STRUCTURAL BALANCE AND "STRUCTURAL EFFORT"

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Introduction

The evolution in the public balance reflects both fiscal policy decisions and the impact of cyclical evolutions. In attempting to characterise the orientation of fiscal policy, it is *a priori* natural to adjust for the impact of the economic cycle on the public finances. This exercise is important as much for the management of public finances as for the conduct of macroeconomic policy.

There seems to be no dispute regarding either the utility of the calculation or its methodological base. The method used, which is broadly common to all the international organisations, consists of evaluating the cyclical component of the general government balance on the basis of measurement of the economy's position in the cycle (captured by taking the output gap). The so-called "structural" balance is then obtained by deducting this cyclical component from the observed balance.

In practice, however, measurement of the structural balance raises a certain number of difficulties. In the first place, it turns out to be sensitive to the measurement of the economy's position in the cycle, which may be differently assessed by different institutions. These differences in the diagnosis of the cyclical situation then have an impact on the construction of the absolute level of the structural balance. In addition, the calculation method is based on a set of assumptions that are more or less open to question. In particular, it assumes that "spontaneous" tax revenue evolves in line with activity. While this property seems to be verified econometrically over the long term, it constitutes a very strong conventional assumption for the short term and one that is not verified in practice.

This latter difficulty has an important consequence, namely that it substantially blurs the interpretation of the structural balance when attempts are made to identify the portion of the evolution in the public balance that is attributable to discretionary decisions on the part of the authorities. This means that the concept of structural balance is a very imperfect measure for characterising the orientation of fiscal policy. It is in fact conceived as the "residual" between the observed balance and its cyclical component, the result being that any factor that does not explicitly appear in the cyclical balance is, by construction, of a structural nature. This is true in particular for the interpretation of short-term fluctuations in the elasticity of revenue: the calculation conventions used in the method lead to interpreting these fluctuations entirely as part of the variations in the structural balance, whereas in fact, by their very nature, they lie outside the control of the fiscal authorities and therefore are not subject to discretionary decision.

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What is probably a more satisfactory measure of the discretionary component of public finances has been proposed in the "Economic, Social and Financial Report" annexed to the 2004 Budget Bill, using the notion of "structural effort". This "structural effort" singles out two factors: the gap between the growth in public expenditure and potential growth, which may be called the "structural expenditure effort" and the new measures relating to compulsory levies collected by the whole of general government. In fact, the structural effort in any case merely identifies a part of the factors relating to the evolution in the structural balance and an accounting breakdown makes it possible to move from one concept to the other by means of certain adjustments: elasticity effect, timelag between "chargeable event" and collection of certain taxes (personal income tax and corporation tax), and the evolution in revenue excluding compulsory levies.

An approach of this kind is still open to improvement. The simplest would be to adjust the discretionary expenditure effort to allow for that part of spending that can be regarded as "automatic", in particular interest charges and unemployment-related expenditure. This adjustment marginally modifies the calculation.

At a more fundamental level, however, the method remains asymmetrical in its treatment of expenditure and revenue. On the revenue side, the structural effort does indeed single out the new measures taken by public decision-makers – in the legal sense. On the other hand, for lack of an evaluation of the "new measures" on the expenditure side, reasoning of a statistical nature is adopted by comparing growth in expenditure with potential growth. However, the reference to potential growth as the yardstick for distinguishing discretionary expenditure from non-discretionary expenditure seems to be highly conventional.

1. The public balance fluctuates with the economy's position in the cycle

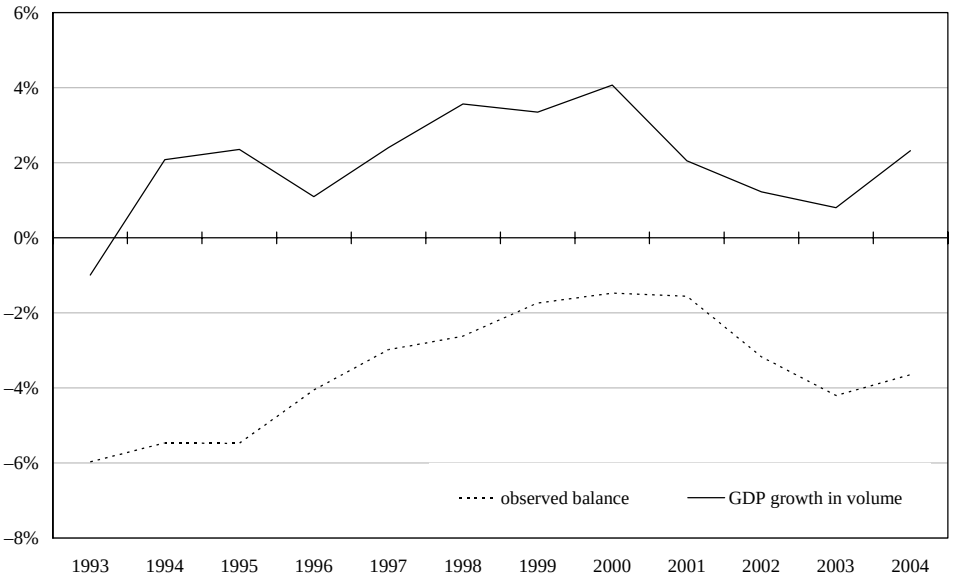
The evolution in the general government balance in part reflects cyclical fluctuations in the economy. In the trough of the cycle, there is a shortfall of revenue and a surplus of expenditure, while in more favourable periods, the public deficit is improved as a result of higher tax revenue and a decline in certain social welfare benefits.

A large part of public expenditure is fairly inert and turns out to be independent of the economy's position in the cycle (for example, civil service remuneration, pensions, health care, infrastructure). Major exceptions to this rule, however, are unemployment benefits and income support for jobseekers, such as the French "revenu minimum d'insertion".

Revenue, on the other hand, turns out to be sensitive to cyclical evolutions in the respective taxable bases. For example, VAT revenue (assessed on household consumption and corporate investment), corporation tax, personal income tax and social security contributions (assessed on the total wage bill and hence sensitive to

Figure 1

Public Balance and Cyclical Fluctuations



the productivity cycle and the situation on the labour market) fluctuate in response to shocks affecting the economy.

2. The structural balance: the public balance adjusted for cyclical fluctuations

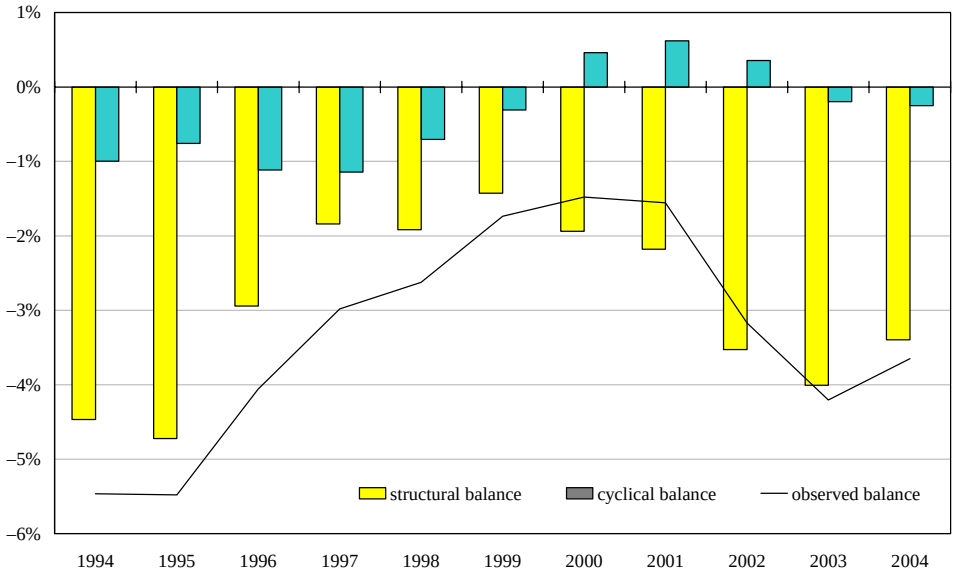
In seeking to characterise the orientation of fiscal policy, it is desirable to adjust the evolution in public finances for the effects of cyclical fluctuations. The method used consists of evaluating the cyclical component of the general government balance on the basis of measurement of the economy's position in the cycle (captured by taking the output gap). The so-called "structural" balance is then obtained by deducting this cyclical component from the observed balance.

2.1 A measure of the economy's position in the cycle: the output gap

The economy's position in the cycle is generally assessed by means of the "output gap", defined as the difference between observed GDP and its potential level, *i.e.* the level that is sustainable without either inflationary or deflationary tensions. Potential GDP is itself calculated on the basis of a production function linking value added to the factors of production (labour and capital) and to total

Figure 2

Structural and Observed General Government Balance



factor productivity – or technical progress. In periods of demand shortfall the output gap is negative; in periods of excess demand, positive.

2.2 The structural balance: the public balance adjusted for cyclical fluctuations

There seems to be no dispute regarding the methodological underpinnings of the calculation, which are common to all the international organisations. Cyclical revenue is obtained by adjusting actual revenue on the basis of the elasticities of the principal taxes to the output gap.[1] To be more precise, for a given tax T, we have:

$$T_c = T^* (Y - Y^*/Y^*)^{\alpha}$$

where T_c denotes the cyclical portion of the revenue from tax T and α the elasticity of the tax to the output gap $Y - Y^*/Y^*$.

Certain organisations introduce a refinement into the method in order to take account of the timelag between the "chargeable event" (evolution in the taxable base) and the actual collection of certain taxes that are paid following a one-year timelag (personal income tax or corporation tax). For these taxes, the output gap taken as reference is not the contemporaneous gap but that of the previous year.

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[1] The elasticity of a given tax to the output gap is a measure of the sensitivity of the evolution in the tax to variations in activity.

Box 1
The calculation of the structural balance

This box gives a somewhat more formal presentation of the calculation of the structural balance. Let S denote the public balance, R the revenue and D the expenditure. Subscript c identifies cyclical values and subscript s structural values. Finally, Y represents observed GDP, Y^* potential GDP and $(Y - Y^*)/Y^*$ the output gap.

Cyclical adjustment, revenue side

For each revenue item R, we have:

$$R_c = R\left(\frac{Y - Y^*}{Y^*}\right)^{\alpha}$$

where α represents the elasticity of revenue item R to the output gap.

Certain organisations introduce a refinement into the method in order to take account of the timelag between the evolution in the taxable base – which constitutes the "chargeable event" – and the actual collection of the tax. This is the case in France for personal income tax and corporation tax, for which the output gap taken as reference is not the contemporaneous gap but that of the previous year. For taxes of this kind, the previous relationship becomes:

$$R_c = R\left(\frac{Y_{-1} - Y_{-1}^*}{Y_{-1}^*}\right)^{\alpha}$$

Cyclical correction, expenditure side

Most public expenditure is not directly affected by cyclical fluctuations. Unemployment benefits and income support for jobseekers like the French RMI are exceptions to this rule, however. These are captured by applying a method based on Okun's Law:

$$D_c = D\left(\frac{U - U^*}{U^*}\right)^{\eta}$$

where η is the elasticity of expenditure on unemployment benefits and jobseekers' income support to the gap between observed unemployment U and structural unemployment U^*, *i.e.* $(U - U^*/U^*)$.

The cyclical balance can then be derived as:

$$S_c = R_c - D_c$$

as can the structural balance:

$$S_s = S - S_c$$

On simple assumptions (no allowance for the income and corporation tax timelag, unit elasticity of total revenue to the output gap, no impact of the cycle on expenditure), the evolution in the structural balance is then easily deduced from the evolution in the output gap:

$$\Delta\left(\frac{S_c}{Y}\right) = \delta * \Delta(\text{output gap})$$

where δ denotes revenue as a share of GDP (slightly below 0.5 in the case of France). The evolution in the structural balance can then be written:

$$\Delta\left(\frac{S_S}{Y^*}\right) = \Delta\left(\frac{S}{Y}\right) - \delta * \Delta(\text{output gap})$$

Expenditure is in large part insensitive to cyclical fluctuations and is therefore considered as structural, with the exception of unemployment compensation and spending on income support measures for jobseekers such as the French "revenu minimum d'insertion", which are treated similarly to revenue using an Okun's Law method. To be more precise, if IC denotes unemployment benefits, IC^* the structural portion of these benefits, U^* the equilibrium unemployment rate, U the observed unemployment and η the elasticity of unemployment benefits to variations in unemployment (of the order of 0.4), we have:

$$IC^* = IC\,(U^*/U)\eta$$

2.3 The limitations of the cyclical adjustment

In practice, the measurement of the structural balance poses two major difficulties. In the first place, it is sensitive to the measurement of the economy's position in the cycle, which may be differently assessed as between one institution and another (there are in fact numerous methods for estimating the output gap: production function, log-linear trend, statistical method using a filter). Divergences in the diagnosis of the cyclical situation are then passed on into the construction of the structural balance in absolute terms.

In the second place, the structural balance is calculated as a "residual" between the observed balance and the cyclical portion of the public balance, meaning that all factors that do not explicitly appear in the cyclical balance are, by construction, regarded as structural in nature. This is particularly true of fluctuations in the elasticity of revenue to the level of activity. In fact, the calculation of the cyclical balance is based on a conventional assumption regarding the elasticity of revenue, so that any gap between the observed elasticity and this conventional elasticity automatically affects the structural balance. In this respect, the method poses two problems:

(i) Relating the sensitivity of revenue directly to the output gap rather than to the respective specific taxable bases contains a strong assumption, being in fact tantamount to assuming that all the taxable bases move on average directly in line with GDP. In practice, however, the impact of a macroeconomic shock on the public balance depends on the structure of demand. For example, an external shock (from world demand, for example) is propagated to activity via a decline in exports and hence has no direct impact on the public balance. The usual timelags for adjustment in employment and wages delay the impact on household income, which itself takes time to bring about a decline in consumption (and hence in VAT revenue). By contrast, the impact on the public balance of an internal shock on activity of the same magnitude (fall in the household saving ratio, for example) is not the same, inasmuch as its impact on VAT revenue is immediate. It will therefore be seen that evaluating the impact of the cyclical situation on the public balance using as sole indicator the output gap constitutes a substantial approximation.

(ii) The specific features of the tax system produce a divergence between the evolution in "spontaneous" revenue (revenue in the absence of new measures) and the evolution in taxable bases: the progressive nature of personal income tax and the timelag between the taxable base applied (the "chargeable event") and the actual collection of the tax (income and corporation tax) introduce divergences between the evolution of the taxable base and of the corresponding revenue.

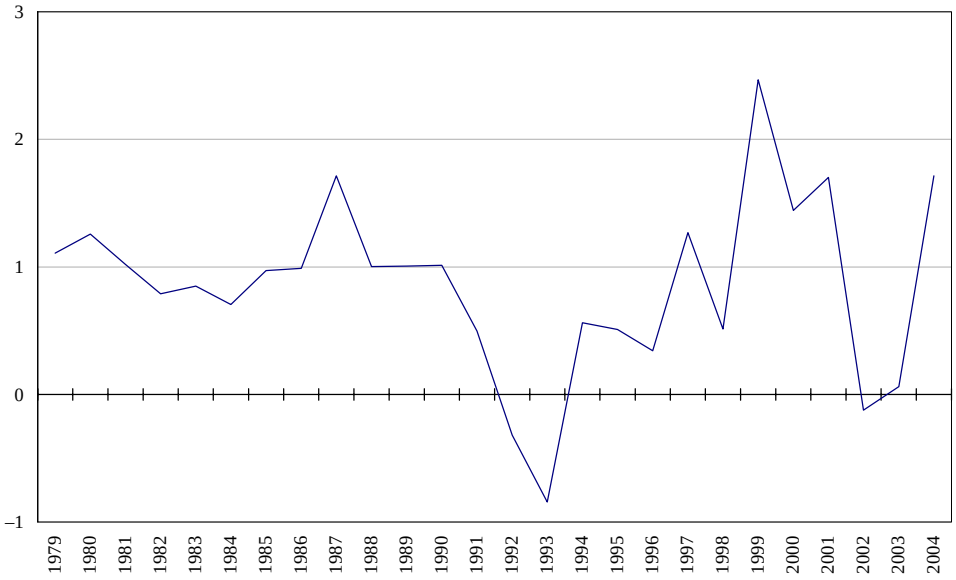
3. A proposed measure of the discretionary component of public finances

3.1 The structural balance is not a measure of the discretionary component of public finances

The adoption of a conventional elasticity has one major consequence: it considerably blurs the interpretation of the structural balance when an attempt is made to identify the portion of the evolution in the public balance that is attributable to discretionary decisions on the part of the authorities. This means that the concept of structural balance is a highly imperfect measure for characterising the orientation of fiscal policy, notably because of short-term fluctuations in revenue elasticities, which, because of the calculation conventions used, are classified entirely as variations in the structural balance, whereas, by their nature, these evolutions lie

Figure 3

Elasticity of Central Government Tax Revenue



outside the control of the fiscal authorities and therefore can in no way be regarded as discretionary.

Moreover, revenue items other than compulsory levies (non-tax revenue of central government, for example) are by their nature not regarded as being cyclical and therefore are implicitly included in the structural balance, although treating them as being entirely discretionary is debatable.

3.2 A first measure of the discretionary component: the "discretionary effort"

One measure of the discretionary component of public finances that is probably more satisfactory than the structural balance has been proposed in the "Economic, Social and Financial Report" annexed to the 2004 Budget Bill, based on the notion of "structural effort". This "structural effort" singles out two factors: the gap between the rise in public expenditure and potential growth, which can be called the "structural expenditure effort" and the new measures relating to the compulsory levies collected by all parts of general government. This means the exclusion of revenue other than compulsory levies as well as variations in the structural balance due to movements in revenue elasticities.

De facto, the structural portion of the public deficit is indeed related to the structural expenditure margin and to the new measures relating to compulsory levies. The "structural effort" merely isolates a part of the factors relating to the

evolution in the structural balance and an accounting breakdown makes it possible to move from one concept to the other by means of certain adjustments, as shown in Table 1:

- the elasticity effect: between 1999 and 2001, the apparent elasticity of revenue was temporarily higher than unity, a fact which contributed to the improvement in the structural balance, but without this improvement stemming from discretionary decisions. Conversely, when revenue elasticity is below unity (as has been the case in 2002 and 2003), the result is to widen the structural balance;
- the timelag in the case of certain taxes between the evolution in the taxable base and actual collection (income and corporation tax), which tends to worsen the structural balance in times of cyclical slowdown;
- the evolution in revenue other than compulsory levies;
- expenditure adjustment related to unemployment compensation.

Table 1

Breakdown of the Structural Balance

	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Observed balance	**–2.6**	**–1.7**	**–1.5**	**–1.6**	**–3.2**	**–4.2**	**–3.6**
Structural balance : absolute level	–1.9	–1.4	–2.0	–2.2	–3.6	–4.0	–3.4
Structural balance: year to year change	**–0.1**	**0.5**	**–0.5**	**–0.2**	**–1.3**	**–0.4**	**0.6**
Discretionary variation in the structural balance	**0.8**	**–0.6**	**–1.2**	**–1.0**	**–1.1**	**–0.1**	**0.2**
New measures relating to compulsory levies	*0.3*	*–0.2*	*–1.2*	*–1.0*	*–0.4*	*0.2*	*0.1*
Gains due to the divergences between growth in expenditure and in GDP	*0.5*	*–0.4*	*0.0*	*0.1*	*–0.7*	*–0.3*	*0.1*
Non-discretionary component	**–0.8**	**1.1**	**0.6**	**0.7**	**–0.2**	**–0.4**	**0.4**
Revenue other than compulsory levies	*–0.3*	*–0.1*	*0.3*	*0.2*	*0.0*	*–0.2*	*–0.1*
Income and corporation tax timelag	*0.1*	*0.0*	*0.1*	*–0.2*	*–0.1*	*0.0*	*0.1*
Unemployment adjustement	*0.0*	*0.0*	*–0.1*	*0.0*	*0.0*	*0.1*	*0.0*
Effect of spontaneous elasticity of compulsory levies	*–0.5*	*1.3*	*0.3*	*0.7*	*–0.2*	*–0.2*	*0.3*

Box 2
Structural effort and breakdown of the structural balance

This box proposes a formal linkage between the structural balance and the structural effort calculated in the "Economic, Social and Financial Report", distinguishing the structural expenditure effort and the structural revenue effort.

Breakdown, expenditure side

We have, using the same notation conventions as in Box 1:

$$Ds = D - Dc$$

The adjustment related to spending on unemployment compensation and *RMI*, D^{unem}, can be written:

$$D_c = D^{cho}\left(\frac{U - U^*}{U^*}\right)^{\eta}$$

hence:

$$\Delta\left(\frac{\mathrm{D_c}}{\mathrm{Y^*}}\right) = \eta\frac{D^{cho}}{Y^*}\Delta UG$$

where UG represents the relative divergence between observed unemployment and structural unemployment.

The evolution of the share of expenditure in potential GDP can be written:

$$\Delta\left(\frac{\mathrm{D}}{\mathrm{Y^*}}\right) = \frac{\mathrm{D_t}}{\mathrm{Y_t^*}} - \frac{\mathrm{D_{t-1}}}{\mathrm{Y_{t-1}^*}} = \frac{\mathrm{D_{t-1}}}{\mathrm{Y_{t-1}^*}}\left(\frac{D_t}{Y_t^*}\frac{Y_{t-1}^*}{D_{t-1}} - 1\right) = \frac{\mathrm{D_{t-1}}}{\mathrm{Y_{t-1}^*}}\left((d+1)(1-y^*) - 1\right)$$

where d is the nominal growth in public expenditure and y^* the nominal growth in potential GDP. The evolution in the share of the structural expenditure in potential GDP (corresponding to the contribution of expenditure to the evolution in the structural balance) can then be written:

$$\Delta\left(\frac{\mathrm{D_s}}{\mathrm{Y^*}}\right) = \Delta\left(\frac{D}{Y^*}\right) - \Delta\left(\frac{D_c}{Y^*}\right) = \frac{\mathrm{D_{t-1}}}{\mathrm{Y_{t-1}^*}}\left(d - y^*\right) - \eta\frac{D^{cho}}{Y^*}\Delta UG$$

where d is the nominal growth in public expenditure and y^* the nominal growth in potential GDP.

The first term is regarded as discretionary and is taken as forming part of the structural effort. This is not true of the second term, which represents the cyclical expenditure adjustment related to unemployment compensation.

Breakdown, revenue side

Let ε denote the observed elasticity of tax revenue to activity. In what follows, the conventional reference elasticity used in the calculation of the cyclical balance α (see Box 1) is assumed to be unity. *MN* denotes the new measures. The elasticity ε verifies the following relationship:

$$\varepsilon \frac{dY}{Y} = \frac{\Delta R - MN}{R}$$

The variation in structural revenue can be written:

$$\Delta R_S = \Delta R - \Delta R_c = \left(MN + \varepsilon \frac{dY}{Y} R \right) - \left(R - R^{ret} \right) \Delta (OG) - R^{ret} \Delta (OG)_{-1}$$

where R^{ret} denotes the "retarded" revenue (in practice, income and corporation tax) and OG the output gap. We then have:

$$\Delta \left(\frac{R_S}{Y^*} \right) = \frac{R_S}{Y^*} - \frac{R_S}{Y^*} \Bigg)_{t-1} = - \frac{R_S}{Y^*} \Bigg)_{t-1} y^* + \frac{\Delta R_S}{Y^*}$$

The contribution of revenue to the evolution in the structural balance can then be written, ignoring second-order magnitudes, as follows:

$$\Delta \left(\frac{R_S}{Y^*} \right) = \frac{MN}{Y^*} + (\varepsilon - 1) \frac{R}{Y^*} \frac{dY}{Y} + \frac{R^{ret}}{Y^*} \Delta \Delta OG$$

The first term, which represents the contribution of new measures relating to compulsory levies to the evolution in the structural balance, is discretionary by nature. On the other hand, the second and third terms, representing respectively the contribution of variations in revenue elasticity to the evolution in the structural balance and the impact of the income and corporation tax timelag are not discretionary by nature.

3.3 The "discretionary effort" is still nevertheless an imperfect measure of the discretionary component: some possible lines for improvement

The proposed calculation of the structural effort represents an appreciable improvement in the treatment of the revenue side in the measurement of the discretionary component of the public balance. The approach is nevertheless open to improvement. One simple improvement consists of adjusting the discretionary expenditure effort for a portion of expenditure that can be considered as "automatic" and, as such, unrelated to any discretionary decision. Such a portion would be, for

example, the expenditure related to unemployment compensation and to interest charges on the debt. Taking these two adjustments into account would reduce the structural effort by around 1/10 of a point of GDP per year between 2000 and 2004.

At a more fundamental level, however, the method remains asymmetrical in its treatment of expenditure and revenue. On the revenue side, the structural effort does indeed single out the new measures corresponding to discretionary decisions in the legal sense of the term. On the other hand, for lack of an evaluation of the "new measures" on the expenditure side, the discretionary effort in this case is evaluated by reference to potential growth. This dividing line is essentially conventional. For certain items, potential growth does not in fact appear to be the most relevant basis for isolating the discretionary component of public expenditure: this is true, for example, in the case of public-sector wages and salaries.

This convention leads, moreover, to asymmetrical treatment of new measures on the revenue and expenditure sides. For example, the substantial (6.4 per cent) rise in 2003 in the ONDAM (official healthcare expenditure target) was greater than potential growth and therefore contributed to diminish the structural effort even though the new measures influencing the target were exclusively cost-cutting in nature (reduced or zero reimbursement of certain medicines, for example). Conversely, adjustments on the revenue side (higher taxes on tobacco) led to an improvement in the discretionary component of the public balance. An alignment of the two methods would result in contributions that were both positive.