LA LETTRE DU CEPII

No 269 — August 2007

CENTRE D'ETUDES PROSPECTIVES ET D'INFORMATIONS INTERNATIONALES

# FINANCING SOCIAL WELFARE: THE ATTRACTION OF BROAD BASES

*The idea that a drop in social welfare contributions being offset by an increase in VAT could favour employment and competitiveness is a subject of important controversies. This not does suggest that that such a kind of measures could not be neutral. In the long run, on an unchanged budgetary basis, lowering contributions should have positive effects of promoting employment, albeit modestly. In the short run, while the policy improves competitiveness, it undermines household purchasing power. Furthermore, calculations made at a detailed sector level reveal that this switch does not benefit all sectors uniformly. Indeed, in top of the range activities that form the heart of European specialisation, the increase in competitiveness is quite limited. The trade-off is therefore the following: either to promote demand for unskilled labour over the long term or boost the competitiveness of those sectors exposed over the short term. This is a particular instance of the usual observation according to which efficiency considerations are not independent from distributive purposes.*

The French social benefit system is currently characterized by an increase in taxes. Nevertheless, wage taxes still account for 60% of total resources, so that social welfare continues to bear mostly on wages[1]. Given the ageing population, this burden may become much heavier in the near future. To avoid this drift and to stimulate corporate competitiveness, the idea of replacing the existing contributions - based on payroll – with VAT – a contribution mainly based on household final consumption - has become central to economic and political debate[2]. However, only a few experiences in this area may serve as a guideline. In Germany, only one third of the recent increase in VAT was allocated to social welfare. Similarly, the increase in the standard VAT rate in France in 1995 did not correspond to the extent of the cost of lowering contributions on low wages. The same holds true in the often-quoted1987 reform in Denmark, where the share of contributions in financing social welfare is now the lowest in Europe.

In the face of a lack of empirical literature in this area, the theoretical literature presents varying results. The aim of this note is to clarify the discussion of the effects of replacing welfare contributions with VAT and to estimate to what extent such a reform can indeed improve our competitiveness.



## Towards a larger collection basis

The expected gains from replacing welfare contributions with VAT mainly derive from the switch to a broader collection basis. In France, the basis for payroll net of employer welfare contributions is about 660 billion euros[3], whereas the basis for VAT is around 1025 billion euros. Thus, a one percentage point increase in VAT should make it possible to decrease the contribution rate by 1.5 percentage points (without taking into account the reaction of the bases to any changes in the deduction rates). Still, economic theory indicates that there may be some equivalence between VAT and welfare contributions in a closed[4] economy: this happens whenever capital income equals investment since then the expense of both deductions bear on payroll[5]. To see this point most clearly, let us first notice that welfare contributions apply

1. At present, the old age pension and workplace accident coverage are financed essentially from welfare contributions, whereas the weight of income tax and taxes allocated, mainly the CSG (General Welfare Contribution), is higher in the case of health cover and family allowances.
2. Conseil d'Orientation pour l'Emploi (2006), "Emploi et financement de la protection sociale"; Secrétariat d'État chargé de la Prospective et de l'Évaluation des Politiques publiques (2007), É. Besson, "TVA sociale", September.
3. Note that this figure includes the total civil service payroll which is not subject to the same contribution rates.
4. If we overlook the government spending.
5. See H. Sterdyniak & P. Villa (1984), "Faut-il substituer de la TVA aux cotisations sociales des employeurs ?", *Observations et diagnostics économiques*, n° 6, January; H. Sterdyniak *et al.* (1991), *Vers une fiscalité européenne*, published by CEPII and OFCE, Economica.

to the total payroll, which is the difference between added value and capital income. VAT, on the other hand, is based on the added value net of investment costs, because firms claim back most of the VAT paid on this type of expenditure[6]. It directly follows that the two deductions actually weigh on the same base if capital income and investment are equal. In the long term, the equality between capital income and investment is achieved at the golden rule of accumulation, where capital maximises per capita consumption[7]. However, the long-term balance of an economy does not necessarily correspond the golden rule. Instead, it is often advocated that saving in the current developed economies is too low with respect to the golden rule. Then, capital income is greater than investment in the long run. In this case, replacing welfare contributions with VAT results in an increase in the contribution basis[8], in both the long and short term.

This characteristic is important for understanding to what extent the social VAT can promote employment. Intuitively, a drop in wage taxes should lead to a rise in employment, net wages and the aggregate supply, and for this reason it is accompanied by a drop in consumer prices. On the other hand, an increase in VAT leads to a rise in consumer prices and reduces the aggregate demand, employment and net wages. The consequences of both movements tend therefore to cancel each other out. However, in view of the fact that the drop in the contribution rate is, at first order, greater than the increase in the VAT used to finance it, the effects of lowering the wage taxes should overcome the VAT increase. The policy would then imply, in a closed economy, an increase in employment, nominal wages, and a drop in consumer prices.

Analytical models indeed reach the conclusion of a positive effect on employment. According to M. Coupet and J-P. Renne, a 0.5 GDP percentage point drop in welfare contributions financed by VAT, would lead within 10 years to an additional 150,000 to 230,000 jobs when the reduction refers to unskilled labour; their top estimate is close to that put forward by S. Gauthier[9]. In the case of a uniform reduction, the impact on employment would be strongly dampen[10].

These are long run results, however. In the medium run, the effect also depends on the reaction of prices and wages. This is what we will now discuss within the context of an open economy.

## Competitiveness and purchasing power

Up to this point, we have not taken into account in the opening up of the economy. Domestic VAT does not concern exports, but does apply to imports and products manufactured locally. In the case of a rise in VAT being accompanied by a drop in welfare contributions, the VAT-inclusive price of domestic goods will drop compared with imported products which do not benefit from the lower labour cost; the tax reform is tantamount to a devaluation.

However, the extent of the competitiveness gain is uncertain: foreign companies do not react passively to the higher taxation on their products, and domestic companies may use the tax reform to increase their margins. For instance, S. Peltzman calculated that in the United States, only one half of the lower costs were on average passed in selling prices eight months later[11]. In France, C. Carbonnier showed that the 1995 increase in the standard VAT rate was only 60 to 90% passed on in consumer prices for both domestic and imported goods[12] after one year. There are several reasons for this. Fist, firms do not immediately adjust their prices. Moreover, when firms stand in a position of monopolistic competition, their mark-up closely depend on the sensitivity of demand to consumer prices. If the price elasticity of demand does not depend on prices, the lower contributions are entirely factored into the production costs and the increased VAT is entirely passed on in the VAT -inclusive prices. If this elasticity increases with prices, which is possibly more plausible (the greater the drop in demand is, the higher the rise of price), then production prices do not drop as much as the unit cost and a VAT increase is not fully passed on (see Box 1).

On the basis of these figures, one can provide a rough evaluation of the reaction of consumer prices to a raise in VAT by one percentage point accompanied with a reduction of the wage tax by 1.5 percentage points, in order to maintain a short-term neutral budgetary effect. The economy's production costs drop by around 0.6% as capital is not directly concerned by the measure. After a year, VAT-



6. To within a residual.
7. In the very simplified context of an economy without any technical progress or population growth.
8. Factoring in France's foreign debt merely reinforces this result.
9. S. Gauthier (2007), "Un exercice de TVA sociale", *CREST Working Document 2006-07*.
10. M. Coupet & J.P. Renne (2007), "Effet de long terme des réformes fiscales dans une maquette à plusieurs types de travailleurs", *DGTPE Working Document*, No 2007/01.
11. S. Peltzman (2000), "Prices Rise Faster than They Fall", *The Journal of Political Economy*, Vol. 108, No 3, pp. 466-502.
12. C. Carbonnier (2005), "Is Tax Shifting Asymmetric? Evidence from French VAT Reforms, 1995-2000", *PSE Working Paper,* No 2005-34.

BOX 1 – PRICE FIXING AND REACTION TO A RISE IN VAT

Companies in a position of monopolistic competition fix a production price (price excluding taxes) above the marginal production cost *Cm* that we suppose here to be constant: $P_{HT} = \frac{\varepsilon}{\varepsilon - 1} Cm$

where $\varepsilon > 1$ represents the elasticity of demand to price.

If the elasticity is constant, the entire increase in the VAT rate is passed on to the VAT-inclusive price: the VAT-exclusive price is not altered.

If the elasticity increases when the VAT-inclusive price rises (which is a more reasonable hypothesis), companies will compress their margins so that the VAT increase is not entirely reflected in the VAT-inclusive prices. The drop in the VAT-exclusive price is then equal to: $\frac{dP_{HT}}{P_{HT}} = -\frac{P_{HT}\varepsilon'}{\varepsilon(\varepsilon - 1) + P_{TTC}\varepsilon'} d\tau_{TVA}$ with: $\varepsilon' = \frac{d\varepsilon}{dP_{TTC}}$

exclusive prices should drop by 0.3%, whereas consumer prices will increase by 0.45% (the basket includes around 20% imported goods), reducing employees' purchasing power by the same percentage (Table 1).

Table 1 – Impact of replacing welfare contributions with VAT on competitiveness and consumer prices after one year*

| Impact in % of a: | Production costs of domestic companies | Competitiveness of domestic companies | | Consumer prices | |
|---|---|---|---|---|---|
| | | Increasing elasticity | Constant elasticity | Increasing elasticity | Constant elasticity |
| . 1.5 percentage point drop in welfare contribution rates | -0.6 | -0.3 | -0.6 | -0.25 | -0.5 |
| . 1 percentage point increase in VAT | - | - | - | 0.7 | 0.9 |
| Impact of the replacement | -0.6 | -0.3 | -0.6 | 0.45 | 0.4 |

*Mechanical impact when the cost of factors (gross wages and cost of capital) is not affected by the measure.
*Source*: Authors' calculations.

The same calculation applied to the measures adopted in Germany in January 2007 (three percentage point increase in the standard VAT rate, that is an average increase of two points, and a one-percentage point drop in employment-based contributions, that is three times less than required for budget neutrality) indicates, all else being equal, that inflation would increase by 1.2% – more or less what was actually observed – and competitiveness would improve by 0.2% compared with the country's European partners.

## Higher competitiveness or employment

This rough estimate overlooks sectorial effects. Any drop in contributions, even if uniform, affects the relative prices of goods because capital intensities varies according sectors. If the reductions in the wage tax depend on wage levels, these differences may become more marked in view of the fact that qualification distributions strongly differ across sectors. For example, the car industry and energy sectors are relatively intensive in terms of skilled labour and capital, and consequently they should register little benefits from a drop in welfare contributions targeting low wages. Concerning intermediate consumption, the discrepancies are less marked: in fact, each sector uses intermediate consumption and benefits, through the adjustment of its suppliers' production prices, from the drop in expenses in the other sectors.

Table 2 shows the impact of a five-point drop in employer welfare contributions onto the costs for the various activity sectors[13], the calculations having been made at level 3 of the 'NES'[14] (114 sectors). We have assumed that the drop in production costs was fully passed on in the selling prices to companies (no affect on margins for intermediate consumption); so our results indicate the maximum price drops that can be expected. The sectors in which the costs drop the least are the most capital intensive ones: energy, automotive industry and real estate. Those that derive the most advantage are construction and services. The contribution reduction focused on low wages is interesting for several services activities (retail, transport and consumer services), but it is not at all advantageous for those activities exposed to international competition. From this point of view, a choice would have to be made between fostering the relative demand for unskilled labour and strengthening the competitiveness of the sector exposed.

In the medium run, wage negotiations may reinforce these results. Within sectors whose capital intensity is the highest, which make the most use of skilled labour, the drop in employer contributions would be shared between employees and employers in the form of gross wage

Table 2 – Impact of a drop in employer welfare contributions on production costs by activity sector (%)

| *Sectors in black: sheltered in green: exposed*[a] | Uniform five percentage point drop | Equivalent drop targeting low wages | Targeting sensitivity[b] |
|---|---|---|---|
| Agriculture, forestry, fishing | -1.0 | -1.3 | 0.3 |
| Food & beverage industries | -1.4 | -1.8 | 0.4 |
| Consumer goods | -1.7 | -1.4 | -0.3 |
| Automotive industry | -1.5 | -1.2 | -0.3 |
| Capital goods | -1.8 | -1.4 | -0.4 |
| Intermediate goods | -1.8 | -1.5 | -0.3 |
| Energy | -0.8 | -0.5 | -0.3 |
| Construction | -1.8 | -2.1 | 0.3 |
| Retail | -2.3 | -2.7 | 0.4 |
| Transport | -1.9 | -2.2 | 0.3 |
| Financial activities | -2.0 | -0.8 | -1.2 |
| Real estate activities | -0.4 | -0.4 | 0 |
| Services to companies | -2.1 | -2.0 | -0.1 |
| Consumer services | -2.1 | -3.4 | 1.3 |

*Notes*: The assessment takes into account the cost of intermediate consumption, for example, the drop in the "automotive industry" sector includes the benefits from the drop in consumer prices for "services to companies". Also, the gross wage is presumed not to increase.
[a] A sector is deemed to be exposed when the percentage of exports in the production, or the percentage of imports in the domestic consumption exceeds 25%.
[b] Difference between the drop in costs in the "targeted wages" scenario and the "uniform drop" scenario. A positive number means that the sector benefits from targeting.
*Source*: INSEE and authors' calculations.

13. For a detailed presentation, See CEPII, "Impact sectoriel des allégements de charge", Appendix 9 of the Report titled "TVA sociale" submitted by É. Besson, September 2007, available on: www.cepii.fr.
14. NES: Summary Economic Nomenclature of INSEE-French Bureau of Statistics.

increases, possibly offsetting the drop in labour costs, depending on the employees' bargaining power. In other sectors, where unskilled labour is more prevalent, the cost of labour should drop by a figure close to that of the drop in employer contribution, because wages are closely linked to the minimum wage, and accordingly do not fully respond to market disequilibrium. The increase in the minimum wage in line with inflation and its contagious effect on similar wages may however lessen the expected drop in costs. Overall, we might expect that the replacement of welfare contributions with VAT would improve the relative competitiveness of those sectors that are unskilled labour intensive, and that the gain from such a reform will be limited in more capital intensive and skilled labour sectors.

## Distributive effects

The replacement of welfare contributions by VAT has no long-run effect on the relative cost of capital and labour as the drop in VAT-exclusive prices for goods reduces the cost of capital to the same extent as the cost of labour. Still, this substitution has numerous distributive effects, not only across sectors, but also across firms and households[15].

The breakdown of expenses varies according to age and household income. The increase in VAT risks only being applicable to the standard rate such that this increase would result in a change in relative prices and significant redistributive effects. In particular, pharmaceutical products, some of which are taxed at the super low rate of 2.1%, weigh five times higher in the seniors' basket than in that of the under-25s[16]. B. Salanié highlights another intergenerational redistribution[17]. The implementation of the reform actually results in taxing accumulated savings: elderly households that have accumulated savings throughout their lives will see the purchasing power of these savings diminish. Finally, the beneficiaries of replacement income (pensions, survival benefits) risk being more concerned by the increase in VAT, even if their income is generally indexed. This indexation does however limit the possibilities of a drop in welfare contributions, at an unchanged balance in the public accounts. There is then a risk of the positive effect of the basis as discussed earlier being undermined. The issues of redistribution and efficiency of the measure in terms of employment are not independent.

Finally, what conclusions can be drawn about this type of measure? Firstly, there is a high margin of uncertainty, as the results depend considerably on the context and the way in which this policy is implemented. The arguments above do, however, indicate that the effect on employment should be positive, especially in those sectors that are relatively low-skilled labour intensive, which are the focus of employment policies. But this measure comes with significant distribution effects. Finally, it needs to be put into perspective with the type of specialisation acquired and desired for France: in the top of the range activities that form the heart of European specialisation[16], there is probably not a lot that can be expected from replacing employer contributions with VAT.

*Martine Carré, Benjamin Carton & Stéphane Gauthier**
veronique.lerolland@cepii.fr



15. See H. Sterdyniak *et al.* (1991), *op. cit.*, S. Gauthier & T. Rebière (2007), "Les bénéficiaires de la tva sociale", Offprint.
16. Generally speaking, goods and services (rent, education and health services) exempt of VAT or subject to reduced rates are mainly not exchangeable. An increase in VAT could transfer demand to the detriment of an exchangeable sector, thereby reducing Frances commercial openness. This is the traditional argument developed by P. Krugman & M. Feldstein (1989), "International trade effects of value added taxation", NBER *Working paper series*, No 3163.
17. B. Salanié (2002), *Théorie économique de la fiscalité*, Économica, p. 197.
18. L. Fontagné, G. Gaulier & S. Zignago (2007), "Specialisation across Varieties within Products and North-South Competition", CEPII *Working Document,* No 2007-06.
*S. Gauthier is a professor at ENSAE, on secondment from the Université de Caen and a member of CREST-LMA. The authors wish to thank S. Roux, S. Grégoir, G. Laroque, F. Lenglart and A. Trannoy.

LA LETTRE DU CEPII


EDITORIAL OFFICES

Centre d'études prospectives
et d'informations internationales,
9, rue Georges-Pitard
75015 Paris.
Tél. : 33 (0)1 53 68 55 14
Fax : 33 (0)1 53 68 55 03

PUBLISHER:
Agnès Bénassy-Quéré
Director of the CEPII

CHIEF EDITOR:
Agnès Chevallier

DTP:
Laure Boivin

DISTRIBUTION:
La Documentation française.

SUBSCRIPTION only to the original, French version.
(11 issues per year)
France 48.50 € VAT
Europe 50.10 € VAT
DOM-TOM (NET, econ. air mail)
49,10 € NET
Other countries (NET, econ. air mail)
50.10 € NET

Please send your orders to:
**La Documentation française**,
124, rue Henri Barbusse
93308 Aubervilliers Cedex
Tél. : 33 (0)1 40.15.70.00

WEB site: **www.cepii.fr**
ISSN 0243-1947

CCP n° 1462 AD
3rd Quarter 2007
August 2007

Imp. ROBERT-PARIS
Imprimé en France

*The CEPII is entirely responsible for the* Lettre du CEPII *and its on-line, English translation. The opinions expressed therein are those of the the authors.*