

Laurent Paul–Christophe Schalck:¹ Transfers to the government of public corporation pension liabilities: The French case study

Lump sum payments in compensation for the transfer to the Government of pension liabilities are one of the main categories of one-off budgetary measures that have developed in Europe over the recent years. These operations have been the most frequent in France, because of the various special employer schemes existing in the public sector. As pension systems and accounting standards are being reformed and former public companies are being privatized, adjustments seemed necessary. The paper studies the treatment of such measures in national accounts and reviews the different transactions implemented in France since 1997 and the various impacts on public finances. It assesses the risk of budgetary losses for the French government due to unexpected developments in the different parameters used for the calculation of the lump sums. Stress tests show that these risks are very limited, especially with the perspective of an increase in the contribution period that will apply to all pension schemes. Moreover, these operations were a prerequisite for a reform of the French public sector, enabling the deregulation of markets and increasing potential output in the medium term.

JEL classification: H60, M48

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1. INTRODUCTION

European countries' recourse to one-off measures has grown substantially in recent years (Besnard and Paul, 2004; Koen and von den Noord, 2005). One main category is lump sum payments received by the general government in compensation for the transfer of pension liabilities from a public company. Such transactions have been implemented in many countries (Belgium, Portugal, Austria, Greece, see Appendix A). But extensive recourse to lump sums was most prominent in France, due to the existence of a large public sector with many companies having developed special pension schemes for their employees. At the end of the 1990s, the French government started to reform these special schemes with different objectives in mind: adapting to IAS standards which require companies to make provisions for their pension liabilities, preparing for privatization in the context of the liberalization of European markets and securing the financial viability of these special schemes through an alignment or an integration with the pension schemes for civil servants and employees of the private sector.

The reform of special schemes generally took the form of a transfer of their pension liabilities by the public company to the State or Social security. The transaction brought revenue windfalls to public finances through the lump-sum paid in exchange to public administrations. The transfer of pension liabilities generates future expenditure in compensation for the income flow immediately recorded; therefore, the long-term net result for the general government sector may turn out to be nil. But even if the transaction is financially balanced on an intertemporal basis, it gives room for the government to improve temporarily its fiscal balance at crucial periods. It is not fortuitous that the two main transactions (France Telecom in 1997 and Electricité de France (EDF) and Gaz de France (GDF) in 2005) took place during years when the public deficit was in danger of exceeding the 3% of GDP reference value. In 1997, this helped France to qualify for EMU entry and, in 2005, it was crucial for putting an end to the excessive deficit in accordance with the recommendation made by the European Council. This is the reason why the European Commission considers these transactions as one-off measures in the sense that they have a temporary influence on the fiscal position and they are non-recurrent (EC, 2006a).

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The transfer of public corporation pension liabilities refers to a controversial treatment of transactions involving changes in the fiscal balance and possibly in government net worth. However, the lack of reliable statistical data concerning implicit liabilities of public government makes it difficult to assess the impact of this kind of transfer on the long-term sustainability of public finances. The paper studies French transactions in order to highlight related risks to public finances.

The paper is organized as follows: Section 2 presents the treatment in national accounts; Section 3 briefly reviews the main characteristics of the different transactions implemented in France; Section 4 describes the various impacts on public finances both immediate and in the long term; Section 5 assesses the financial risks associated with these operations using stress tests on the case of the EDF-GDF; and the final section presents the conclusions.

2. WHICH TREATMENT IN NATIONAL ACCOUNTS

The ESA 95 methodology² for lump sum payments to the government in the context of the transfer of pension liabilities gave rise to extensive debates within the Committee on Monetary, Financial and Balance of Payment Statistics (CMFB), which advises the European commission and its statistical body, Eurostat, on statistical issues. A first discussion took place in 1997 with the France Telecom transaction. As a result, the classification of the lump sum as a transfer of cash was validated by Eurostat, but no official decision was related. The issue resurfaced in 2003 with the Belgacom transaction. After difficult debates, Eurostat confirmed the methodology set up in 1997 and released two official decisions (120/2003 of 21 October 2003 and 26/2004 of 25 February 2004) clarifying the treatment in national accounts.

Corporations may set up specific pension schemes for their own staff which they manage directly. Different categories can exist and differently affect the intergenerational sharing of risks:

- A defined benefit or defined-contribution funded scheme: the employer builds up a segregated reserve for the purpose of paying pensions to its employees. This scheme allows for an optimal sharing of market and inflation risk between generations.

- An unfunded scheme: employers only make the commitment to ensure the payment of a defined level of pension benefits. This scheme aims at systematic redistribution between generations in accordance with the relative social preference weight.

When pension liabilities are transferred to the government, the company must pay a “lump sum”, which is assumed to cover the future burden of pensions. This amount should represent either the present value of the promised pension benefits for a defined-benefit unfunded or funded scheme or the market value of the corresponding assets invested on markets for a defined-contribution funded scheme. When the pension scheme was originally funded, the result of the transaction is a transformation into an unfunded scheme. This methodology applies whether the company is publicly or privately owned.

Whatever the category of the scheme, the classification in national accounts is the same. The transfer of cash is classified as capital transfer (codified D99 in ESA 95) and the implicit liabilities taken over by government are not recorded. The reason why only one leg of the transaction is recorded (the transfer of cash and not the transfer of liability) is first that ESA 95 does not record contingent assets or liabilities regardless of what sector is involved. It also stems from the fact that, on an economic basis, the real net worth of both agents has not changed because the immediate improvement in the government balance is deemed to be offset in the future by an increase in pension expenditure. Conversely, the decrease in assets held by the corporation is compensated by the decrease in its liabilities vis-à-vis future retired employees. Therefore, the transfer of pension liabilities is assumed to be broadly neutral over time. Moreover, the capital transfer is recorded at the time pension obligations are effectively transferred. When Eurostat examined the EDF-GDF operation of 2005, it confirmed this treatment although a large part of the lump sum was paid after the transfer.

The only case where a possibility of reclassification exists today is when the amount of the lump sum is obviously overvalued compared to the pension liabilities transferred i.e. the amount in excess should be recorded as a financial transaction. The Belgian statistical authorities proceeded this way with the lump sum paid by the SNCB in 2005. The decisions at the CMFB, in 1997 and 2003 as well, were adopted by a small majority and the current methodology

² ESA 95 is the European System of National and Regional Accounts since 1995. It achieved the harmonization of methodology, the precision and accuracy of the concepts, definitions, classifications and accounting rules which have to be applied in order to arrive at a consistent, reliable and comparable quantitative description of the economies of the Member States.

continues to be strongly criticized. Many statisticians, including those at Eurostat and the ECB, consider that on a pure accrual basis the lump sum should not affect the net borrowing / net lending of the government. Balancing the transaction should imply to record pension liabilities for unfunded employer schemes,³ a solution adopted in some Anglo-Saxon countries such as Australia and Canada. But this would have important consequences for many European governments with unfunded schemes for their civil servants⁴ and it seems unlikely that the issue will be raised in the near future.

3. TRANSACTIONS IMPLEMENTED IN FRANCE DURING THE RECENT PERIOD

The French pension system is a typical Bismarckian one with pay as you go schemes for the two first pillars.⁵ It is also very fragmented. In the private sector (around 70% of pension expenditure), employees are covered by a two-tier scheme. By contrast, civil servants and employees of public companies have their own single tier scheme. In 1993 and 2003, there were major reforms of pension systems that concerned the private sector and civil servant regimes, but not the special regimes still in force in the public sector companies. Instead of implementing a global reform which would face strong resistance from the trade unions,⁶ the government preferred to treat the issue of special schemes on a “case-by-case” basis with a general objective to bring them closer to – or even merging them with – the two common regimes. In that context, over the last ten years, five major transactions involving a transfer of pension liabilities to the government were implemented (France telecom 1997; EDF-GDF 2005; RATP and La Poste 2006; SNCF 2007). Basically we can split them into two categories.

Integration in the civil servant scheme

France Telecom and La Poste (the French postal company) did not originally have any special pension regime schemes, but were employing civil servants affiliated to the State civil servant pension scheme. Indeed, before shifting to a corporation status, these two entities were considered as public administrations exclusively employing civil servants benefiting from the same pension entitlements as in the other administrations. Therefore, they had to bear the same financial obligations as the State for their employees: they were supposed to guarantee on a yearly basis the equilibrium between the pensions paid and the contributions received

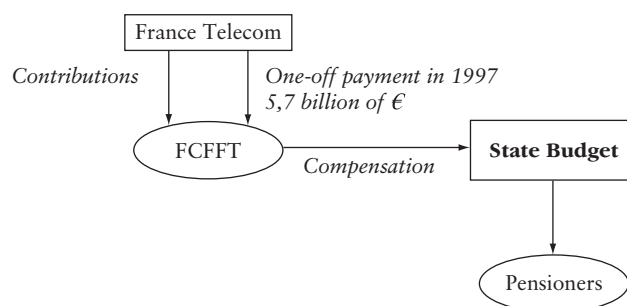
from their staff. Thus, because of the numerous advantages granted by the civil servant pension scheme compared to the general regime, the effective level of their employer contributions was much higher than for a private company, which was penalizing for competing in newly liberalized telecom and postal markets. Furthermore, the move to IAS standards and the perspective of privatization would have compelled France Telecom and La Poste to make provisions in their balance sheet for all the pension liabilities accumulated by their employees.

Regarding France Telecom, the total amount of these liabilities was estimated at 24 billion € at the end of 1996, concerning both civil servants still working in the company (150,000) and pensioners (70,000). In order to avoid a financial strain that would have damaged the solvency of the company, the Government accepted to take over all these pension rights. In return, France Telecom paid a lump sum of 5.7 billion € (0.5% of GDP in 1997) to a public body specially created for this purpose and classified in the General government sector: the “Fonds de compensation des retraites des fonctionnaires de France Telecom” (FCFFT). Every year the FCFFT refunds the State Budget for the burdens stemming from France Telecom former civil servant pensions, using the following resources (see Fig. 1):

- for pension rights accumulated up to 31 December 1996, the lump-sum-payment plus interests earned on it;
- for pension rights accumulated as from 1 January 1997, standard contributions paid by France Telecom and the civil servants still working in the company.

The FCFFT will be liquidated as soon as all the pension rights transferred have expired (since 1997 the company no longer

Figure 1
France Telecom transaction



³ An alternative proposal (Lequiller, 2004) is to record all pension liabilities of both funded and unfunded schemes in a satellite account below the line of net lending / borrowing. If the current treatment would not change, it would improve the information and make international comparisons easier.

⁴ According to the State balance sheet for 2006, total pension liabilities of civil servants have been estimated at 941 billion €, i.e. 53% of annual GDP in France.

⁵ The third pillar is not much developed in France which can be explained by the generosity of compulsory schemes.

⁶ An attempt to reform all special schemes in 1995 collapsed because of severe strikes on the railways.

recruits civil servants). Besides, France Telecom is now liable for the same level of employer contributions for its staff as other companies.

A similar transaction took place in 2006 with La Poste which still employs 200,000 civil servants, but is now facing the same evolution as France Telecom in 1997. But an important difference with France Telecom is the obvious insufficiency of the lump sum paid by the postal company (2 billion €) compared to the amount of pension liabilities transferred (70 billion € at the end of 2006). This low amount is explained by the weak financial position of the company. Thus, the balance of the transaction is guaranteed by 1) additional contributions by the postal company which will be paid until 2010, the scheduled year of the complete liberalization of the postal services; and 2) the annual contribution by the State Budget the amount of which should progressively increase, from 0.5 billion € in 2006 to 2 billion € in 2020.

Preservation of a special scheme included in the public administration sector

Originally, there was a special pension scheme directly managed by the company for its employees. Related pension liabilities are transferred to the Social security but through the creation of an ad-hoc entity which guarantees the preservation of the financial advantages of the special pension scheme compared to the normal regime.

The main example is EDF-GDF. Since 1945, the two public companies had developed a joint pension regime covering all their employees with very attractive conditions. The financial burden of the regime became unsustainable when the electricity and gas markets started being liberalized and also because of the very unfavourable evolution of the demographic ratio (there were 143,000 contributors against 149,000 pensioners in 2004). Since they had given an irrevocable guarantee for the payment of pensions to their employees, the two companies were forced to increase continuously their contributions in order to safeguard the financial soundness of the special regime.

Pursuant to the law of 9 August 2004, EDF and GDF were transformed into private companies with the perspective of a rapid opening of their capital. In the meantime, from 1 January 2005 it transferred the special retirement regime to a new entity recorded as a social security administration within the General Government. This new entity will benefit from the following resources:

- to finance the pension rights accumulated up to 31 December 2004 the amount of which was estimated at 90

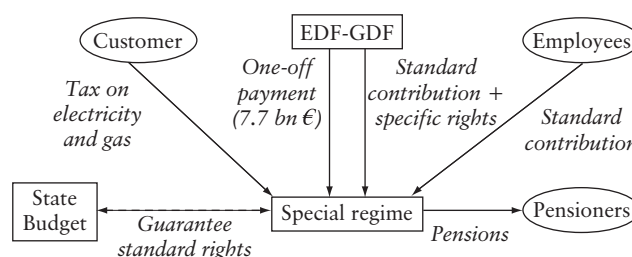
billion €: 1) Half of the burden will be borne by a lump sum of 7.7 billion € paid by EDF and GDF, of which 40% will be paid immediately and the remainder by annual payments up to 2020; 2) The rest will be financed by a tax on the transport and distribution of electricity and gas introduced on 1 January 2005 and paid by all consumers located in France;

- to finance the pension rights accumulated from 1 January 2005: standard contributions paid by EDF and GDF and their employees.

Unlike France Telecom, EDF and GDF are not entirely released from the burden of a special pension scheme. Indeed, the transfer of pension liabilities only concerns the “standard” pension rights defined as those which are allocated to the General social security regime (see Fig. 2.), and the two companies will continue to bear the burden of the additional advantages granted to their employees. The reason why a complete transfer has not been achieved is the huge cost, which would have compelled EDF and GDF to pay a much higher lump sum. Furthermore, all employees recruited after 1 January 2005 will continue to be affiliated to the special regime, which means it has no life limit. Therefore, the two companies are encouraged to restrain their recruitment in order to avoid an unsustainable accumulation of new liabilities to provision in their balance sheets.

Figure 2

EDF-GDF transaction



A similar scheme was applied to the Parisian Public Transportation Company (RATP). Due to its poor financial situation, RATP was unable to support by itself the full cost of the reform of its pension regime. Consequently, the government chose to assist the company in the transfer of pension liabilities to the Social security. Thus, the operation was neutral for the general government balance, the lump sum paid to the social security administrations being offset by a subsidy from the State budget. However there was an impact on the long-term sustainability of public liabilities with the increase of implicit liabilities (20 billion € of pension rights were transferred).

Finally, the French railway company (SNCF) reformed its special pension scheme since it had to transition to IAS accounting before the end of 2007. The French railways are heavily subsidized by the State budget (6 billion € paid in 2006 including 2.5 billion € allocated to the special pension regime). The total pension liabilities were worth 97 billion € at the end of 2006, which would have implied a very large lump sum estimated at 23 billion € by the Parliament (Carrez, 2005). But neither the company nor the State Budget was financially able to pay such an amount. Therefore, the government decided a simple transfer of the special pension scheme to the public administration sector. No lump sum has been paid and SNCF together with the State Budget continue to bear the burden of the regime. Moreover, implicit pension liabilities borne by general government increased by 97 billion €.

4. BUDGETARY IMPACTS RELATED TO THE TRANSFER OF PENSION LIABILITIES

A transfer of pension liabilities enters in the category of one-off budgetary measures producing reverse effects in the long term. It means one must consider not only the immediate flows impacting the government net lending/borrowing, but also the future flows which can only be estimated. In addition, one also has to take into account the “side effects” related to these operations which can generate other impacts on public finances.

Immediate impacts

Three kinds of impacts can be identified (see Table 1):

- The most apparent is the lump sum which directly improves the government’s net lending/borrowing. When a part of the payment is made after the transfer (e.g. EDF-

GDF), it creates a discrepancy between the actual deficit and the cash deficit which is reflected by the increase in deficit-debt adjustment (DDA). In such a case, DDA can be a useful indicator for assessing the effective impact of one-off measures (Balassone et al., 2007).

- A parallel increase in the public revenue and public expenditure to GDP ratio is also recorded with a transfer of the special pension scheme to the government sector. As public entities replace the public company for the payment of pensions and the collection of contributions, the tax burden can be increased significantly: around 0.1% of GDP each for the EDF-GDF, France Telecom and La Poste transactions. Overall, transfers of pension liabilities implemented since 1997 have supposedly increased the French tax burden by 0.3% of GDP.⁷
- Other flows indirectly linked to the transaction: this can include a change in State budget contributions and/or a change in employer contributions (e.g. La Poste), in order to balance the total value of liabilities which are transferred.

Long-term flows

The counterpart of the lump sum received is future expenditure generated by the transfer of pension liabilities. As this expenditure is spread over a long period as long as contributors turn into pensioners, they must be measured for their actuarial value. A simple way to assess the burden should be to consider the value of implicit liabilities transferred and to compare it to the total amount of implicit liabilities borne by General Government. However, official information is very fragmented. According to the Carrez report (2005), the pension liabilities borne by EDF-GDF, RATP, La Poste and SNCF amounted to 280 billion €, not

Table 1

Transfers to the French government

Company	Year of the transfer	Liabilities (€ Bn)	Capital transfer	
			€ Bn	% of GDP
France Telecom	1997	24	5.7	0.5
EDF-GDF	2005	90	8.5	0.5
RATP	2006	20	-	-
La Poste	2006	70	2.0	0.1
SNCF	2007	97	-	-

Note: Not all of transfers gave rise to a lump sum because some public companies were financially unable to pay.

Source: French Ministry of Economy and Finance.

⁷The SNCF operation should produce a similar effect in 2007.

including the 24 billion € in France telecom liabilities transferred in 1997. This would represent less than 10% of the total amount of pension liabilities of all compulsory schemes existing in France, which were estimated by the OECD at 3,300 billion € in 2002, i.e. 216% of GDP.

A complementary approach is to look at the flows of additional public expenditure currently recorded for the transactions conducted in the past years. In respect of France Telecom, the annual compensation paid by the FCFFT to the State Budget for pension rights accumulated prior to 1997 should reach 330 million € in 2005. Moreover, additional expenditure borne by the Social security in compensation for the EDF-GDF lump sum amounted to 321 million € in 2005. Thus, the increasing impact on the General government deficit (less than 0.05% of GDP) has been marginal so far.

However, the effects of immediate and long-term flows are not equivalent for public finances. The impact of the lump sum is certain whereas the impact of future expenditure is difficult to assess, as it is not recorded by the fiscal indicators usually monitored within the framework of multilateral surveillance.

5. HOW TO ASSESS THE FINANCIAL RISK OF SUCH TRANSACTIONS?

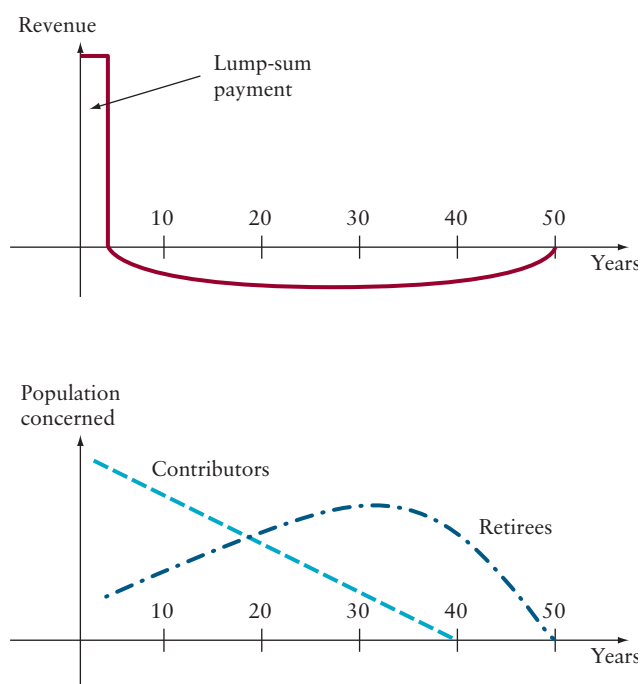
If some transactions are clearly unfavourable to public finances, because of the absence of a lump sum (SNCF, RATP) or an under-valuation of it (La Poste), the two main ones (France Telecom and EDF-GDF) are presumed to be financially neutral.

In order to check whether the supposed amount paid by the company in the form of the lump sum is sufficient to cover the pension liabilities transferred, it is necessary to look at the expenditure flows projected in the future. Their evolution over time will depend on the demographic pattern of the population concerned, defined at the moment the transaction is concluded, and which comprises both contributors and pensioners. Expenditure will increase as long as contributors turn into pensioners, the peak being reached when the flow of new retirees become lower than the death flow. Then, a regular decrease will be recorded until the natural extinction of the whole population (see Figure 3).

Only when the population concerned will be totally extinguished, which means in more than 50 years, will it be possible to know exactly the balance between the one-off payment and the discounted value of pension liabilities. For the time being, one can only assess the accuracy of the different parameters taken into account for the calculation:

Figure 3

Dynamic of transfers



- Demographic parameters set the average duration of pension payments with unchanged regulation. An unexpected lengthening of the average lifespan of the population concerned would entail an additional burden for the General Government.
- Financial parameters aim at taking into account the expected revaluation of pensions during the projection period. In the EDF-GDF transaction, it has been estimated at 2% per annum on the basis of an average inflation of 2%. Moreover, a discount rate of 2.5% per year has been applied for the 60% which will be gradually paid until 2020.
- Legal parameters: the amount of the one-off payment is based on the regulation in force at the time of the pension rights transfer. For all future developments, the rule is the following: this is the entity at the origin of the regulatory measure that will have to support its financial costs. Thus, if the State enforces for all pension systems a lengthening of the contribution time necessary to obtain a full pension, such a measure will reduce the value of implicit liabilities but there will be no reimbursement to the company for the difference. Conversely, if the company decides to grant additional benefits to its former employees, it will have to pay for them.

Available information suggests that the lump sums paid by France Telecom and EDF-GDF were fairly calculated, taking

into account the current conditions at the time when the transactions were concluded. The risks borne by the government lie in unexpected developments in the different parameters which would imply higher expenditure flows than projected: for example, an inflation surge that would imply revaluating individual pensions more than initially projected. Indeed, the financial terms used for the calculation of the lump sum are irrevocable and the government has no legal possibility to claim additional compensation if the balance of the operation proves unfavourable.

In order to assess these risks, we use numerical simulations on the EDF-GDF case taking into account the methodology implemented for the calculation of the lump sum as described by Glenat and Tourne (2006).⁸ The amount of the lump sum results from equivalence between the pensions/contributions ratios of the general scheme and the special scheme in such a way that it will cover the entire additional burden borne by the general scheme due to the transfer of liabilities. Thus, one must compare the projected financial situation of the host regime with and without the transfer on the whole period where additional costs would be transferred. This benchmark scenario is built on the basis available information: age pyramids of contributors and retirees are derived from the EDF Annual Report 2005; the average lifespan in 2005 for different ages (at birth, at 20 and at 60) is issued by the French Statistical Office (INSEE); the statutory retirement age is assumed to be 60 years; and wages and pensions are assumed to follow the inflation rate (2%). Then, this scenario is compared to three alternate scenarios in which a parameter is modified, and a fourth scenario in which the three main parameters are modified.

- Scenario 1: the demographic parameter is changed. We follow the European Commission assumption that life expectancy at birth gradually increases by around 1.5 year by 2050 (EC, 2006b).
- Scenario 2: the financial parameter is modified. We assume a permanent price shock which increases the inflation rate to 3% over the whole period instead of 2%.

- Scenario 3: the legal parameter is changed. The statutory retirement age is gradually postponed from 60 years today to 65 years. We assume a transition period of 5 years as from today: the statutory retirement is postponed every year by one year.
- Scenario 4: the demographic, financial and legal parameters are modified as in scenarios 1, 2 and 3.

Results are synthesized in Table 2. They show the impacts on the volume of implicit liabilities and on the lump sum necessary to ensure financial neutrality of the transfer of pension rights. Results show that the impact of each scenario is heterogeneous. An inflationary shock and a higher life expectancy increase implicit liabilities and lump sum payment, but the potential losses for the government are small (respectively 2% and 6%). Conversely, an increase in the contribution time produces a strong reduction in the fiscal burden. Such a reform is very likely in the coming years as the government intends to postpone the normal statutory retirement age up to 65 years in all pension regimes through an increase of the contribution time needed for obtaining a full pension. This issue confirms conclusions of Werding (2006). He showed that the series of reforms on the German statutory pension scheme, in particular on the legal framework, have substantially reduced implicit liabilities. The fourth scenario shows that, even if the inflationary shock and higher lifespan increase pension liabilities, a postponement of the statutory retirement age for obtaining full pension allows a significant reduction of risk for public finances.

6. CONCLUSIONS

Transfers of pension liabilities from public corporations affect public finances in an asymmetric way, as there is a mismatch between the immediate receipt represented by the lump sum and future expenses which are not recorded. There is a large degree of uncertainty concerning the financial balance of the operation on an intertemporal basis. This is due to the multiplicity of parameters to be taken into account and also to the relative lack of transparency surrounding

Table 2

Transfers to the French government

	Benchmark	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Implicit liabilities	44.68	47.31	45.54	36.44	39.70
Lump sum payment	7.70	8.01	7.85	6.21	6.63
Δ Lump sum payment		+0.31	+0.15	-1.49	-1.07

Source: estimates by the authors.

⁸ The methodology is detailed in Appendix B.

these transactions. However, if in theory the impact of such transactions could imply significant financial risks, in practice they seem rather limited due to the fact that the government can always modify the legal framework to prevent an unsustainable evolution of the burden of pensions.

In addition, it must be kept in mind that such operations can be part of a strategy of structural reforms. Indeed, to release France Telecom and EDF-GDF from the burden of their pension liabilities was an obligatory prerequisite for the opening-up of capital of these public companies and the deregulation of telecom and electricity and gas domestic markets. Regarding France Telecom, the State has succeeded in selling 70% of the capital of the company since 1997, raising close to 17 billion € in proceeds. Regarding GDF, the opening up of capital occurred in July 2005: 20% was sold for a net proceed of 2.5 billion €. ⁸ As these proceeds have been mainly allocated to the reduction of public debt and to the recapitalization of other public companies, they thus reduced current budgetary constraints. Such examples suggest that government must consider the following trade-off for public finances: in order to carry out the opening-up of capital successfully, public companies should present a sound financial position whereas a lump sum payment could be detrimental to the financial value of the company.

In conclusion, this kind of one-off budgetary measure undoubtedly contributed to a better functioning of the economy and this must be taken into account when assessing the pros and cons of such transactions.

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⁸ EDF was also partly privatized in 2005, but through an increase of its capital which means no receipt was collected by the government.

APPENDIX A: LUMP SUM PAYMENTS IN EUROPE

Table A1

Lump sum payments in compensation for a transfer of pension liabilities in the EU countries

Year	Country	Public company	Lump sum (% of GDP)
1994	Sweden	Telecom postal companies	0.2
1995	Denmark	Danish Telekom	0.1
1997	France	France Telecom	0.5
	Austria	Postparkasse	0.1
	Portugal	Banco Ultramarino	0.3
2003	Portugal	Postal Services	0.9
	Belgium	Belgacom	1.9
2005	France	EDF-GDF	0.5
2006	France	La Poste	0.1
	Greece	Public corporations	0.5

Source: Koen and Van den Noord (2005).

APPENDIX B: METHODOLOGY OF THE LUMP SUM PAYMENT CALCULATION

The General scheme pension (P) is calculated from the average annual wage (AAW) and contribution time in the special scheme (d) and in the general scheme (D). The pension is written as follows:

$$P = 0.5 * AAW * (d / D)$$

The lump sum should neutralize the effect of the hosting by the General scheme. It is the actual value of necessary compensations to maintain the burden ratio constant. The burden ratio is equal to the pension/contribution ratio for a given scheme. Estimating the lump sum payment implies the calculation of a reference coefficient (RC) which corresponds to the discrepancy between the burden ratio in the general scheme and the one in the special scheme:

$$RC = \left(\frac{\sum_t GSP(t)}{\sum_t GSC(t)} \right) / \left(\frac{\sum_t SSP(t)}{\sum_t SSC(t)} \right)$$

where GSP and GSC are respectively pensions and contributions in the general scheme, SSP and SSC are respectively pensions and contributions in the special scheme.

This reference coefficient allows estimating a reference pension (RP). It corresponds to the maximum pension which is paid without damaging the general scheme. It is calculated by multiplying pension of the special scheme by the reference coefficient:

$$RP = RC * SSP(t)$$

With a discount rate (i) the lump sum payment is as follows:

$$lump \ sum = \frac{\sum_t (SSP(t) - RP(t))}{(1+i)^t}$$