

The promotion of renewable energy innovation: when State intervention and competition go hand in hand

by [Lionel Nesta](#) and [Francesco Vona\[1\]](#)

In contrast with the common belief that competition demands no State intervention, innovation policy and competition complement each other. This is the main conclusion of our investigation concerning innovation in the realm of renewable energy (RE)[\[2\]](#), summarized in the [OFCE Briefing Paper, n°8, October 6, 2014](#).

By and large, innovation is the only answer to both sustaining current life standards and overcoming severe environmental concerns. This is especially true in the case of energy, where increasing resource scarcity calls for the rapid development of renewable energy sources, such as biomass, solar and wind.

The issue is: despite this considerable increase, renewable energy can still not compete with fossil fuel, the production of the latter being cheaper and its distribution more efficient. Hence without a long-term perspective, the development of renewable energy cannot take place. Public support, it is well-known, is better equipped than private parties to take such a stance. And to understand which policy design may best spur innovations in renewable energy is a key question.

Public policies aim to spur investments in green capacity and technical change and to reduce the cost of RE generation. The adoption of the Kyoto agreement on climate change mitigation too has created a consensus about certain environmental policies (i.e. emission trading schemes). Over the past 20

years, OECD countries have increasingly supported innovation in RE by diversifying the range of RE policies (see Figure 1 for selected countries).

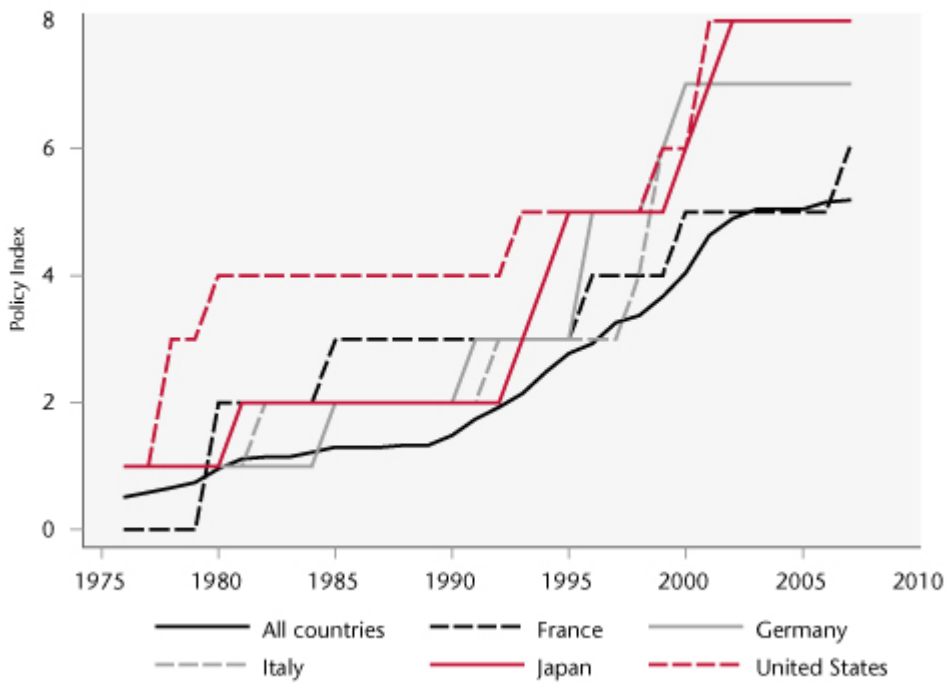
Meanwhile, liberalization has changed the working of energy markets in most OECD countries. It has increased market competition by lowering entry barriers and privatizing energy producers. We view liberalization of the energy market as positive for innovation. Radical innovation is mainly developed by newcomers. And large incumbents have little incentive to fully develop new technologies that would question their past investments in large-scale energy production.

In a context of amplified public support to RE innovation and increased liberalization of energy markets, it is important to test how the interplay between the two affects innovation in renewable energy.

We find that renewable energy policies are more effective in fostering green innovation in liberalized energy markets. We find that such policies are three times as effective in highly deregulated energy markets than in more regulated ones. In general, this complementary effect is one of the largest drivers of innovation, especially for frontier patents. This result is summarized in Figure 2 where we depict the estimated effect of RE policies on innovation as a function of the degree of market deregulation. This effect is positive only for countries with a level of regulation below average, as is the case for Germany and the United States.

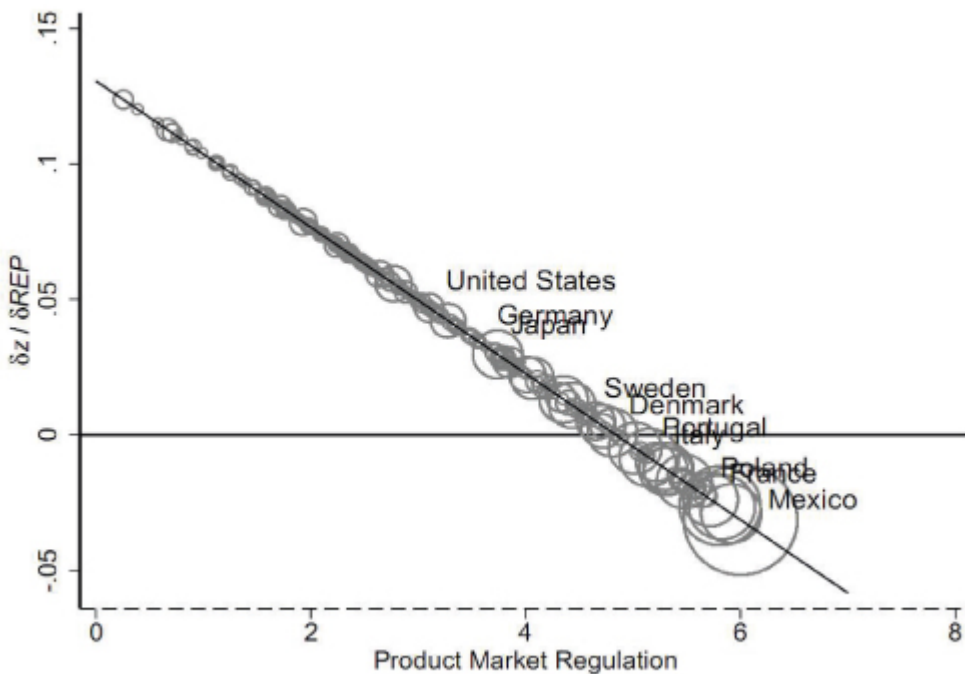
Our conclusion is that the effect of RE policies on innovation is crucially mediated by the degree of competition in the energy market. Therefore, and again, in the energy sector, in contrast with the common belief that competition demands no State intervention, innovation policy and competition complement each other.

Figure 1. Evolution of the Policy Index (REP) for 5 countries and for all countries (1976-2007)



Source: See Nesta et al. (2014).

Figure 2. Estimated marginal effect of RE policies on RE innovation



Source: Nesta et al. (2014).

[1] This research project benefited from funding from the

European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement n°320278 (RASTANEWS).

[2] See: Nesta, L., Vona, F., Nicolli, F., 2014. "Environmental Policies, Competition and Innovation in Renewable Energy," *Journal of Environmental Economics and Management*, vol. 67(3), 396-411.

The 2013 pension reform: the implicit contribution of pensioners' purchasing power

By Stéphane Hamayon and Florence Legros

Less than three years after the official retirement age in France was raised in 2010-2011, a new pension reform was passed in early 2014.

This reform is described by its promoters as "sustainable and equitable". However, only a few months after it passed, if we once again review the mid- and long-term balance of the pension system, we would have to conclude that this subject needs another look ([see our article in the *Revue de l'OFCE*, no. 137, 2014](#)). The suspected imbalance stems from a gap between the assumptions that prevailed in 2014 when the reform passed and the actual development of critical macroeconomic variables such as unemployment and productivity growth.

[Our article](#) begins with an analysis of the sensitivity of the overall balance of the pension scheme to economic variables and to the assumptions made. It shows that if the unemployment rate were to stabilize at 7.5% (the lowest rate in 30 years)

and not 4.5% as in the scenario adopted by the reform, and productivity grew at a rate of 1%, which is in line with the reasonable estimates made by Caffet Artus (2013), instead of the 1.5% adopted, then this would lead to a continuing deterioration in the pension system accounts (Table 1).

Table 1. Financing needs of the pension system for private sector employees after the 2013 reform

Billions of 2012 euros

	2010	2013	2020	2025	2030	2040	2050
Central scenario (productivity 1.5% - unemployment 4.5%)	-9,7	-6,5	-2,0	-1,4	0,8	-1,6	3,2
Low growth scenario (productivity 1.0% - unemployment 7.5%)	-9,7	-6,5	-5,0	-9,3	-20,4	-36,1	-43

Source: Calculs des auteurs.

Another variable that is examined precisely: the growth rate of productivity. Because this has an impact on wages, it plays an important role in rebalancing pension systems when the indexation of pensions and wages recorded in fictitious accounts for pension calculations (*salaires portés au compte*) is based on prices and not on wages. More specifically, high productivity would help balance the accounts, as resources would grow quickly while employment grow more slowly.

The consequence, however, is a relative impoverishment of pensioners relative to the working population, especially of older retirees for whom de-indexation will have cumulative effects.

Fiscal policy and

macroeconomic stability in an economic and monetary union: the case of the West African Economic and Monetary Union (WAEMU)

By Mamadou DIOP and Adama DIAW

The idea that fiscal policy is an effective tool of economic policy for stimulating the real economy has neither empirical backing nor unanimous support among economists. [An article published in the *Revue de l'OFCE* \(no. 137, 2014\)](#) deals with two major shortcomings in government policy in the WAEMU: delays in implementing fiscal measures and the irreversibility of certain public spending measures. The problem centers on the capacity to cancel certain expenditures when they are no longer needed to stabilize the economy. Having a reversible fiscal policy is essential these days to ensure that the public purse is sustainable over the medium term. To stabilize a country's economy using fiscal policy, it is important to be able to identify which public spending measures significantly affect economic activity, while taking into account their response time. Such is the purpose of this article: to evaluate the impact of fiscal shocks on the economic activity of WAEMU countries so as to reveal the channels through which fiscal policy is transmitted.

Does growth in the euro zone really depend on a hypothetical German fiscal stimulus?

By [Christophe Blot](#) and [Jérôme Creel](#)

The debate on economic policy in Europe was re-ignited this summer by [Mario Draghi](#) during the now traditional symposium at Jackson Hole, which brings together the world's main central bankers. Despite this, it seems that both the one side ([Wolfgang Schäuble](#), Germany's finance minister) and the other ([Christine Lagarde](#), head of the IMF) are holding to their positions: fiscal discipline plus structural reforms, or demand stimulus plus structural reforms. Although the difference can seem tenuous, the way is now open for what Ms. Lagarde called "fiscal manoeuvring room to support a European recovery". She is targeting Germany in particular, but is she really right?

In an [interview](#) with the newspaper *Les Echos*, Christine Lagarde said that Germany "very likely has the fiscal manoeuvring room necessary to support a recovery in Europe". It is clear that the euro zone continues to need growth (in second quarter 2014, GDP was still 2.4% below its pre-crisis level in first quarter 2008). Despite the interest rate cuts decided by the ECB and its ongoing programme of exceptional measures, a lack of short-term demand is still holding back the engine of European growth, mainly due to the generally tight fiscal policy being pursued across the euro zone. In today's context, support for growth through more expansionary fiscal policy is being constrained by tight budgets and by a political determination to continue to cut deficits. Fiscal constraints may be real for countries that are heavily in debt

and have lost market access, such as Greece, but they are more of an institutional nature for countries able to issue government debt at historically very low levels, such as France. For Ms. Lagarde, Germany has the manoeuvring room that makes it the only potential economic engine for powering a European recovery. A more detailed analysis of the effects of its fiscal policy – both internally and spillovers to European partners – nevertheless calls for tempering this optimism.

The mechanisms that underlie the hypothesis of Germany driving growth are fairly simple. An expansionary fiscal policy in Germany would boost the country's domestic demand, which would increase imports and create additional opportunities for companies in other countries in the euro zone. In return, however, the impact could be tempered by a slightly less expansionary monetary policy: as [Martin Wolf](#) argues, didn't Mario Draghi ensure that the ECB would do everything in its power to ensure price stability over the medium term?

In a [recent OFCE working document](#), we have tried to capture these various commercial and monetary policy effects in a dynamic model of the euro zone. The result is that a positive fiscal impulse of 1 GDP point in Germany for three consecutive years (a plan involving 27.5 billion euros per year [\[1\]](#)) would boost growth in the euro zone by 0.2 point in the first year. This impact is certainly not negligible. However, this is due solely to the stimulation that would benefit German growth and not to spillovers to Germany's European partners. Indeed, and as an example, the increase in Spain's growth would be insignificant (0.03 point of growth in the first year). The weakness of the spillover effects can be explained simply by the moderate value of Germany's fiscal multiplier [\[2\]](#). Indeed, the recent literature on multipliers suggests that they rise as the economy goes deeper into a slump. But based on the estimates of the output gap retained in our model, Germany is not in this situation, and indeed the multiplier has dropped to 0.5 according to the calibration of the multiplier effects

selected for our simulations. For an increase in German growth of 0.5 percentage points, the effect of the stimulation on the rest of the euro zone is therefore low, and depends on Germany's share of exports to Spain and the weight of Spanish exports in Spanish GDP. Ultimately, a German recovery would undoubtedly be good news for Germany, but the other euro zone countries may be disappointed, just as they undoubtedly will be from the implementation of the minimum wage, at least in the short term, as is suggested by [Odile Chagny and Sabine Le Bayon](#) in a recent post. We can also assume that in the longer term the German recovery would help to raise prices in Germany, thereby degrading competitiveness and providing an additional channel through which other countries in the euro zone could benefit from stronger growth.

And what would happen if the same level of fiscal stimulus were applied not in Germany, but rather in Spain, where the output gap is more substantial? In fact, the simulation of an equivalent fiscal shock (27.5 billion euros a year for three years, or 2.6 points of Spanish GDP) in Spain would be much more beneficial for Spain but also for the euro zone. While in the case of a German stimulus, growth in the euro zone would increase by 0.2 percentage points over the first three years, it would increase by an average of 0.5 points per year for three years in the event of a stimulus implemented in Spain. These simulations suggest that if we are to boost growth in the euro zone, it would be best to do this in the countries with the largest output gap. It is more effective to spend public funds in Spain than in Germany.

In the absence of any relaxation of the fiscal constraints on Spain, a stimulus plan funded by a European loan, whose main beneficiaries would be the countries most heavily affected by the crisis, would undoubtedly be the best solution for finally putting the euro zone on a path towards a dynamic and sustainable recovery. The French and German discussions of an investment initiative are therefore welcome. Hopefully, they

will lead to the adoption of an ambitious plan to boost growth in Europe.

Table. Impact of a fiscal expansion in Germany and in Spain

In percentage points

	Fiscal expansion in Germany			Fiscal expansion in Spain		
	German growth	Spanish growth	Euro zone growth	German growth	Spanish growth	Euro zone growth
2013	0,5	0,0	0,2	0,0	4,9	0,5
2014	0,6	0,0	0,2	0,0	5,8	0,7
2015	0,5	0,0	0,2	0,0	2,8	0,4
2016	0,0	0,0	0,0	0,0	-0,7	-0,1
2017	-0,6	0,0	-0,2	0,0	-2,6	-0,3
2018	-0,8	0,0	-0,2	0,0	-3,0	-0,3
2019	-0,7	0,0	-0,2	0,0	-2,9	-0,3

Source: IAGS model.

[1] The measure is then compensated in a strictly equivalent way so that the shock amounts to a transient fiscal shock.

[2] Recall that the fiscal multiplier reflects the impact of fiscal policy on economic activity. Thus, for one GDP point of fiscal stimulus (or respectively, tightening), the level of activity increases (respectively, decreases) by k points.

Better abilities or stronger social ties? Drivers of

social immobility across EU countries

par [Francesco Vona](#)

A high level of income inequality is commonly regarded to be more acceptable when associated with high social mobility. Empirical evidence has however shown that unequal countries are rarely able to ensure high social mobility to their citizens. On the contrary, countries that rank high in the level of inequality are also the worst in term of social mobility[\[i\]](#). The simple reason is that a given level of social immobility is amplified when rewards to individual characteristics, which are transmitted from parents to child, are larger. For instance, when the earning advantage for the high skilled is large, intergenerational inequality (that is: the correlation between parent and child incomes) increases because, on average, high skilled workers come from better family backgrounds.

Economists tend to attribute cross-country differences in social mobility to the working of the educational system and its influence on the effective skills possessed by individuals coming from different family backgrounds. In particular, several empirical studies using standardized test scores show that there exist substantial background-related differences in competences and skills at a given level of educational attainment[\[ii\]](#). Among OECD countries[\[iii\]](#), the influence of family background on test scores achievements is particularly strong in France (the second worst country after the USA in terms of intergenerational educational inequality), Germany and the UK, while it is relatively weaker in Italy and Spain. Whereas background-related differences in the effective level of skills certainly play a major role in creating persistency in socio-economic statuses, the working of labour markets is also an important, yet neglected, source of social immobility.

On the one hand, labour market institutions reduce the observed level of intergenerational inequality whereby institutions compressing wages (i.e. centralized wage bargaining, high unionization or minimum wage) are present. On the other hand, family ties constitute a labour market network that can help well-off individuals in finding good jobs and obtaining promotions.

In a recent paper (Raitano and Vona, 2014a)[\[iv\]](#), we assess the role played by labour market networks and individual skills in the transmission of socio-economic inequalities. We argue that high levels of intergenerational inequality can be due to: 1. formal educational attainment; 2. other (empirically unobservable) dimensions of human capital affected by family background, i.e. soft skills or better quality of education; 3. family and social ties affecting labour market outcomes and occupational sorting. Our main idea is to use intergenerational occupational mobility to distinguish between two types of association between family background and child earnings. A standard type emerges because, especially in top occupations, the well-off child should have a higher level of human capital (a glass ceiling effect) due to the fact that he attended top schools or inherited better soft skills. In contrast, the second type is associated with insurance for the children of the well-off ending up in bottom occupations (a parachute effect), who clearly display a low level of skills for a given level of education. To implement this idea, we use the 2005 module on intergenerational mobility of the EUSILC dataset and examine these two effects in eight EU countries characterized by different levels of intergenerational inequality and belonging to different welfare regimes. Our empirical analysis is motivated by the claim that returns to upward and downward social mobility could arguably stem from different sources. A glass ceiling of upward mobility is likely to depend on both network effects and unobservable skills that are positively correlated with family background. Conversely, it is hard to believe that the parachute effect

can be associated with better unobservable skills; hence, in this case, family networks should be of paramount importance.

By way of an example, imagine that a child is in the first tercile group (low social position) of its distribution but that his father was in the third tercile group (high social position). This individual clearly has a good background, but his relative position signals that he has a low ability. In this case, a positive association between family background and earnings (i.e., a parachute effect) would depend on the family network rather than on unobservable skills related to the child's background. Conversely, it is not easy to infer the true unobservable skills of individuals who maintain their positions and earn more than others while sharing the same occupation but coming from a worse background. Hence, the identification of the glass ceiling effect is more problematic.

We find that family ties can create a considerable earning advantage for Spanish and Italian workers [\[v\]](#). In these two countries, the high observed intergenerational inequality is mainly explained by a parachute effect for the well-off worsening their social position. In Italy, this parachute effect is particularly high: all else equal, the child of the well-off who worsens its social position earns annually 12% more than the child of the worse-off who stays in the same position. This result is consistent with a sociological view of social mobility where families play a key role both in the allocation of workers to jobs and in determining earning increases within a job [\[vi\]](#). Interestingly, this result does not hold for other immobile European countries, such as the UK and to a lesser extent France. In these cases, the earning advantage of the well-off is fully driven by a penalty for those climbing the social scale, i.e. glass ceiling effect. While this result seems consistent with the classical human capital view of intergenerational inequality (where access to elite educational institutions is highly dependent on family

background), our study cannot discriminate between the two explanations because a glass ceiling at the top could also be engendered by social networks. However, since the glass ceiling effect is widespread across all countries, including more equal ones (i.e. Germany, Finland, Ireland and Denmark), this effect is most likely due to unavoidable features either of the educational system or of the cumulative process of skill formation, at least in countries where students with similar socio-economic backgrounds are sorted into the same school.[\[vii\]](#)

Overall, our study suggests that intergenerational transmission of inequality strongly depends on the features of the country's labour market, especially in Mediterranean countries where family ties are extremely important in finding good jobs. Further research is required to understand which part of intergenerational inequality emerges during the educational period and which part emerges during the working career, accounting for the learning advantage possessed by high skilled individuals and thus for their steeper earning profiles. In future research[\[viii\]](#), we aim at decomposing the two effects in a more precise way for a cohort of Italian workers that we observe during their entire careers.

[\[i\]](#) See: Corak, M., 2012. How to Slide Down the 'Great Gatsby Curve': Inequality, Life Chances, and Public Policy in the United States. Center for American Progress, December. Available at <https://mileskorak.files.wordpress.com/2012/12/corakmiddleclasses.pdf>.

[\[ii\]](#) See: Fuchs T., Wößmann, L., 2007. [What accounts for international differences in student performance? A re-examination using PISA data](#), [Empirical Economics](#) 32.

[\[iii\]](#) See:
<http://www.oecd.org/centrodemexico/medios/44582910.pdf>.

[\[iv\]](#) Raitano, M., Vona, F., 2014a. [Measuring the link between intergenerational occupational mobility and earnings: evidence from eight European countries](#), Journal of Economic Inequality forthcoming.

[\[v\]](#) The results are obtained running regressions for samples of representative individuals for each country.

[\[vi\]](#) See: Ganzeboom, H., Treiman, D., 2007. Ascription and achievement in comparative perspective, Russell-Sage University Working Group on Social Inequality, University of California-Los Angeles.

[\[vii\]](#) Mixing students from different background in the same schools tends to reduce the influence of family background on individual student achievement without having negative effects for the average student achievement in the school. See: Raitano, M., Vona, F., 2013. [Peer heterogeneity, school tracking and students' performances: evidence from PISA 2006](#), [Applied Economics](#) 45.

[\[viii\]](#) Raitano, M., Vona, F., 2014b. From the Cradle to the Grave: the impact of family background on carrier path of Italian males, mimeo.

Following the decision of

France's Constitutional Council: the impossible merger of the RSA and PPE social welfare programmes

By [Henri Sterdyniak](#)

In June 2014, the government had Parliament approve a new provision for the gradual reduction of employee payroll taxes intended to boost the purchasing power of low-wage earners. Henceforth an employee on the minimum wage (SMIC) would benefit from a 3-point reduction in their contributions, representing a gain of 43 euros per month, *i.e.* a 4% increase in net income. The discount would then decline with the level of the hourly wage and terminate at 1.3 times the SMIC. On 6 August 2014, the Constitutional Council (*Conseil Constitutionnel*) barred this provision. There are three reasons to welcome its ruling.

As noted by the Constitutional Council, employee contributions fund retirement and replacement benefits, social insurance programmes that are reserved for those who have contributed and which depend on contributions. The parliamentary measure goes against the logic of a contributory system, since employees would have been able to enjoy benefits without having fully paid.^[1] The Constitutional Council emphasized the specific nature of contributory social contributions, underscoring a sound principle of our social security system. Note, however, that the Constitutional Council did not oppose the measures exempting employer social contributions for pension contributions, which are also based on a contributory logic. On the other hand, the exemptions on family or health insurance contributions are more legitimate, since these contributions do not confer individual rights. But it's never

too late to correct one's oversights.

The new measure planned by the government once again led to reducing the resources of the social security system. Exemptions from social security contributions have become the weapon of choice against unemployment, to the expense of the very purpose of the contributions: to fund social security. The State would of course have offset these exemptions, but social security would have become even more dependent on government transfers, particularly since this measure came on top of the extension, for the years 2013 and 2014 alone, of employer payroll tax cuts and transfers of resources from the taxation of family pension increases and the reduction of the family quotient.

Finally, this exemption would have introduced a new complication for pay slips, which already count twenty lines for contributions. In addition, employers must calculate digressive exemptions on employer contribution, from 28 points at the SMIC level up to 1.6 times the SMIC, and in addition the competitive employment tax credit (CICE) of 6% for wages under 2.5 times the SMIC. From 2016, family contributions will be lowered by 1.8 points for wages under 3.5 times the SMIC. Is an even more digressive system really needed, with a new ceiling of 1.3 times the SMIC?

Despite the Council decision, the government has not abandoned its goal. Thus, in an article in *Le Monde* dated 21 August 2014, President François Hollande announced a reform "that will merge the *Prime pour l'emploi* (PPE) and the *Revenu de solidarité active* (RSA) to promote the return to work and improve the situation of precarious workers". Would a reform like this fulfill the President's objectives? To answer this question it is useful to review the existing arrangements.

The current situation

France has set up a particularly complicated system that aims

at two somewhat contradictory goals: to help poor families and to encourage unskilled workers to find jobs.

Aid to the poorest households includes the *Revenu de solidarité active* (RSA – a family-based income supplement for the working poor), the *Prime pour l'emploi* (PPE – an individual in-work tax credit to promote employment), housing benefit (a family-based allowance) and means-tested family benefits (family income supplement, allowance for school). Despite the efforts of Martin Hirsch, the RSA's promoter, it does not include the PPE and housing benefit. It consists of a basic allowance: the base RSA (*RSA socle* – a minimum income that depends on family composition), which is reduced by 38 euros per 100 euros of earned income. The RSA is paid monthly on the basis of a quarterly income statement. As for the PPE, it is paid automatically on the basis of the income tax return, with a one year lag. The RSA is deducted from the PPE, meaning that a household that does not ask for the RSA automatically gets the PPE.

Three mechanisms are specifically designed to encourage low-wage workers to find jobs: exemptions from employer contributions, which reduce the cost of labor at the SMIC level; and the PPE and the RSA, which increase the gain from employment for unskilled workers.

A single person paid the SMIC is entitled to the PPE, but not the RSA (Table 1). It costs the company 1,671 euros (for 35 hours); the person's salary incurs 540 euros in unemployment and retirement contributions, representing deferred wages; the person receives a net transfer of 140 euros (PPE + housing benefit – CSG-CRDS [CSG wealth tax and CRDS debt contribution] – national health insurance and family contributions); their disposable income thus comes to 1,271 euros. There is therefore no net tax burden; their health insurance is offered. The exemptions of employer contributions are higher than the non-contributory contributions. By making use of all the existing schemes, it is possible to dissociate the living

standard accorded to workers on the SMIC from the cost of their work.

On the other hand, a single-earner family (Table 2) benefits from the RSA so long as the household income does not exceed 1.65 times the SMIC (Table 2). The RSA increases the incomes of the poorest households: it increases the gains from employment for the first earner, but slightly reduces those of the second (Table 3). The PPE benefits dual-earner families that are above the poverty line (defined as 60% of the median income).

Table 1. Formation of the monthly income of an unmarried employee earning the SMIC (July 2014)

Wages (gross)	1,445 euros	
	Employee	Employer
CSG-CRDS	114 (7.86%)	
Health insurance-family charges		294 (20.33%)
Retirement-unemployment charges	203 (14.05%)	337 (23.33%)
Low income exemption		-405 (28%)
Net wages	1,128	
Total wage cost (or super-gross)		1,671
Income tax (IR)	0	
PPE supplement	79	
Housing benefit (AL*)	64	
Disposable income	1,271	
Net tax	-140	
Contributory charges	540	
Rate of taxation	-12.4%	

* The rent is assumed to be 450 euros. The median income (MI) in 2014 can be estimated at 1642 euros per consumption unit (CU) – the SMIC provides 77.4% of the median income.

Source: URSSAF data, author's calculations.

Table 2. Couple with two children (2.1 consumption units – CU)

	RSA	Single-earner household			Dual-earner household	
		0.5 SMIC	SMIC	1.5 SMIC	1.5*SMIC	2*SMIC
Net wage	0	564	1,128	1,692	1,692	2,255
RSA	900	543	343	128	–	–
PPE	–	–	–	–	158	164
AF/ARS	63	129+63	129+63	129+63	129+63	129+63
Housing (AL*)	483	483	353	182	185	
Total	1,446	1,782	2,016	2,194	2,225	2,611
% MI per CU	41.9	51.7	58.4	63.6	64.6	75.7
PPE**			92	13		
Total**			1 765	2 079		
% MI per CU			51.1	60.3		

* The rent is assumed to be 600 euros. The children are aged 7 to 12. MI = median income; CU = consumption unit.

** If the household does not demand the RSA activité supplement.

Sources: CAF, author's calculations.

Table 3. Gain from becoming employed. Couple with two children

	Recourse to RSA	Without recourse to RSA-activité
First working age		
RSA up to 0.5 SMIC	336 (60%)	–
0.5 SMIC up to SMIC	234 (41%)	–
RSA up to SMIC	570 (50%)	319 (28%)
SMIC up to 1.5 SMIC	178 (32%)	314 (56%)
Second working age. First working age earning SMIC		
Inactif up to 0.5 SMIC	201 (36%)	462 (82%)
Inactif up to 1 SMIC	595 (53%)	846 (75%)

Source: Author's calculations.

The limits of the existing system

– *The reduction of employer contributions:* The PPE and RSA create a class of poorly paid employees whose salary increases are very costly for the employer and not very profitable for the employee. A 10% wage hike for a worker on the SMIC (145 euros) costs the company 242 euros and brings the employee 53 euros. Companies are encouraged to create specific unskilled jobs, with no prospects for progress for the employee, who is stuck in a low-wage trap. The reduction in charges on low wages does not promote the employment of skilled workers, who are also experiencing some unemployment. Not do the jobs created match up with the increasing qualifications of young people. The consistency of the system as a whole therefore

needs to be reviewed. However, the persistence of a large mass of unskilled workers and the desire not to lower the living standards of the working poor currently make it hard to take the risk of eliminating the existing mechanisms.

– *The calculation of the PPE is complicated:* It is paid only after a year's delay, meaning that the incentive effect is probably very small. This supplement benefits employees above the poverty line rather than the poorest families. At the same time, eliminating it would decrease the living standard of those on the SMIC by 6%, which is not an option.

– *The rate of non-take-up of the RSA-activité is very high* (about 68%) [\[21\]](#). Low-wage workers refuse to be subjected to ongoing monitoring just to receive a relatively small amount of benefit. Given some stigmatization of those receiving the RSA, these workers do not want to be confused with people receiving the base RSA (*RSA-socle*).

– *The RSA provides a benefit of around 110 euros per child for families with 1 or 2 children* receiving the minimum wage, a benefit that fills a gap in our system, which was not very generous for families of the working poor. But this benefit is not paid to unemployed families. This 110 euro allocation should be paid in the form of a family supplement to all poor families with 1 or 2 children (families with 3 or more children already have a family income supplement and more generous benefits) regardless of the source of income.

– *The RSA is not paid to people under age 25*, even though this age group has particular difficulty finding jobs.

What is to be done?

As France has such a large number of social benefits and charges, it is possible to target the measure precisely depending on the objective. Several measures can be envisaged:

Increase family benefits

If the goal is to increase the purchasing power of poor families, the easiest way to do this is to significantly increase family and housing benefits. Instead, the government has decided to suspend their indexation in 2014 or 2015, inflicting a loss of purchasing power, which fortunately will be limited by low inflation. But the prevailing view today is that it is essential to encourage employment, and thus to increase net wages rather than benefits.

Lower income tax

As poor families do not pay income tax, lowering it will not affect them.

Make the CSG wealth tax progressive

As shown in Table 1, a minimum wage worker pays 114 euros in CSG-CRDS and receives 79 euros in PPE. Wouldn't it be possible to offset the removal of the PPE by making the CSG progressive, which would exempt workers on the SMIC and increase the wages they receive each month? The Constitutional Council rightly considers that any progressive tax must be family based and take into account all the family income. A genuinely progressive CSG is thus virtually impossible to implement, as employers and financial institutions would need to know the marital status of their employees and customers and all of their income, making everyone repeat the work of the tax authorities. This would only make sense in the context of a CSG-income tax merger, which is not feasible in the short term.

Furthermore, only limited progressivity would be feasible. Each person would be entitled to an exemption of around 1,445 euros per month on the amount of income subject to the CSG-CRDS; a spouse without their own resources could transfer their exemption to their partner; dependent children would be eligible for a half exemption. In return, the PPE would be eliminated; pensioners and the unemployed could be subject to

the same CSG as employees. But this exemption would have a huge cost, and in return the rate of the CSG would need to rise to 15% on income above the exemption. This possibility thus must be abandoned.

The merger of the PPE and RSA

The fusion of the PPE and RSA is the path proposed by the President of the Republic. But the devil is in the details, in how to fashion the merger.

In 2013, the report of MP Christopher Sirugue proposed a reform that would create an activity bonus (*Prime d'activité*) to replace the RSA-activité and the PPE (see the critical analysis of Guillaume Allègre, [Faut-il remplacer le RSA-activité et la PPE par une Prime d'activité? Réflexions autour du rapport Sirugue, 2013](#)). However, as the base RSA would continue to exist, families with very low wages would need to seek two benefits – the base RSA and the *Prime d'activité* – confronting them with a complicated system. The benefit schedule for *Prime d'activité* set out in the Sirugue report was arbitrary, with slopes and a peak at 0.7 SMIC that had no justification. The resulting system was more complicated and more arbitrary than the RSA, and did not represent any major improvement over the existing system. The proposed measure was costly for single-income families (some lost 10% of their income). The risk was that the *Prime d'activité* would suffer from the same lack of take-up as the PPE and that some families would lose the PPE without wanting to use the *Prime d'activité* [3].

A merger that would result in a family-based benefit paid by France's Family Allowance Fund (CAF) would run the risk of a high rate of non-take-up and would generate losers among dual-earner households with children. A merger that would result in an allowance paid on the pay slip would not take into account children and the spouse, and would hurt part-time workers, raising questions about consistency with the base RSA.

In short, the merger is tricky to implement (if not impossible).

Increase the SMIC [\[4\]](#)

If the goal is to increase the living standard of low-wage earners, the obvious measure is to raise the level of the SMIC. An increase of about 10% would make it possible to eliminate the PPE and provide minimum-wage workers an increase in income equivalent to that under the measure overruled by the Constitutional Court. Assistance aimed specifically at part-time workers would be abandoned, as with the PPE, but this specific assistance is too complicated to have any incentive effect at all. An increase in net earnings is undoubtedly better.

Note, however, that an increase in the minimum wage would not provide enough support for poor families with one or two children, especially the families of the unemployed. The families of the working poor (between the base RSA and 2 times the SMIC) need specific support, by introducing a family supplement of about 80 euros for one child and 160 euros for two children.

The *RSA-activité* should be maintained, since it ensures that any activity actually results in higher disposable income, but its role would be reduced and, thanks to the extension of the family income supplement, non-take-up would have less impact on families with children.

It is also necessary to create an employment integration allowance, in the amount of the RSA, for young people seeking work, without a right to unemployment benefit, a benefit subject to pension contributions.

Nevertheless, in the current situation, where lowering labor costs is a top priority for government policy, the cost of unskilled labor cannot be increased, leaving two possible approaches.

Either compensation for employers would take place through an increase in exemptions on charges on low-wage workers (which are to rise from 28% to 34.6%), which would not introduce an additional scheme. However, the exemptions on employer contributions would focus on contributory contributions, which could arouse the ire of the Constitutional Court.

Or the increase of the SMIC would take place through a PPE listed on the pay slip: it would be explicitly recognized as a supplement, which implies that the compulsory tax burden would increase, but also that the Constitutional Court could not oppose it, with the drawback that the supplement would fall with the level of the hourly wage, thus representing an additional administrative burden for business.

It seems obvious that there are no simple solutions.

[\[1\]](#) The Constitutional Court wrote, "... a single social security system would continue under the provisions in question, to finance, for all of its stakeholders, the same benefits despite the absence of payment by nearly one-third of them of all the employee contributions conferring entitlement to the benefits paid by the system; that, therefore, the legislature has created a difference in treatment, which is not based on a difference in the situation of those insured by the same social security scheme, and which is unrelated to the purpose of employee social security contributions."

[\[2\]](#) According to P. Domingo and M. Pucci, 2012, "Le non-recours au revenu de solidarité active et ses motifs", Annex no. 1 of the *Report of the Comité national d'évaluation du Rsa*.

[\[3\]](#) The *Rapport sur la fiscalité des ménages* by François Auvigne and Dominique Lefebvre, 2014, also points out deficiencies in the project.

[\[4\]](#) This is already the strategy recommended by Allègre (2014).

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 Strehö, *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!

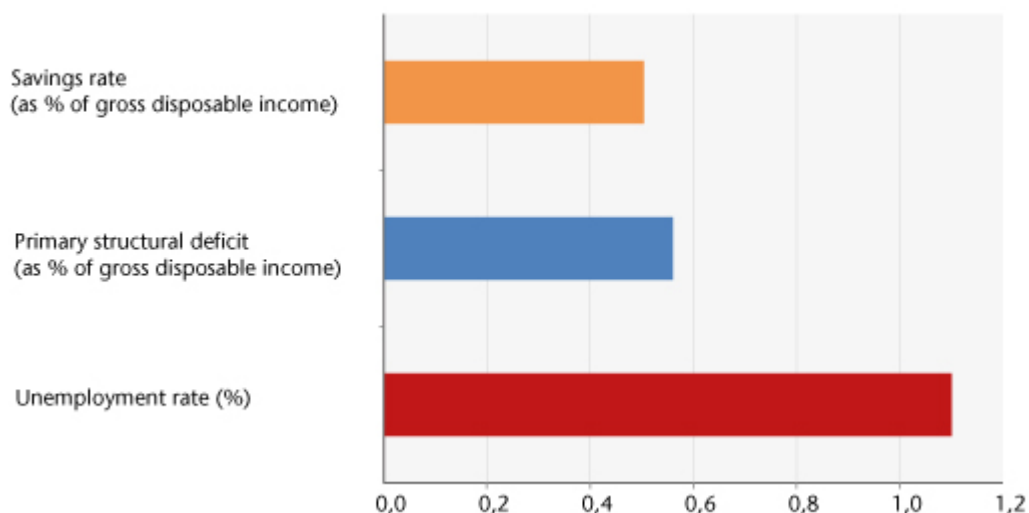
By David Ben Dahan and [Eric Heyer](#)

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			
R ²	0,98	0,98	0,99
SSR	0,0005	0,0004	0,0003
SSE	0,005	0,0045	0,0038
LM	0,018 (<i>p</i> >0,98)	0,32 (<i>p</i> >0,73)	0,55 (<i>p</i> >0,58)
Jarque-Berra	0,70 (<i>p</i> >0,70)	1,06 (<i>p</i> >0,59)	1,19 (<i>p</i> >0,55)
Arch	0,14 (<i>p</i> >0,71)	0,66 (<i>p</i> >0,42)	0,11 (<i>p</i> >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 in France 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 Koethenbueger, 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.