A consumption tax amounts to exempt savings from taxation. As such, it would have important distributional effects, first of all from the poor to the rich, but also towards capital intensive industries; and intergenerational, away from the very young (students) and the old. For what concerns long term effects, most studies show that a consumption tax would be moderately more efficient and much simpler than the income tax. Nevertheless with such a tax, the progressivity of the current system could not be replicated. Attempts to mitigate the regressive features of the consumption tax would unavoidably lower the efficiency gains, and significantly increase complexity. I conclude that the passage to a consumption tax has to be done on the basis of a judgement of value (how progressive should our tax system be?), and not based on technical arguments. Shifting to a consumption tax would also imply an extremely complex transition that could be characterised by unemployment and inflation. For monetary policy, monitoring the economy during this transition would be extremely complex.

Given the mixed picture that emerges from the analysis, I conclude asking why the consumption tax has taken such an echo in the current debate. May be because it is supposed to serve objectives that are not explicitly stated: either the objective of increasing competitiveness (but then, other tools like the exchange rate seem more straightforward and efficient), or the objective of reducing public spending.

Introduction
The recent debate on a substantial reform of the European tax system comes after the same matter has been discusses for almost a decade in the United States. On both sides of the Ocean, proponents of a radical reform argue that it would be possible to obtain a more "pro growth" and efficient system, and often see the switch to a consumption tax away from direct taxation as a mean to obtain such a goal. The literature on public finance pins down four main characteristics against
which to evaluate a tax system: The first is its efficiency, i.e. its capacity to minimize the impact on private agent's decisions (on saving, investing, working, etc.). The less it distorts these decisions, the more efficient the system is. The second characteristic is fairness, i.e. the equality of treatment; then, a tax system must be simple, in order to be transparent to citizens, and not costly to manage for the administration. Finally, the tax system has to ensure adequate revenue to cover public expenditures.

In what follow I will try to assess the merits of a consumption tax compared to a system of direct taxation on the basis of these characteristics. Then, I will consider what would happen during the transition between the two systems, and analyse the consequences for the conduct of monetary policy. Before doing that, in the next section I will briefly describe how a consumption tax would work.

The Consumption Tax

The consumption tax is a tax on expenditure that can take many different but analytically equivalent forms (VAT, flat rate, retail sales tax). The difference with respect to the income tax is that by taxing expenditure it leaves out of the tax base savings. Thus, the choice of whether to tax consumption or income amounts to the choice of whether to tax savings or not.

Both in the US and in Europe tax revenues substantially come from income taxation, but while in European countries an important consumption tax exists (in the form of a VAT tax), in the US consumption taxes are negligible. The income tax is progressive, so that the average tax rate is larger for the rich than for the poor. On the other hand, given that rich people typically save a larger percent of their income than poor people, a simple (proportional) tax on consumption would be regressive, in the sense that it will lead to a decrease of the average tax rate for the rich and an increase for the poor.

The regressive features of the simpler version of the consumption tax may be attenuated in various ways, e.g. by granting tax deduction to poor people, or imposing different tax rates on different categories of goods (as already happens with the VAT in Europe). Nevertheless, given the typical consumption structure of households in advanced economies, it would be impossible to replicate the progressivity of the current income tax system simply by modulating VAT rates or deductions. Thus, the passage from a progressive income tax to a neutral (at best) consumption tax would unequivocally reduce the overall progressivity of the system.

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1 The only exception are state retail sales and tax exempt savings accounts. C. Alan Garner shows by means of examples that VAT taxes, retail taxes, or even a flat rate tax are all equivalent ways of taxing consumption ("Consumption Taxes: Macroeconomic Effects and Policy Issues", Economic Review of the Federal Reserve Bank of Kansas City, second quarter 2005).

2 Empirical results on the regressivity of consumption taxes give mixed results. François Bourguignon and Dominique Bureau show that the VAT for France is not regressive even with the current architecture of only two rates. (L'architecture des prélèvements en France, Rapport du Conseil d'analyse économique, n. 17, Paris, 1999). The retail tax levied in most of the US states, with its single rate, is on the other hand regressive as expected (Feenberg, Daniel R., Andrew W. Mitrusi and James M. Poterba. 1997. "Distributive Effects of Adopting a National Retail Sales Tax." In James M. Poterba, ed., Tax Policy and the Economy, Cambridge, Ma, MIT Press.).
The change in income distribution is not the only important allocative effect of a consumption tax. Eliminating taxation on savings provides a powerful incentive to savings and investment, and is thus likely to boost output in firms and industries that make extensive use of capital, while depressing the labour intensive sectors. Furthermore, by suppressing all tax deductions, exclusions and credits, a consumption tax would eliminate all distortions that were introduced for other policy objectives, and that presumably create an obstacle to the efficient allocation of capital among sectors. On the other hand, if the tax rates on different goods were to be differentiated in order to reduce the regressive effects of a consumption tax, then other relative price distortions would appear.

Other important distributional effects, like the double taxation of existing wealth, would appear during the transition between the two systems. I will come back on this later, also for a discussion of policy implications.

Assessing Benefits and Costs of a Switch to a Consumption Tax

As I argued in the introduction, assessing a tax system involves four main dimensions: efficiency, fairness, simplicity, and adequate revenues. To obtain a meaningful comparison of tax laws, we need to reason in "revenue neutral" terms, as most studies do.

A first important remark is that it exists a tradeoff between fairness and simplicity. The proportional consumption tax would be remarkably simpler than the income tax, but as we saw from the simple example before, it would be strongly regressive. To reduce this effect it is necessary to introduce deductions based on income, or complex systems of differentiated tax rates. Thus, a first conclusion is that the simplicity advocated by the proponents of consumption taxes does not come for free, but has to be paid giving up at least some of the fairness.

Efficiency considerations are at the core of arguments in favour of switching to a consumption tax. The economy would become more efficient, in the sense of producing more output per person, if reforming the tax code eliminated tax-related distortions in decisions to work, save, and invest. In fact, agents consider after tax revenues (wage or capital returns) when deciding how much to work and how much to save and invest. The income tax reduces the after-tax compensation for these activities.

While the gain in efficiency is straightforward in theory, an estimation of its actual amount proves to be a difficult exercise. In 2002 Jane Gravelle surveyed several studies for the US; the long run change in real output obtained switching to a consumption tax ranged from 1.7 percent to 7.5 percent, depending on the assumption of the chosen model.

Among those attempts, the paper by Altig et al. proves particularly interesting because it also examines variants aimed at mitigating the strong regressive effects of a pure proportional consumption tax. Their model of the US economy has

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coherent theoretical foundations and a realistic representation of the existing federal tax system. The long-run percentage differences from a baseline path, which describes how the economy might perform under the current tax system, is remarkable for the pure consumption tax, almost a 10 per cent increase in the long run level of real output. The increase in real output reflects greater saving and investment as well as an increase in the labour supply. Nevertheless, these gains are strongly reduced when introducing corrections to the regressivity as the deduction would reduce the tax base (the increase of output would only be 4.5 per cent), or giving tax relief to owners of existing capital to avoid double taxation (more on this in the next section). In this case the benefits in terms of real output would become almost negligible, not even 2 per cent.

The simulations of Altig et al illustrate another tradeoff that emerges when comparing tax systems. Measures designed to improve the fairness of a consumption tax system may erode the long-term gains in economic efficiency. Adding special transition rules or deductions also may increase the complexity of the tax code.
We can thus conclude that a consumption tax is simpler and/or more efficient only if we are ready to sacrifice the redistributive role of the tax system. A choice that may be legitimate, but that first has to be clearly stated, for agents to know what they are accepting; and second, linked to that, has to be the object of a conscious political choice. It is not a technical matter.

The Problems of Transition
The preceding section made it clear that switching to a consumption tax would not have significant positive effects in terms of simplicity and efficiency, unless we were ready to accept a strong reduction of the progressive features of the current system. Thus, we concluded that no system is unequivocally better than the other. In addition to that switching to a consumption tax would also imply formidable problems linked to the transition between the two systems.
The first that we have already touched upon is the problem of existing wealth. All capital and wealth that exist at the moment of the transition originated from income taxed under the old system. When this wealth will finally be spent, under the new system, it will be taxed again. Thus, the passage to the new system has a very strong bias against the owner of that wealth (the old and the rich). This should be taken care by transitional provisions, that would as we saw greatly reduce the efficiency gains, and furthermore add to the complexity of the new tax code.
Exonerating savings from the tax base would also have another serious shortcoming in terms of intergenerational distribution. Over the life cycle, consumption exceeds revenues in the young age and in the old age. Thus, those in these classes would be the losers from the new system. While for the old this problem seems only linked to the transition (those who will be old in the future will have saved more), the problem of the young seems more structural, and potentially serious; in fact, by penalizing them, such a system may well penalize the accumulation of human capital, with negative effects on the long run growth potential of the economy.
Problems may also appear in the labour market. First of all, the shift of resources to capital intensive sectors is likely to cause important layoffs in the more traditional industries, at least in the short-to-medium run.

Problems for employment may also originate in the necessary adjustment of wages and prices following the introduction of a consumption tax. Such a tax requires the price of consumer goods to rise relative to wages. Consumers would pay a substantially higher price for goods that embed a much larger sales taxes. In the long run, and assuming that revenues for the government remain constant, the decline of income taxes would exactly offset the rise in consumption taxes, leaving households with the same purchasing power.

Nevertheless, during the transition such compensation would not be complete, and would depend on how the increase in consumer prices relative to wages occurs. If all the adjustment fell on prices, holding wages constant, there would exist serious risks of sustained inflationary pressures, as it would become unclear to consumers what the "correct" price level in the new system should be. If part of the adjustment were instead be accomplished by nominal wage changes, then the predictable resistance of workers would most probably cause stickiness, and hence a prolonged period of disequilibrium relative prices, and unemployment. Given the importance of the required adjustment, unemployment could be large, and the transition long.

Monetary Policy Behaviour

The long run effect of a consumption tax on interest rate is far from clear, depending on many contradictory effects. In fact, both supply and demand of loanable funds would change, and in addition the optimal debt/equity ratio for investment financing would be significantly different. Thus, the final long run effect on the equilibrium interest rates, and thus the necessary course of action for the central bank, is very hard to forecast.

Furthermore, the transition would entail a formidable challenge for monetary policy. We can assume that the central bank would not contrast the jump in prices necessary to achieve the new correct price-wage ratio. But what if instead the relative price change did not happen smoothly and unemployment appeared? And how to deal with private agents expectations? For example, consumers might anticipate their purchase of durable goods anticipating the future regime change. On the other hand, firms may postpone purchases of capital goods, because under the consumption tax investment would be cheaper. Furthermore, these effects would most probably change in intensity in different sectors and countries. Thus understanding whether the interaction of these behaviours would be expansionary or contractionary, and adjusting the path of monetary policy accordingly, may become an extremely difficult task.

If in addition the tax rate was not properly set from the outset at the level necessary to replicate the overall tax burden of the income tax, then the central

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5 The experience of the introduction of the Euro has precisely showed how the temporary ignorance of households was exploited by a non perfectly competitive distribution system, with permanent effects on prices.
bank would have to deal with the involuntary contractionary/expansionary fiscal stance, and with the expectations of successive adjustments that it would entail.

**Conclusion**

The preceding paragraphs have shown that the adoption of a consumption tax would not unequivocally improve upon the existing system based on an income tax, and that the choice to give up fairness in exchange for efficiency and simplicity needs to be political. I also argued that the problems posed by the transition are likely to be large and difficult to solve. Less radical changes of the current system, based on the income tax, may be designed to improve transparency and efficiency, without altering the basic characteristics of progressivity.  

We can therefore ask why such a vast debate developed in the past months about the proposal of switching to a consumption tax. The same "fundamental tax reform" has long been debated in the United States, where nevertheless the discussion appears to have more sense. The US current system is more biased towards income taxation, is less progressive than most European tax systems; furthermore, their economy has a chronic problem of low savings that may in the long run hamper its performance. For all these reasons, a consumption tax may be worth analysis and consideration. But in Europe none of these conditions is met. Savings are high, the current tax system is already a mixture of income and consumption tax (VAT), and the welfare state is still large.

So why to discuss a consumption tax for Europe? The only explanation is that proponents have in mind other consequences, not directly linked to the characteristics of the tax system.

A possible hidden scope for a consumption tax could be the attempt to boost competitiveness. In fact, taxing consumption means among other things taxing imports and detaxing exports. The modality chosen to implement such a tax in the EU would then become crucial. If the passage to a consumption tax was decentralized, i.e. if each European country was left free to set its own rates and to change them at will, then we would most likely assist to a wave of fiscal competition, a non cooperative "race to the bottom" in which each country would try to alter relative prices (the real exchange rate), making impossible a revenue neutral transition and seriously damaging public finances.

If instead such a process was managed at the European level, with the objective of improving competitiveness towards the rest of the world, other problems would arise. The first is that national tax rates would have to be set with the double objective of being revenue neutral with respect to national income taxes, and to be neutral in what concern intra European competitiveness. This seems an excessively ambitious objective for Europe, especially given the current decisional procedures. Furthermore, even assuming that such a centralized process was successful, it seems more straightforward and efficient to intervene on the

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6 For a proposal regarding mainly but not only France, see the forthcoming report of the Conseil d'Analyse Economique, by Christian Saint-Etienne and Jacques Le Cacheux.
nominal exchange rate than on relative prices, in order to improve competitiveness.

Another possible hidden explanation of the emphasis on the consumption tax is the attempt to reduce the size and the redistributive role of the government. A revenue neutral consumption tax would involve such large changes in prices, and transition problems, that it is plausible to expect, when implementing the tax, an outcome somewhere in the middle. Thus, we would observe a reduction in tax revenues, and at that point, the soundness of public finances would call for a reduction of government spending. Such an agenda would be perfectly legitimate, if it were the outcome of a transparent democratic process. The problem is that, like for other reforms (namely the labour market), we are left with the feeling that they are introduced with the stated objective of solving specific "technical" problems (unemployment, or inefficient tax codes), but with the hidden objective of changing the social system of Europe without looking for democratic support.