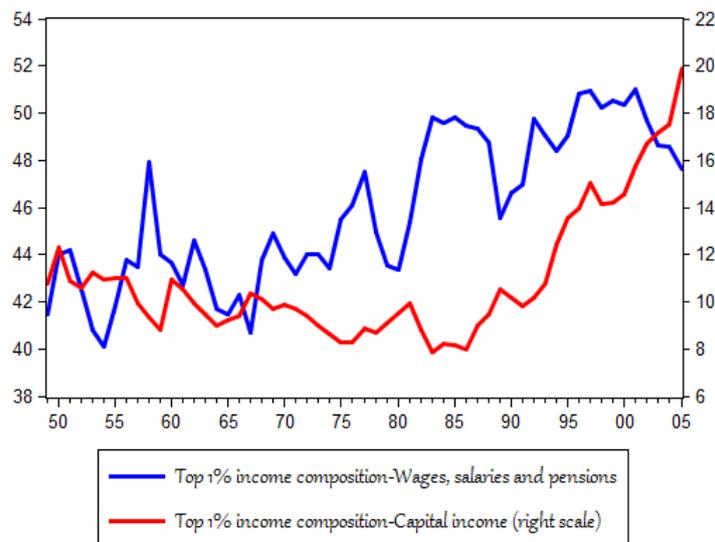


Figure 11: Top 1% income composition: wages, salaries and pensions and capital income (%). Source: Top Incomes Database.

Figure 11 shows the concentration indexes of wages, salaries and pensions (blue line) and capital income (red line). The share of wage earners' at the top increased rapidly until the 1980s and 1990s, respectively, and slightly falling since then. We interpret this as being the result of the rise of well-paid individuals at the expense of other seemingly less productive workers. In the period 1983-1989 their share diminishes strongly because, in our view, top paid workers (mostly managers) were not doing particularly well those days. This is perhaps related to conflict between managers and shareholders, as in the agency costs literature.

⁹⁷At this point, we are not able to defend this idea as solidly as we would like to. However, we do not exclude the possibility that this is an unexplored stylized fact.

⁹⁸This could even be interpreted in the light of Kalecki's (1938 [39]) *degree of monopoly*.

However, what is less surprising is the strong and persistent rise in the top 1% capital income⁹⁹ since the mid-eighties, after a three-decades and a half gradual decline¹⁰⁰. Indeed, this is one of the main results reached by Piketty in his seminal (2003 [59]) article "Income Inequality in France, 1901-1998". This thesis provides support for our claim that the interest rate is the key policy instrument, which may even be seen as a *distributive tool* that, when it increases tends to concentrate income and wealth in the hands of a few, and when it falls it tends to reduce income and wealth inequalities.

Let us now get back to the functional distribution of income, that is, the part that is explained by national accounts. With the arrival of the second oil shock came the new set of economic policies (described above) that would radically change the functional distribution of income drastically. As mentioned in the previous sections, it sufficed the unilateral decision of the Federal Reserve to quadruple the federal funds rate in order to change the configuration of financial and real markets around the world.

Following the strong increase in interest rates, wages and inflation were contained, at the same time that output stagnated and unemployment soared. The decade by decade average quarterly growth rates of these series are shown in Table 5.

<i>Period</i>	<i>Real wage</i>	<i>Disp. Income</i>	<i>Real output</i>	<i>Profit</i>	<i>CPI</i>	<i>Unempl.</i>
<i>1949-1959</i>	1.3	1.0	1.2	7.2	1.6	NA
<i>1960-1969</i>	1.7	1.4	1.4	7.4	1.0	NA
<i>1970-1979</i>	1.3	1.0	1.0	7.6	2.2	4.2
<i>1980-1989</i>	0.3	0.4	0.6	7.8	1.7	7.8
<i>1990-1999</i>	0.5	0.5	0.5	10.4	0.3	9.7
<i>2000q1-2008q2</i>	0.4	0.5	0.4	9.8	0.5	8.3
<i>2008q3-2012q4</i>	0.2	0.0	0.0	9.2	0.3	9.2

Table 5: Selected macroeconomic fundamentals, average quarterly growth rates except profit (share of GDP) and unemployment, all as %. **Profit** is self-financing, or net profits (after distribution and taxes). Source: INSEE.

The table shows that wages, output and households' disposable income grew at no less than 1% per quarter on average before 1979. Naturally, since demand was high and unions strong, prices progressed *pari passu*, except during the decade of the seventies.

These numbers may be seen as the tip of the iceberg. The underlying reasons for this drastic deterioration are mostly the result of developments in financial markets, which are summarized in Table 6. The second and third columns indicate the apparent real interest rates paid by households and firms, respectively. Columns 4 and 5 are the growth rates of the price of households' capital and of the price of equity. The last two columns show the leverage ratio of households (stock of debt / stock of non-financial assets) and a measure of own funds for non-financial firms (stock of equities issued / stock of total liabilities).

From both tables it is clear that the French economy went from a high-employment regime before the eighties to a high unemployment regime from then on. The latter has been cou-

⁹⁹This item is made up of interest income, dividends, rents, royalties, and fiduciary income. See Figure 3 in Atkinson, Piketty and Saez (2011 [1]).

¹⁰⁰It would be interesting to extend the span of the data to include the years after the crisis. However, by the time of downloading the database, these were not available.

<i>Period</i>	<i>int. rate H</i>	<i>int. rate F</i>	$\frac{\Delta p_K^H}{p_{K-1}^H}$	$\frac{\Delta p_{E_L}^F}{p_{E_L-1}^F}$	$\frac{L_H^L}{p_K^H * K_H}$	$\frac{p_{E_L}^F * E_F^L}{p_{E_L}^F * E_F^L + L_F^L}$
1979-1984	2.7	0.0	1.7	2.2	5.8	36.9
1985-1989	1.9	0.6	1.2	3.7	12.2	57.8
1990-1994	1.5	1.1	0.1	-0.3	16.5	59.5
1995-1999	1.1	1.0	0.5	5.1	18.6	72.7
2000-2004	0.4	0.2	2.5	-1.4	16.5	79.6
2005q1-2008q2	0.3	0.0	1.9	1.2	14.2	82.0
2008q3-2012q4	0.4	0.3	0.1	-0.6	14.1	76.5

Table 6: Selected macro-financial fundamentals, quarterly averages (all as %). **int. rate H** stands for quarterly interest rate paid by households. **int. rate F** is the interest rate paid by firms. $\frac{\Delta p_K^H}{p_{K-1}^H}$ is the growth rate of the price of non-financial assets held by households. $\frac{\Delta p_{E_L}^F}{p_{E_L-1}^F}$ is the ratio price of equities issued-price of non-financial assets held by firms. $\frac{L_H^L}{p_K^H * K_H}$ is the ratio stock of debt-stock of capital. $\frac{p_{E_L}^F * E_F^L}{p_{E_L}^F * E_F^L + L_F^L}$ is the capital structure of firms from the debt side. Source: *Banque de France* and own calculations.

pled with low inflation and slim growth rates for output and wages. Thus, these real sector developments account for the *fall in income*. At the same time, the fall in the real interest rate paid by households promoted their indebtedness (see columns 2 and 6 of Table 6), which in turn encouraged their demand for houses. This demand effect can be seen in the strong quarter-to-quarter average growth rate of the price of households' capital from 1979 to 1989 (more than 1%), that is reflected in the fact that households' indebtedness ratio more than doubled from the first to the second five-year period under analysis. These developments in the financial account of households explain a large part of the *increase in expenditure* in the form of interest payments¹⁰¹.

These two effects combined (*fall in income* and *increase in expenditure*) made households' financing capacity suddenly fall from an average of 4.5% of GDP (1949-1984) to virtually zero in 1987. This sudden strong negative shock was symmetrical to the even stronger rise in firms' balance. Prior to 1984, their financing *need* had been around 3.8% of output, whereas in 1987 they enjoyed a financing *capacity* close to 1%. This was possible thanks to two effects which contrast with the degradation in households' balance¹⁰².

Unfortunately, at least since unions' bargaining power became an important constraint in firms' decision making (say, after WWII), they have sought for innovative ways to *reduce costs* while expanding their productive capacity¹⁰³. Under the new set of policies promoting labor

¹⁰¹Even if during the eighties interest payments were diminishing as share of the stock of debt (the definition of *apparent interest rate*), the former increased considerably. For instance, these payments were roughly 10.7% of GDP before 1972, but grew considerably from the on, until they reached more than 20% at the end of the seventies. From 1980 to 1993 interests were, 28.1% of national income on average, but fell gradually until 2005 (12.7%), and climbed back up to previous levels prior to the crisis.

¹⁰²Similar arguments can be found in Medlen (2007 [51]) for the case of the United States. Thanks to Julio López for pointing this out.

¹⁰³In the first part of chapter 5 we show that this has indeed been the case, given that labor productivity increased significantly since the end of the eighties until 2008.

market flexibility in the eighties (see López, Sánchez and Assous, 2008 [47]), firms were able to "substitute workers for machines" without the obligation to pursue welfare state goals in terms of employment and compensation to workers¹⁰⁴. This explains in part the sharp rise in the unemployment rate. Therefore, by contracting wages and employment, firms enjoyed a considerable *rise in profit rates*¹⁰⁵, if only until 2000 (when the strong rise in the price of non-financial assets held by firms made it fall).

Therefore, the combined effect of *reducing costs* and *rising profits* made possible the improvement in the financing capacity of firms. This trend was further reinforced by the fact that investment was being financed by massive amounts of internal funds (issuing equity) which replaced external funds (credit issuing). This is seen in the last column of Table 6. Own funds (the stock of equities issued by non-financial firms) as share of the value of the stock of liabilities increased dramatically, going from 36.9% in 1979-84 to 82% just before the financial crisis. With strong demand for equities, in part generated by the rise in the interest rate paid by firms, financial market indicators (such as the CAC 40) created self-reinforcing optimistic trends of higher bids accompanied by higher (at least expected) financial accumulation rates.

This was no minor shift. From the mid-eighties until 2008, the average financing capacity (as proportion of GDP) of households was 3%, whereas that of firms was close to 0.2%. However, since the early nineties the corresponding series of households and firms turned more procyclical (in contrast to the countercyclical behavior before 1979 described above) with respect to each other, and countercyclical with respect to the financing capacity of the rest of the world.

Indeed, since at least 1991 an improvement in the *foreign current account* has been mirrored by a worsening of the private sector's (other than banks) current account. We interpret this *current account counter-dependency shift* as being a byproduct of globalization. When firms realized that households' financing capacity was strongly reduced, they turned to foreign sources to finance their investment, which were by then in vogue. At the same time that this shift took place, the financing capacity of firms became increasingly important, also moving in the opposite direction of that of households and firms.

Until 1975, current and investment expenditure by the government moved in opposite directions. From 1952 to 1960 public current expenditure fell from 26% of GDP to 21% (series in real terms). At the same time, however, public investment went from 2.1 to 4.4%. In 1974 both series increased considerably, as a response to the oil crisis. But, the conservative counter-response (the *Plan Barre*) reduced both in 1976. During the first three years of the Mitterrand administration (starting in 1981), public investment fell from 3 to 2.7%, whereas current expenditure increased from 23.7 to 25%. Ironically, with Chirac elected as prime minister, from 1986 to 1988 both types of expenditure increased considerably. Throughout this period, the stock of debt went from 18% of GDP in 1979 to 30% in 1988, whereas taxes collected represented

¹⁰⁴This explains in part why "[t]he 1980s marked not only a deepening interest in the role and importance of human capital, but also the origins of *technological progress*" (Sardadvar, 2010 [64], p.21, italics added). An argument which reinforces the position that the evolution of the financial sector has had a deep impact in the labor market, and which is directly linked to the capital structure of the corporate sector mentioned above, can be found in Long and Malitz (1985 [45]), who mention that "corporations which invest heavily in intangibles, such as R&D and advertising, have a tighter capital market imposed debt capacity than those investing in tangible assets" (p. 345). In our opinion, this suggests that labor-saving technology has been in vogue since at least the mid-eighties in France, and this (among other factors) has contributed in maintaining a high unemployment rate.

¹⁰⁵Thanks again to Julio López for pointing out our bad wording.

around 19% of total income¹⁰⁶. This suggests that a great part of public expenditure was being financed by bond issuing.

Starting around 1990, public current and investment spending moved pro-cyclically, first falling until 1998, then rising throughout the period when Jospin was prime minister. The decline in these two series for the first eight years of the nineties may seem to contradict the fact that both debt and taxes increased considerably as shares of output. In fact, these resources were partly used to finance in transfers to households¹⁰⁷, which are not considered either current or investment spending, and debt-servicing. In kind transfers represented 13% of GDP in 1990, but this figure rapidly increased to 14.6% in 1995. During this period interest payments by the government went from 2.1 to 3.1% of national income.

In view of the dynamism of the public debt, in 1996 Alain Juppé (right wing) created the CADES (*Caisse d'Amortissement de la Dette Sociale*, or 'social debt sinking fund') in order to renegotiate debt payments and raised taxes, which went from 22% of GDP to 25.5% in 1998. As a result of this policy, public debt went from 55% as a proportion of GDP in 1997 to 50.8% in 2001. With the automatic stabilizers quite active in 2000, public indebtedness resumed its upward trend, and reached 63.4% of GDP in 2005. Taxes, of course, did not go back to their pre-1996 level (19% of GDP).

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¹⁰⁶In fact, taxes remained at around that level until 1993, when they climbed drastically to 25% of GDP.

¹⁰⁷Note: since these transfers are *in kind*, they are not considered either as a *use* in the current account of the government, or as a *resource* in that of households (which makes up their *adjusted disposable income*).

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