Changes in taxation in Europe from 2000 to 2012: A few analytical points

By [Céline Antonin](#), Félix de Liège and [Vincent Touzé](#)

There is great diversity to Europe's tax systems, reflecting the choices of sovereign States with differentiated destinies. Since the Treaty of Rome, the Member States have steadily refused to give up national authority over taxation, with the exception of a minimum level of coordination on value-added tax (VAT). Europe now faces a real risk of a rise in non-cooperative tax strategies, with each country seeking to improve its economic performance at the expense of the others. This kind of aggressive strategy is being fuelled by two factors: on the one hand, a drive for competitiveness (fiscal devaluation), aimed at reducing the tax burden on businesses so as to improve price competitiveness; and on the other, a drive for fiscal advantage, aimed at luring the rarest factors of production to the national territory. On a macroeconomic level, it is difficult to distinguish clearly between these two factors. However, one way of understanding how the European states have improved their position may be to look at how the tax burden on business has evolved in comparison with the burden on households.

[OFCE Note no. 44](#) describes changes in the compulsory tax burden (TPO) in Europe. It is based on statistics from *Tendances de la fiscalité*, which is published jointly by Eurostat and the European Commission's Taxation and Customs Union Directorate. These statistics have the advantage of providing harmonized data on tax rates, with a breakdown of the tax base (capital, labour, consumption) and the type of paying agent (household, business, individual entrepreneur).

We study the period 2000-2012: it is of course always difficult to separate trends in taxation from cyclical adjustments, especially as budget constraints tighten. Nevertheless, the 2000-2012 period should be sufficiently long to reveal changes of a structural nature.

Based on these data, we first highlight contrasting trends in the tax burden in the European Union, which can be broken down into four phases: two phases of rises (between 2004 and 2006 and since 2010) and two phases of reductions (before 2004 and from 2006 to 2010), which is linked in particular with cyclical factors. In addition to this common dynamic, we can see non-convergent adjustments made by the European countries in the taxation of households and the taxation of business (see graph). We then focus on possible tax substitutions between payroll taxes and consumption, and between payroll taxes and employee contributions.

Over the period 2000-2012, it is difficult to talk about tax competition at a global level, even though there was a slight decrease in the average tax burden within the European Union and very specific moves in this direction by certain countries. While some countries have definitely reduced the tax burden on business (UK, Spain, Germany, Ireland, Sweden, etc.), others have increased it (Belgium, France, Italy, etc.). However, in the long-term, it would seem difficult to maintain such a high level of tax diversity. At a time when European integration is being intensified, greater tax harmonization seems more necessary than ever.

Figure. Analysis of the co-variation of changes in the tax burden on households and on business from 2000 to 2012

In GDP points
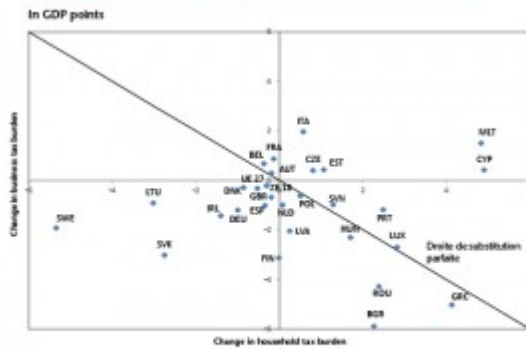
Note : The right slope of -1 called the perfect fiscal substitution describes all the covariations maintaining a constant tax burden. For the countries situated below the aforesaid perfect fiscal substitution, a fall in the tax burden can be observed (Germany, Ireland, Sweden, Hungary, etc.). For those falling above the perfect fiscal substitution, the tax burden tends to rise (France, Italy, Estonia, Cyprus, etc.).

Source : DG Taxation and Customs Union and Eurostat EU-27 (excluding Croatia).

Dealing with the ECB's triple mandate

By [Christophe Blot](), [Jérôme Creel](), [Paul Hubert]() and [Fabien Labondance]()

The financial crisis has sparked debate about the role of the central banks and monetary policy before, during and after the economic crisis. The prevailing consensus on the role of the central banks is eroding. Having price stability as the sole objective is giving way to the conception of a triple mandate that includes inflation, growth and financial stability. This is *de facto* the orientation that is being set for the ECB. We delve into this situation in one of the [articles]() of the OFCE issue entitled *Reforming Europe* [1], in which we discuss the implementation of these three objectives.

The exclusive pursuit of the goal of price stability is now insufficient to ensure macroeconomic and financial stability. [2] A new paradigm is emerging in which the central banks need to simultaneously ensure price stability, growth and financial

stability. This has been the orientation of recent institutional changes in the ECB, including its new responsibility for micro-prudential supervision. [3] Furthermore, the conduct of the euro zone's monetary policy shows that the ECB has also remained attentive to trends in growth[4]. But if the ECB is indeed pursuing a triple mandate, what then is the proper relationship between these missions?

The crucial need for coordination between the different actors in charge of monetary policy, financial regulation and fiscal policy is lacking in the current architecture. Furthermore, certain practices need to be clarified. The ECB has played the role of lender of last resort (with banks and to a lesser extent States) even though it has not specifically been assigned this role. Finally, in a new framework in which the ECB plays a greater role in determining the euro zone's macroeconomic and financial balance, we believe it is necessary to strengthen the democratic accountability of the Bank. The definition of its objectives in the Maastricht Treaty in fact gives it strong autonomy in interpretation (see in particular the discussion by Christophe Blot, here). Moreover, while the ECB regularly reports on its work to the European Parliament, the latter does not have any way to direct this [5].

Based on these observations, we discuss several proposals for coordinating the ECB's three objectives more effectively henceforth:

1 – Even without modifying the treaties in force, it is important that the heads of the ECB be more explicit about the different objectives being pursued [6]. The declared priority of price stability no longer corresponds to the practice of monetary policy: growth seems to be an essential objective, as is financial stability. More transparency would make monetary policy more credible and certainly more effective in preventing another financial and banking crisis in particular. The use of exchange rate policy [7] should not be overlooked,

as it can play a role in reducing macroeconomic imbalances within the euro zone.

2 — In the absence of such clarification, the ECB's extensive independence needs to be challenged so that it comes up to international standards in this area. Central banks rarely have independence in deciding their objectives: for example, the US Federal Reserve pursues an explicit dual mandate, while the Bank of England's actions target institutionalized inflation. An explicit triple mandate could be imposed on the ECB by the governments, with the heads of the ECB then needing to make effective tradeoffs between these objectives.

3 — The increase in the number of objectives pursued has made it more difficult to deal with tradeoffs between them. This is particularly so given that the ECB has *de facto* embarked on a policy of managing the public debt, which now exposes it to the problem of the sustainability of Europe's public finances. The ECB's mandate should therefore explicitly spell out its role as lender of last resort, a normal task of central banks, which would clarify the need for closer coordination between governments and the ECB.

4 — Rather than calling the ECB's independence completely into question, which would never win unanimity among the Member States, we call for the creation *ex nihilo* of a body to supervise the ECB. This could emanate from the European Parliament, which is responsible for discussing and analyzing the relevance of the monetary policy established with respect to the ECB's expanded objectives: price stability, growth, financial stability and the sustainability of the public finances. The ECB would then not only be invited to report on its policy — as it is already doing to Parliament and through public debate — but it could also see its objectives occasionally redefined. This "supervisory body" could for example propose quantified inflation targets or unemployment targets.

[1] *Reforming Europe*, edited by Christophe Blot, Olivier Rozenberg, Francesco Saraceno and Imola Streho, *Revue de l'OFCE*, no. 134, May 2014. This issue is available in [French](#) and [English](#) and has been the subject of a post on the OFCE [blog](#).

[2] This link is examined in **"[Assessing the Link between Price and Financial Stability](#)"** (2014), Christophe Blot, Jérôme Creel, Paul Hubert, Fabien Labondance and Francesco Saraceno, *Document de travail de l'OFCE,* 2014-2.

[3] The implementation of the banking union gives the ECB a role in financial regulation (Decision of the Council of the European Union of 15 October 2013). It is henceforth in charge of banking supervision (particularly credit institutions considered "significant") in the Single supervisory mechanism (SSM). As of autumn 2014, the ECB will be responsible for micro-prudential policy, in close cooperation with national organizations and institutions. See the article by Jean-Paul Pollin, "Beyond the banking union", in *Revue de l'OFCE, [Reforming Europe](#)* .

[4] Castro (2011), "[Can central banks' monetary policy be described by a linear (augmented) Taylor rule or by a nonlinear rule?](#)", *Journal of Financial Stability* vol.7(4), p. 228-246. This paper uses an estimation of Taylor rules between 1991:1 and 2007:12 to show that the ECB reacted significantly to inflation and to the output gap.

[5] In the United States, the mandate of the Federal Reserve is set by Congress, which then has a right of supervision and can therefore amend the Fed's articles and mandate.

[6] Beyond clarifying objectives in terms of inflation and growth, the central bank's fundamental objective is to ensure confidence in the currency.

[7] This issue is considered in part in a recent OFCE [post](#).

A minimum wage in Germany: a small step for Europe, a big one for Germany

By Odile Chagny (Ires) and Sabine Le Bayon

After several months of parliamentary debate, a minimum wage will be phased in between 2015 and 2017 in Germany. The debate led to only slight modifications in the bill introduced last April, which came out of the coalition agreement between the Social Democrats and the Christian Democrats. The minimum wage will rise in 2017 to 8.50 euros gross per hour, or about 53% of the median hourly wage. In a country that constitutionally guarantees the social partners autonomy in the determination of working conditions, this represents a major rupture. Overall, the importance of the introduction of the minimum wage lies not so much in the stimulus it will be expected to have on growth in Germany and the euro zone as in the turning point it represents in how the *value* of labour is viewed in a country that has historically tolerated the notion that this can differ depending on the status of the person (or persons) carrying it out [1].

The introduction of a statutory minimum wage in Germany represents the culmination of a long process initiated in the mid-2000s that has led to a relative consensus on the need to better protect employees from the wage dumping taking place in certain sectors and businesses. Unlike in France, where a

statutory minimum wage was established in 1951 (the "SMIG", followed by the "SMIC "), Germany has had no "interprofessional" or industry-wide minimum wage. The introduction of the minimum wage by the State, though contrary to the principle of the social partners' autonomy, is a sign that the various stakeholders explicitly recognize that the collective bargaining system is no longer able to guarantee decent working conditions for a growing number of employees, including both those not covered by collective agreements as well as those who are working in areas where the trade unions have grown so weak that the sector's minimum floor is too low.

The State's intervention thus constitutes a genuine revolution in the system of industrial relations. The intention, however, is for this to be a one-off measure. The social partners are in effect to retain a major role, for a number of reasons:

- By the end of 2014, they can negotiate sectoral agreements aimed at bringing sector minimums that are below 8.50 euros per hour up to this threshold by end 2016[2].
- Once the law is in force, it is a bipartisan commission of the social partners that will decide on changes in the minimum wage every two years. The commission will meet for the first time in 2016 and if needed the first adjustment will take place in 2017.
- Furthermore, sector-wide agreements that set working conditions (pay scales, holidays, maximum hours, etc.) will be more easily extended to all the workers in a sector (because the minimum wage law also aims at strengthening the procedures for extending collective agreements, which currently are rarely used). The outcome of collective bargaining will thus cover more employees.

The application of the statutory minimum wage will proceed in stages. In 2015, only employees not covered by a collective agreement will be affected. As for the others, either this

wage floor is already being applied, or it will be phased in through negotiations in the sector. This is, for example, the situation in the meat and slaughterhouse business, where in January 2014 the social partners signed an agreement to implement a minimum wage of 7.75 euros on 1 July 2014, which will be upgraded to 8.60 euros in October 2015. With respect to temping, an agreement in October 2013 increased the minimum wage to 8.50 euros in January 2014 in the old Länder, with provisions to introduce it in June 2016 in the new Länder.

The debate about exemptions was heated, but ultimately the minimum wage will cover all but a few people: some young people (apprentices, work-study trainees) and the long-term unemployed during the first six months after the resumption of employment. As for seasonal workers (about 300,000 jobs), who have a large presence in the agricultural sector, the 8.50 euro minimum will indeed apply, but the employer can deduct the cost of food and lodging. This should still limit wage dumping in this area, even if it will be more difficult to ensure compliance with the law.

The real issue concerns not so much the exemptions being highlighted by various parties (the DGB trade union confederation, Die Linke and the Greens are criticizing these, while some employers and conservatives think there are too few) as how the law will actually be implemented.

This is because the impact of the minimum wage law will depend firstly on how remuneration and working time are defined and what they cover, two points that have been left unanswered up to now. However, depending on whether overtime and other variable elements of remuneration are taken into account, or whether the duration of work is based on the work contracted or the actual hours worked, the law will differ greatly in its coverage and impact. In 2012, depending on the definitions used, estimates of the number of people potentially affected by the minimum wage ranged from 4.7 to 6.6 million, a difference of 40%.

Furthermore, the labour inspectorate will need to have substantial resources to monitor the application of the law, because at the moment 36% of employees earning less than 8.50 euros gross per hour do not have their work hours specified in their employment contract, or perform unpaid overtime. Checks by the labour inspectorate will therefore be crucial, especially as 70% of employees earning less than 8.50 euros per hour are in enterprises without a works council [3], which makes enforcement of the law particularly difficult. Finally, there is a risk of seeing an increase in recourse to self-employment that is paid by the task (*i.e.* without a scheduled work time) at the expense of employees on conventional contracts or those hired on mini-jobs, jobs for which there is no longer any requirement to set the hours of work and whose employees do not pay employee social security contributions or income tax.

On a more macro-economic level, and contrary to the hopes of many of Germany's European partners, the introduction of the minimum wage will have only a limited impact on domestic demand, not only because it is far from established that the legislation will actually apply everywhere, but also due to its limited impact on household income. Following an increase in their marginal tax rates and cutbacks in social benefits, the real income of households affected by the minimum wage will rise by only a quarter of the initial increase in their wages. As for the 1.3 million "*Aufstocker*", people who combine job income and a solidarity allowance for those in need and the long-term unemployed (under the Hartz IV reform), their number will fall by only 60,000 [4].

The impact on competitiveness is likely to differ widely across sectors. According to Brenke and Müller (2013), there will be a 3% increase in total payroll. With the exception of the food industry, whose competitiveness has been based on a significant level of wage dumping, and where the introduction of a minimum wage is likely to be strongly felt (except where

the law is circumvented in one way or another), industrial exporters, whose salaries are generally higher ([INSEE, 2012](#)), will not be affected much by the introduction of a minimum wage. They will however be hit indirectly, since they have outsourced a number of activities during the last decade to service enterprises that have lower costs. In many companies, high margins should nevertheless permit them to limit any rise in production costs. For labour-intensive sectors that cannot be relocated (beauty salons, taxis, etc.), prices should on the other hand increase significantly, which could limit the positive impact on the purchasing power of employees benefitting from the minimum wage.

While the impact of introducing the minimum wage should be relatively limited at the macro-economic level, in particular in terms of a recovery in the euro zone, the strong signal being sent with regard to economic policy should not be overlooked. The establishment of a minimum wage that is broad in coverage – the exceptions will ultimately be very circumscribed – and is industry-wide – the floor will apply to all sectors – reflects above all the idea that employees must be able to live from their work and that it is not necessarily up to the State to subsidize low wages in the form of social benefits so as to maintain the competitiveness of low-skilled workers in particular. As Sigmar Gabriel, the chairman of the SPD and the Minister for Economic Affairs in the new coalition government, declared to the Bundestag in February 2014, the minimum wage is important not so much for the level or the date it takes effect as for the fact that it represents a central issue for the social market economy, that "all work must be valued".

This note is being posted simultaneously with the publication of an article on this subject: [Chagny O. and S. Le Bayon, 2014 : "L'introduction d'un salaire minimum légal : genèse et portée d'une rupture majeure" [The introduction of a statutory](#)

minimum wage: genesis and significance of a major rupture],
Chronique internationale de l'IRES, no. 146, June.

---

[1] In accordance with the principle that a retiree, a student or a housewife does not necessarily need social security and works primarily for extra income.

[2] The newspaper delivery business is an exception insofar as it is the State that has mandated a gradual increase in the minimum to 8.50 euros in 2017.

[3] Works councils ensure the representation of employees in companies with at least 5 employees. It is they who determine how collective agreements are to be implemented.

[4] This raises the matter of the particular features of Germany's tax-benefit system: high marginal tax rates for the second earner in connection with the marital quotient; a marginal tax rate that is higher than in France for low earners; and, for beneficiaries of the Hartz IV solidarity allowance, a high tax rate (80% above 100 euros) of the job income exceeding the benefit. For more information, see Brenke and Müller (2013) and Bruckmeier and Wiemers (2014).


The "Ricardian effect": to be

taken with caution!

By David Ben Dahan and [Eric Heyer](#)

Is the deterioration in the public finances influencing households' consumption behaviour? [A recent INSEE study](#) tries to answer this with an econometric estimate of the determinants of the savings rates using yearly data from 1971 to 2011. Based on the results of the study, the authors attribute recent changes in the French households' rate of consumption to fiscal policy and the state of the public finances. Their model thus concludes that there is a significant "Ricardian" effect: having noted the worsening state of the public finances during the crisis, households are anticipating future tax hikes, leading them to up their savings during the recent period. Note that this effect is only temporary: the results of the INSEE's econometrics indicate that while this has reined in consumer spending in the short term, the effect will fade quickly and disappear in the long term. Households are therefore "Ricardian" … but only in the short term!

This oxymoron may be due to the fact that the standard determinants of consumption, *i.e.* inflation, interest rates and the unemployment rate, do not have any effect over the period studied by the INSEE. Hence for the INSEE, French households are forming rational short-term expectations, but without building up any "precautionary savings" against the risks associated with a deterioration in the labour market. However, in a recession, since a deterioration in the public finances goes hand in hand with a consequent rise in unemployment, the "Ricardian effect" and "precautionary savings" are in competition, making it difficult to distinguish them (Figure 1).

Figure 1. Change in the savings rate, the public deficit and the unemployment rate between 2008 and 2011

Source: INSEE.
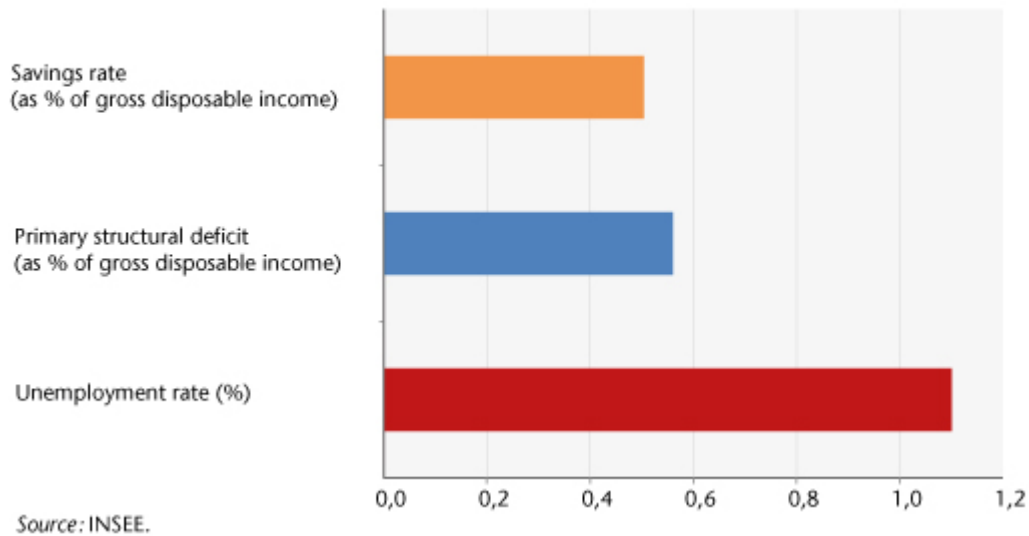
It should be noted in this regard that the stability of the parameters estimated by the INSEE is not guaranteed over the period 1970-2011: the non-significance of the unemployment rate is resolved once the estimation period begins later, after 1975, and this variable becomes highly significant from 1978. This is why we have reproduced the INSEE's analysis by starting the estimate in 1978. The results from modelling the rate of household consumption using an error correction model (ECM), based on three different specifications presented in Table 1, can be summarized as follows:

1. As with the INSEE's results, there is no significant "Ricardian effect" in the long term over the period 1978-2011. In the short term, this effect is marginally significant (at 10% in equation 1);
2. When we integrate the unemployment rate into the analysis, the effect is significant in the short and long term (equations 2 and 3);
3. When placed in parallel with precautionary savings, the "Ricardian effect" loses its short-term explanatory power (equation 2).

Table1. Summary of the results of estimates of the determinants of the household consumption rate

Périod:1978-011

	Equation 1	Equation 2	Equation 3
Long-term effect			
Adjustment coefficient	-0,003*** (-5,18)	-0,004*** (-5,37)	-0,004*** (-6,66)
Precautionary savings		Yes	Yes
Unemployment rate (%)		-0,98*** (-3,32)	-0,78*** (-3,67)
Ricardian effect		Non	
Structural primary public balance (% GDI)		0,16 (0,91)	
Short-term dynamic			
Precautionary savings		Yes	Yes
Unemployment rate (%)		-0,04** (-2,04)	-0,05*** (-3,37)
Ricardian effect	Oui	No	
Structural primary public balance (% GDI)	0,12* (1,94)	-0,02** (-2,47)	
Statistical diagnosis			
R²	0,98	0,98	0,99
SSR	0,0005	0,0004	0,0003
SSE	0,005	0,0045	0,0038
LM	0,018 (p>0,98)	0,32 (p>0,73)	0,55 (p>0,58)
Jarque-Berra	0,70 (p>0,70)	1,06 (p>0,59)	1,19 (p>0,55)
Arch	0,14 (p>0,71)	0,66 (p>0,42)	0,11 (p>0,73)

Notes:
The household consumption rate is the ratio between household consumption and the household's gross disposable income (GDI).
***, **, * signify that the coefficients are significant at respectively 1%, 5% and 10%.
Student's t is given in parenthesis.
The short-term dynamic is not reproduced in full in the table. Only the "Ricardian effects" and the "precautionary savings" are reproduced here.
The three specifications have satisfactory statistical properties. The LM tests lead to the rejection of the hypothesis of autocorrelation of the residues of the equation. These residues are homoscedastic with respect to the White test and the ARCH test. The functional form of the equation is validated by the Reset test. Finally, according to the Jarque-Bera test, the residues of the equation follow a normal law

Our estimates show that the increase in the deficits is not leading to a reduction in consumption and that the increase in the savings rate observed between 2008 and 2011 can be explained by "precautionary savings" due to the dramatic worsening in the job market.

This result also confirms the analysis made in other OFCE studies concerning the importance of the multipliers during economic downturns.

Increased longevity and social security reform: questioning the optimality of individual accounts when education matters

par Gilles Le Garrec

In 1950, life expectancy at birth in Western Europe was 68 years. It is now 80 years and should reach 85 by 2050. The downside of this trend is the serious threat that is hanging over the financing of our public retirement systems. Financed on a pay-as-you-go (PAYG) basis, *i.e.* pension benefits are paid through contributions of contemporary workers, the systems must cope with an increasingly large number of pensioners compared to the number of contributors. For example, leaving the average age of retirement unchanged in France would lead to a ratio of pensioners to workers (the dependency ratio) of 70.1% in 2040, whereas this ratio was 35.8% in 1990. Changes are unavoidable. Maintaining the current level of benefits within the same system in the near future requires to increase either the contribution rate or the length of contribution (by delaying the age of retirement).

This financing problem calls into question the role of PAYG retirement systems in our societies. For instance, by evaluating the real pre-tax return on non-financial corporate capital at 9.3% and the growth rate over the same period (1960 to 1995) at 2.6%, Feldstein[1] unequivocally advocates the

privatization of retirement systems and a switch to fully funded systems. He assesses the potential present-value gain at nearly $20 trillion for the United States. However, beside the change in the nature of the risk,[2] replacing conventional PAYG systems by financial – or funded – defined contribution (FDC) systems would certainly involve prohibitive social and political costs because one generation will have to pay twice. Implementing such a reform in Western democracies thus appears difficult. For that reason, in recent years a large focus has been put on non-financial – or notional – defined contribution (NDC) systems as legislated in Sweden in 1994. NDC systems are PAYG systems that mimic FDC systems. Individual contributions are noted on individual accounts. Accounts are credited with a rate of return that reflects demographic and productivity changes. Obviously, replacing conventional PAYG systems by NDC systems does not address the main concern of Feldstein, that is, the low return associated with the PAYG financing method. However, supporters of NDC systems claim that conventional systems, by linking pension benefits only partially to contributions, distort individual behaviours, inducing reduced work efforts or earlier retirements. In addition, they claim that only an explicit defined contribution system will be able to stabilize contributions in spite of aging populations.

Looking at the empirical facts, the supposed inefficiency of conventional retirement systems must be reconsidered. Firstly, even if their pension benefits are linked to partial earnings history, most conventional systems are close to actuarial fairness[3] as NDC systems because high-income earners live longer and have steeper age-earnings profiles. Secondly, stabilizing contributions can be achieved similarly within the scope of more conventional defined benefit systems, as seen in the "point system" in France or in Germany. In that case, the unit of pension rights is earnings points (not euros) and can

be adjusted according to demographic and productivity changes, as in an NDC system. Cleverly designed conventional retirement systems can often do the same job as NDC systems. Finally, empirical findings from Sala-i-Martin[4] and Zhang and Zhang[5] tend to support a positive impact of retirement systems on economic growth through the human capital channel.

To explain the positive link between PAYG retirement systems and economic growth that is suggested by the empirical findings, previous authors have then focused on the human capital channel, and more particularly on parental altruism. In this strand of the literature, PAYG retirement systems result in higher economic growth because they provide an incentive for altruistic parents to invest more in their children's education, even if investment per child remains insufficient to be socially optimal. In addition, they also provide an incentive for parents to have fewer children. In that context, when private behaviour is not observable, Cigno, Luporini and Pettini[6] show that a second-best policy would be to provide parents with subsidies linked to the number of children they have and their future capacity to pay taxes. To that end, Cigno[7] suggests that unconventional children-related pension systems be added to conventional retirement systems so as to allow individuals to earn a pension by raising children and by investing in their human capital. Introducing such an unconventional system could stimulate both fertility and economic growth. In France, the 10% bonus on pension benefits for parents of three children or more is such a pension-based fertility subsidy. However, for both reasons of economy and equity[8], these subsidies are taxed since the reform of 2013, with the risk of lowering the fertility incentives. This latter reform will imply more profound changes as from 2020 proportional subsidies will be replaced with payments only given to women on a per-child basis (the first child inclusive).

Beyond the impact of PAYG systems on parents' behavior,

results have first appeared mixed when considering people investment in their own education. On the one hand, Kemnitz and Wigger[9] and Le Garrec[10] have shown that conventional retirement systems provide an incentive for people to be trained longer because training results in steeper age-earnings profiles. On the other hand, Docquier and Paddison[11] have shown that in reducing the actualized return to education conventional retirement systems dissuade less able people from investing in their education. By embedding both channels, Le Garrec[12] shows that the positive impact dominates the negative one so that the average length of training and then economic growth was increased with conventional retirement systems, at least for low contribution rates. In the spirit of Cigno, this result suggests that a desirable feature of any retirement system would be to subsidize people who invest in their own education by linking pension benefits to the best — or last — years' average annual earnings, not to full lifetime average earnings as in NDC systems. From that perspective, the Balladur reform of 1993 inFrance went in the wrong direction. Indeed, in the private sector earnings-related benefits were linked to the ten best years before the reform, then gradually to the 25 best years after.

Starting from the empirically supported assumption that conventional retirement systems are close to actuarial fairness and yield more economic growth, it is then not straightforward to determine whether the introduction of individual accounts and the stabilization of contributions are desirable objectives. To analyze this issue and the relevancy of the switch from conventional unfunded public pension systems to notional systems we have extended in a recent article[13] the social security-growth literature in two directions. First, following Le Garrec (2012), we consider investment in human capital through both the proportion of

individuals who decide to invest and the time they invest. With more general specifications, we can provide explicit and general conditions so that the positive effect associated with the lengthening of training may be dominated by the negative effect, *i.e.* the decrease in the proportion of educated individuals. We then show that economic growth may exhibit an inverse U-shaped pattern with respect to the size of an actuarially fair retirement system in which pensions are linked to the best — or last — years' average annual earnings, while an NDC system has no impact on economic growth. Second, we consider the aging process, not by assuming decreased fertility as it is usually done in the literature, but through increased longevity. This has important consequences. Indeed, as increased longevity raises the value of investments that pay over time, it generates stronger incentives for people to invest in their education[14]. Therefore, social security interacts with longevity in determining the individual level of investment in education. We then show that increased longevity may raise the size of the conventional retirement system rate that maximizes economic growth.

For policy-making, the message in Le Garrec (2014) is clear: increased longevity should be associated with an increase in the size of the existing conventional retirement systems, not with a switch towards NDC systems. However, there is no guarantee that the political process leads to the optimal size. According to Browning[15], there even are good reasons to think that the political process leads to a PAYG size exceeding the growth-maximizing level. Indeed, he showed that workers tend to increase their support for the PAYG retirement system as they approach retirement. Consequently, considering that the pivotal voter is middle-aged worker, by definition closer to retirement than a young worker, this could strengthen support for a PAYG size that exceeds the growth-maximizing (or the welfare-maximizing) level. Does this mean that in practice an NDC system is preferable to a conventional system? Not necessarily. Indeed, an assessment that the

conventional PAYG size exceeds the growth-maximizing level does not necessarily mean that an NDC system would allow greater economic growth. Quite the opposite, if we give credence to the empirical results reported by Sala-i-Martin (1996) and Zhang and Zhang (2004), economic growth would be slowed down when switching to an NDC system.

Starting then from a situation where conventional PAYG systems yield more economic growth, what may happen with increased longevity. Firstly, as the pivotal voter approaches retirement, it is likely that the PAYG size supported by a majority will increase. Two configurations may then occur. If the effective PAYG size increases less or only slightly more than the growth-maximizing level, the superiority of a conventional system over an NDC system may be preserved. In that case, a switch towards NDC systems will not be optimal. By contrast, if the effective PAYG size increases significantly more than the growth-maximizing level, conventional retirement systems may become harmful for economic growth. In that case, as suggested by Belan, Michel and Pestieau[16], a Pareto-improving transition towards a fully funded system may exist if it results in a significant increase in economic growth. More likely, if such a transition does not exist, a switch to NDC systems can then be considered as a desirable policy for increasing economic growth and social welfare.

In Le Garrec (2014), all the solutions coping with increased longevity have been considered while keeping the calculation of pension benefits actuarially fair. If the main problem of existing retirement systems is that they are too large, another solution would be to make the system more progressive. Indeed, as highlighted by Koethenbuerger, Poutvaara and Profeta[17], the size of the retirement system chosen by the median voter tends to decrease as the link between contributions and benefits is loosened. It is a fact that

progressive systems appear smaller than actuarially fair systems. However, as argued by Le Garrec[18], more progressivity also leads to fewer incentives for people to invest in their education. At this stage, the impact of introducing more progressivity on economic growth appears uncertain, unless it also strengthens majority support for public education funding, as argued by Kaganovich and Meier[19]. From that perspective, incorporating public education in the analysis appears to be a promising avenue for further research.

---

[1] "The missing piece in policy analysis: Social security reform", *American Economic Review*, 1996 (86-2), pp. 1-14.

[2] The risk is linked to the instability of financial markets in FDC systems while it is linked to the forecast of the correct evolution of the dependency ratio in PAYG systems. In the latter, there is also a kind of political risk as transfers go from a majority, the workers, towards a minority, the pensioners.

[3] Except in Anglo-Saxon countries where pensions are weakly related to earnings. Strictly speaking, a retirement system is said actuarially fair if its return is equal to the interest rate. Considering that the economic growth rate, which is the retirement system return, is lower than the interest rate, retirement systems could be described more properly as quasi-actuarially fair.

[4] "A Positive Theory of Social Security", *Journal of Economic Growth*, 1996 (1-2), pp 277-304.

[5] "How does social security affect economic growth? Evidence from cross-country data", *Journal of Population Economics*, 2004 (17), pp. 473-500.

[6] "Transfers to families with children as a principal-agent problem", *Journal of Public Economics*, 2003 (87), pp. 1165-1172.

[7] "How to avoid a pension crisis: a question of intelligent system design", *CESifo Economic Studies*, 2010 (56), pp. 21-37.

[8] The measure costs 5.7 billions Euros according to the Moreau report in 2013. In addition, as subsidies are proportional, they benefit more high-income earners and consequently also men.

[9] "Growth and social security: the role of human capital", *European Journal of Political Economy*, 2000 (16), pp. 673-683.

[10] "Systèmes de retraite par répartition, mode de calcul des droits à pension et croissance", *Louvain Economic Review*, 2001 (67-4), pp. 357-380.

[11] "Social security benefit rules, growth and inequality", *Journal of Macroeconomics*, 2003 (25), pp. 47-71.

[12] "Social security, income inequality and growth", *Journal of Pension Economics and Finance*, 2012 (11-1), pp. 53-70.

[13] Le Garrec G. (2014), "Increased longevity and social security reform: questioning the optimality of individual accounts when education matters", *Journal of Population Economics*, DOI:10.1007/s00148-014-0522-z.

[14] This issue is well documented in the literature. See for example Cervellati M. and Sunde U. (2005), "Human capital, life expectancy, and the process of development", *American Economic Review*, 95(5), pp. 1653-1672.

[15] "Why the social insurance budget is too large in a democracy", *Economic Inquiry*, 1975 (13), pp. 373-388.

[16] "Pareto-improving social security reform", *Geneva Risk and Insurance Review*, 1998 (23-2), pp. 119-125.

[17] "Why are more redistributive social security systems smaller? A median voter approach", *Oxford Economic Papers*, 2007 (60), pp. 275-292.

[18] "Social security, inequality and growth", WP n°2005-22, OFCE/Sciences Po, December.

[19] "Social security systems, human capital, and growth in a small open economy", *Journal of Public Economic Theory*, 2012 (14-4), pp. 573-600.

How to read the Alstom case

By [Jean-Luc Gaffard](#)

The situation of Alstom has hit the headlines since the company executives announced their intention to sell the energy branch to General Electric and to carry out a restructuring that strongly resembles a unit sale. The government reacted strongly to what it saw as a *fait accompli*, seeking another buyer, namely Siemens, with a view to creating one or more European companies in a sector considered strategic, along the lines of Airbus — before it came round to the General Electric solution, which in the meantime had improved in terms of both the amount paid for the buy-out and the arrangements for the future industrial organization. These events, important as they are, should not obscure the more general fact of ongoing deindustrialization, which is taking the form, among others, of the break-up of certain large companies, and which is resulting from inconsistencies in the governance of what French capitalism has become today.

Deindustrialization is generally attributed either to competition from countries with low wages, and thus to

excessive labour costs, or to insufficient innovative investment, and thus to a lack of non-price competitiveness. The solutions sought in terms of public policy oscillate between reducing wage costs and supporting R&D, usually with little regard to the conditions of corporate governance. The emphasis is on the functioning of both the labour markets, with the aim of making them more flexible, and the financial markets, which are considered or hoped to be efficient, without really taking into account the true nature of the company. But a firm is part of a complex network of relationships between various stakeholders, including managers, employees, bankers, customers and suppliers. These relationships are not reducible to market relations encumbered with imperfections that generate poor incentives and that need to be corrected so as to ensure greater flexibility. They are part of more or less long-term contractual commitments between the various stakeholders in a company, which are exceptions to the state of pure competition, even though they are essential to the realization of the long-term investments that bring innovation and growth. The duration of these commitments is in fact the foundation for the average performance of the companies, the structuring of the industry and ultimately the industrialization of the economy.

Alstom's troubles, following on the heels of the difficulties encountered by other firms like Pechiney and Rhône Poulenc that are no longer on the scene, reflect this organizational reality. With sales barely equal to one quarter of the figure for Siemens and one-fifth for General Electric, the size of the company and its various activities has been judged by its leaders to be largely insufficient to meet the demands of competition. With the agreement of the European Commission, the State already had to intervene back in 2004 to recapitalize the company so as to avoid bankruptcy. It then faced the obligation to hive off certain activities and cut jobs drastically. Today, the only way ahead is to carry out a new restructuring, with the hope of saving skills and jobs by

integrating them into a larger, more efficient entity while absorbing the accumulated debts. This cannot take the appearance of a final break-up that benefits one or another of the competitors who managed to develop the right strategies, far from the recommendations of those who fawned over what was once called the new economy. In this case, the beneficiary will be General Electric. This ultimate solution is taking place due to Alstom's inability to benefit in the recent or earlier period from the longer-term financial commitments that would have allowed it to implement an effective growth strategy.

This disappointment, on the heels of numerous others, reveals the inconsistency that has befallen French capitalism between the organization of its industry and of its financial system, which was criticized back in 2012 in a book by Jean-Louis Beffa (*La France doit choisir,* Paris: Le Seuil). The new financial model, inspired by the Anglo-Saxon model, no longer seems to respond to the needs of mature enterprises engaged in activities with investment needs that are substantial and long term and which are subject both to performance cycles related to fluctuations in demand and to the constraints of the innovation process. The ensuing lack of commitment was bound to lead to break-ups, but it would be wrong to equate this to an increased modularity of industrial production resulting from the introduction of new information and communication technologies and which would be valued by the financial markets, as the head of Alstom seemed to think in the late 1990s when advocating a company without factories.

Under these conditions, a recovery in production cannot take place through the invariably one-off specific interventions of the public authorities aimed more or less explicitly at creating national or European champions that are, after all, not very credible. What is needed are structural reforms to deal, not with the rules on market functioning, but with modes of governance, and in particular a revision of the way the

financial system is organized.

These observations are developed in greater depth in [“Restructurations et désindustrialisation : une histoire française”, *Note de l'OFCE*, no. 43 of 30 June 2014](#).