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Macroeconomic and fiscal impact of the risk capital allowance

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Executive summary

This study was produced in response to the federal government's request for an assessment of the macroeconomic and fiscal impact of the risk capital allowance. More particularly, it aimed to assess the degree to which the objectives of the law of 22 June 2005 introducing a tax allowance for risk capital have been achieved. This study could not have been finalised without the assistance of a tax authority of the FPS Finance, as it was essential to obtain a number of detailed, unpublished data on corporation tax for the 2007 tax year. These data were made available to the Bank on 9 July 2008.

It should be noted that the tax allowance for risk capital is relatively recent and that an economic assessment of its impact is not always easy in these circumstances, particularly as regards the measure's dynamic effects or its impact at the most disaggregated level. It was therefore necessary to make a number of assumptions. Although this exercise aimed at maximum accuracy, there are still some areas where the estimates are only approximate. It was therefore decided to assess a range within which the net fiscal impact of the measure for the 2007 tax year is likely to fall. It was also necessary to confine the sectoral approach to an estimation of the gross fiscal impact of the risk capital allowance, as the data are still too fragmentary to attempt any disaggregated quantification of its secondary effects on employment, investment or the public finances.

The introduction of the risk capital allowance led to a structural change in the financial behaviour of companies, as it was very much in their interests to adapt their financial structure to take full advantage of the tax concession. It could therefore be to their advantage to establish a subsidiary or to operate via finance companies.

One aim of the tax reform was to strengthen the solvency of companies established in Belgium. In that regard, a very marked increase in shareholders' equity and authorised capital was recorded in 2006 and 2007. This increase was due to capital contributions of both Belgian and foreign origin.

Nonetheless, the real impact on corporate solvency must be qualified, as the very strong rise in equity capital is due largely to investments by Belgian companies in the shares of other companies, in most cases for tax reasons. However, such transactions did not bring any improvement in the solvency of Belgian companies, if viewed on a consolidated basis.

On the other hand, the inflow of foreign capital, notably via the replacement of current borrowings with shares in company capital and the formation of finance companies, did in fact strengthen the solvency of companies established in Belgium. That is also true of capital increases financed by households. In 2006 and 2007 there was a

* The data used in this study have been provided by the General Statistics Department, the Microeconomic Information Department and the Research Department of the Bank, as well as by the FPS Finance. The authors would like to express their gratitude to all persons having made a contribution.

sharp rise in both the expansion of shareholders' equity resulting from inflows of foreign capital and that financed by households. This shows that the solvency of companies in Belgium increased following the introduction of the risk capital allowance. The relatively slower growth of debt financing, primarily in SMEs, during the 2006-2007 economic boom seems to indicate that firms are making less use of this source of funding and more use of equity capital, so that the solvency of that type of firms has improved.

The risk capital allowance was also designed to make Belgium more attractive from the tax angle, and to offer an alternative to the coordination centres, which are destined to lose their special tax status shortly. The way in which the risk capital allowance is applied makes Belgium an attractive location for multinational groups to set up their financial centres there. The introduction of the risk capital allowance seems to have procured a trend reversal, limiting the outflow of capital from the coordination centres which have lost their approval. However, it should be pointed out that this is still a very provisional finding, since some of the largest coordination centres only lost their approval very recently and others still have an approval. On the basis of the tax returns for the 2006 and 2007 tax years, it seems that a number of the coordination centres whose approval had not yet expired nevertheless opted to apply the risk capital allowance. At the same time, there has been a marked rise in the number of other finance companies of Belgian or foreign origin, particularly the finance centres of international groups.

The introduction of the risk capital allowance has undeniably had a considerable impact in terms of financial flows. Conversely, the impact on the real economy, measured via a simulation based on the Bank's econometric model, seems to be fairly limited in the short term, but it may become a little more noticeable in the medium term. On the assumption that the tax reform will be neutral for the government budget, companies' gross investments in fixed assets can be expected to increase by around 400 million euro over a five-year period, while the positive effect on employment will be around 3,000 jobs. In the case of the coordination centres, there are signs that employment has contracted, but there has been a partial shift towards other companies within the group. Nonetheless, the fall in employment would in any case have been larger without the introduction of the risk capital allowance. Moreover, some jobs are being created, albeit on a limited scale, in the new finance centres being set up by multinational groups.

Finally, the study assessed the impact on the budget of the risk capital allowance and the other measures laid down by the law of 22 June 2005. In order to conduct this assessment, it is necessary to distinguish between the gross tax advantage represented by the risk capital allowance for Belgian companies and the net impact of that measure on public revenues.

The gross tax advantage for companies increased considerably owing to the marked rise in equity capital. The gross cost of the reform was already around 2.4 billion euro in 2006, on the basis of the tax returns. However, the net impact on the budget is much smaller. It is limited by the proceeds of the compensatory measures, the main one being the amendment of the definition of tax-exempt capital gains. Furthermore, the inflow of foreign capital does in principle not mean any reduction in corporation tax revenues for the Belgian government, but quite the contrary. Nor is that the case in regard to the application of the risk capital allowance by the companies which have taken over the activities of the coordination centres. On the basis of data which are still provisional and taking into account wide uncertainty margins, the net cost to public finances in 2006 of the measures introduced by the law of 22 June 2005 is estimated at between 140 and 430 million euro.

Macroeconomic analysis also shows that the measures introduced by the law of 22 June 2005 have so far had at most only a limited negative effect on corporation tax revenues. Both the movement in these tax revenues and the absence of any decline in the implicit rates indicate that there has so far been no significant negative effect on public revenues.

However, the conclusions of the analysis of the risk capital allowance's impact on public finances must be considered provisional, since the measure's dynamic effects are not yet fully apparent.

In that regard, it is reasonable to expect future years to bring a further increase in the gross tax advantage which Belgian companies enjoy. Some of the factors behind that increase are unlikely to depress public finances, and could even prove positive if they lead to an expansion of the corporation tax base in Belgium, particularly as a result of the process of allocating profits between the various companies in the same international group. The positive influence of the macroeconomic payback effects on public revenues could also increase slightly.

Conversely, various other factors could depress corporation tax revenues. These include the increase in the rate used to calculate the risk capital allowance, the use of

the previously unused part of the risk capital allowance, and the changes made to the structure of companies or groups of companies in the context of tax optimisation techniques. Some of these factors could have a considerable impact. It is therefore possible that the public revenues generated by corporation tax could suffer a substantial adverse effect in the future.

It is not yet possible to estimate accurately the effect that the risk capital allowance will have on public finances in the future. It will depend, in particular, on what happens regarding the various factors mentioned above, the economic context and the latter's influence on the operating surplus of companies, and the movement in interest rates. In this regard it should be noted that the cost to the budget may increase, particularly in a situation where the operating surplus of companies declines significantly and interest rates rise. Finally, the impact of the tax reform will depend on the degree to which companies resort to tax optimisation techniques and the application of the relevant rules.

Introduction

This study examines the macroeconomic and fiscal impact of the risk capital allowance. It thus responds to the request made by the federal government to the National Bank of Belgium in March 2008.

This study could not have been finalised without the assistance of the FPS Finance, as it was essential to obtain a number of detailed, unpublished data on the corporation tax for the 2007 tax year. These data were made available to the Bank on 9 July 2008.

It should be noted that the risk capital measure is relatively recent and that an economic assessment of its impact is not always easy in these circumstances, particularly as regards the measure's dynamic effects or its impact at the most disaggregated level. It was therefore necessary to make a number of assumptions. Although this exercise aimed at maximum accuracy, there are still some areas where the estimates are only approximate. It was therefore decided to assess a range within which the net fiscal impact of the measure for the 2007 tax year is likely to fall. It was also necessary to confine the approach by branch of activity to the estimation of the gross fiscal impact of the risk capital allowance, as the data are still too fragmentary to attempt any disaggregated quantification of its secondary effects on employment, investment or public finances.

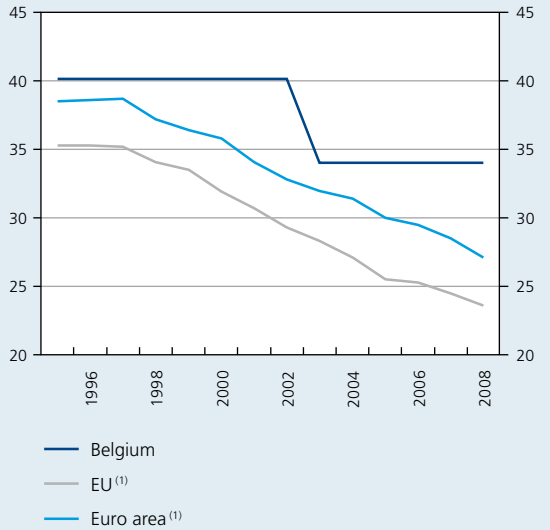
Introduced by the law of 22 June 2005 (1), the risk capital allowance – more commonly known as the "notional interest deduction" – took effect from the 2007 tax year. It enables companies liable for corporation tax to deduct from their tax base a notional amount of interest calculated on the basis of their adjusted equity capital. This arrangement is unique in the sense that no other European Union Member State applies a general system of this type (2).

By this innovative measure, the federal government of the day aimed to achieve various objectives, as revealed by the explanatory memorandum to the draft law.

First, the measure is intended to make Belgium more attractive from the tax angle for both Belgian and foreign investors. It should therefore be assessed in the light of the international trend towards lower nominal corporate tax rates. The same motive lay behind the marked reduction in nominal tax rates on corporate profits, which took effect in Belgium in 2003.

CHART 1 STANDARD NOMINAL RATE OF CORPORATION TAX

(percentages)



Source : EC.
(1) Unweighted average.

(1) Law of 22 June 2005 introducing a tax allowance for risk capital (published in the Moniteur belge on 30 June 2005).

(2) In Croatia, a universal system of tax allowance for equity capital was applied between 1994 and 2001. Brazil and New Zealand have also used a similar arrangement in the past. The same applies to Austria and Italy, although the tax allowance there only applied to increases in capital. In Ireland, Luxembourg and Switzerland, certain categories of companies are eligible for a tax regime which includes the deduction of notional interest.

The measure also aims to boost the equity capital of companies – and hence to improve their solvency – by attenuating the discrimination under the tax rules between debt financing and equity financing. The whole of the interest payable on borrowings can normally be deducted as an operating expense, whereas the profits constituting the remuneration of the equity are taxed in full.

Finally, the measure endeavours to offer a credible alternative to the special tax regime applicable to coordination centres in Belgium, as that system has now entered its final phase and will soon be abolished.

As well as introducing the risk capital allowance, the law of 22 June 2005 abolished the 0.5 p.c. registration fee on contributions to companies. At the same time, compensatory measures were introduced to ensure that the reform was neutral overall in its effect on the government budget.

This study tries to assess the degree to which the objectives announced have been attained. Chapter 1 gives a brief presentation of the measures introduced by the law of 22 June 2005. Chapter 2 analyses the impact of these measures on the financial structure of corporations. Chapter 3 discusses the coordination centres. Chapter 4 examines the macroeconomic impact of the risk capital allowance, particularly its effect on investment and employment. Chapter 5 explains the budgetary implications on the basis of both macroeconomic and microeconomic data, and the transition between the gross tax advantage which Belgian companies obtain from the risk capital allowance – according to data broken down by branch of activity – and the net impact of the measure on the government budget. The main findings are summarised in the executive summary.

It should be stressed that this study of the macroeconomic and fiscal impact of the risk capital allowance is based partly on data which are still provisional. There are also many dynamic effects of which the future pattern is uncertain. At present it is therefore only possible to offer a provisional assessment of this corporation tax reform. A final overall view will only be obtainable in several years' time, once the coordination centre tax regime has been phased out and the full effect of the reform has made itself felt.

1. Content of the law of 22 June 2005

The risk capital allowance was introduced by the law of 22 June 2005, which also abolished the 0.5 p.c. registration fee on contributions to companies. The law simultaneously introduced a number of other measures designed to neutralise the impact on the budget. This section presents briefly the provisions of this law.

1.1 Risk capital allowance

The risk capital allowance enables companies liable for corporation tax to deduct from their tax base an amount of notional interest calculated on the basis of their "adjusted" shareholders' equity.

The rate of the risk capital allowance is equal to the average interest rate on ten-year linear bonds issued by the Belgian State for the penultimate year before the tax year. This means that it is the average interest rate for 2005 (3.442 p.c.) that applies to the 2007 tax year. Since interest rates have been rising, the rate is 3.781 p.c. for the 2008 tax year and 4.307 p.c. for the 2009 tax year. The rate of the risk capital allowance cannot deviate in any year by more than one percentage point from the rate applied in the preceding tax year, nor may it ever exceed 6.5 p.c. For SMEs, the allowance rate is increased by 0.5 percentage point. Moreover, SMEs can opt not to apply the risk capital allowance and to continue using the tax-exempt investment reserve regime [1].

The risk capital allowance applies to all resident companies and to permanent establishments of foreign companies located in Belgium and subject to corporation tax in Belgium [2]. Only companies covered by a tax regime that is different from that under ordinary law, such as the approved coordination centres, conversion companies, investment companies, cooperative holding companies and shipping companies are excluded from this tax allowance regime.

The risk capital to be taken into account corresponds to the equity capital as recorded in the annual accounts of companies minus certain amounts. It is equal to items I to VI on the liabilities side of the balance sheet: capital, share premiums, revaluation gains, reserves, profit carried forward and capital subsidies. The adjustments made to

(1) It should be pointed out that the definition of an SME differs according to whether it is the 0.5 percentage point increase in the risk capital allowance that is being considered, or the option of choosing between the risk capital allowance and the tax-exempt reserve regime.

(2) The risk capital allowance also applies to foreign companies which have immovable property in Belgium, and to non-profit organisations and foundations which are subject to Belgian corporation tax.

the basis for calculating the risk capital allowance are intended to prevent cumulative tax allowances, to exclude assets which are tax-exempt in Belgium under double taxation agreements, and to prevent potential abuse.

In order to prevent cumulative tax allowances, the equity capital is reduced by the net fiscal value of the company's own shares, financial fixed assets consisting of participating interests and other equity, and the shares issued by investment companies whose income, if any, is deductible as finally taxed income. It is also reduced by the net accounting value attributed to permanent establishments or immovable property located abroad, the net accounting value of assets which are unreasonably in excess of business needs, the accounting value of asset items held as portfolio investments which are not destined to produce regular income (works of art, gold, etc.) and the accounting value of property used for private purposes. Finally, capital gains expressed but not realised and capital subsidies are also excluded. Any change in the equity occurring during the tax period is considered *pro rata temporis*[1]. If the tax base is not sufficient for the risk capital allowance to be applied, the allowance can be carried forward for seven years.

The risk capital allowance took effect from the 2007 tax year and therefore applies to corporate profits realised from 2006 onwards. Presumably, most companies will therefore have taken this measure into account in their advance payments of corporation tax in 2006.

For companies established in Belgium, the risk capital allowance means a reduction in the effective corporate tax rate. Its exact impact depends on the return on equity of the company. Thus, for the 2007 tax year, in the case of a company subject to a nominal tax rate of 33.99 p.c., without other tax deductions and having a return on equity of 15 p.c. before tax (if the equity is not subject to any adjustment), this measure reduces the effective rate of tax to 26.2 p.c. For a company with a return on equity before tax of only 5 p.c., the effective tax rate is reduced to 10.6 p.c. The measure is therefore highly advantageous for finance companies which have substantial equity capital and which make a return on their loans which is only slightly higher than the rate on government bonds.

1.2 Abolition of the registration fee on contributions to companies

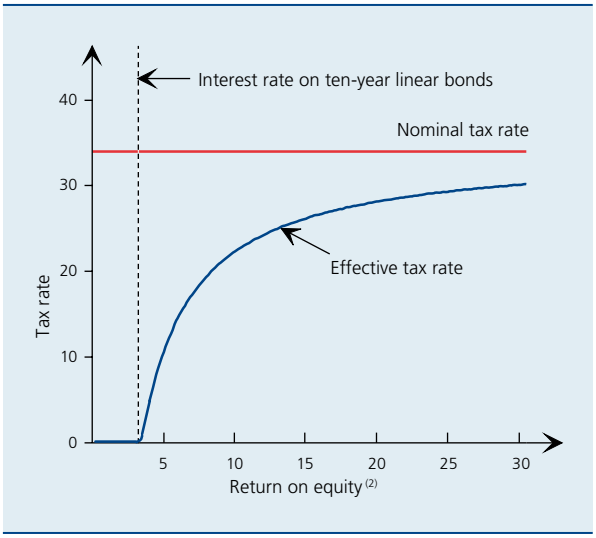
The law of 22 June 2005 also abolished *de facto* the registration fee on contributions to companies, as the rate of 0.5 p.c. was cut to zero whether the contribution concerns movable property, certain immovable property or increases in the authorised capital. This part of the law came into effect on 1 January 2006.

1.3 Fiscal compensatory measures

The law of 22 June 2005 also introduced a series of measures designed to neutralise the impact on the government budget of the introduction of the risk capital allowance and the abolition of registration fees on contributions to companies.

The main fiscal compensatory measure concerns the amendment to the definition of realised capital gains which are tax-exempt, either finally or temporarily. Henceforth, the charges relating to the realisation of capital gains have to be deducted from the amount of the capital gains before the tax exemption applies. This concerns in particular the costs of advertising, notary's fees, agents' fees, bank charges and the taxes on transactions associated with the realisation of capital gains. Since such costs are already tax deductible as business expenses, this is a way of avoiding a duplication of the tax relief.

CHART 2 RETURN ON EQUITY AND EFFECTIVE TAX RATE [1]
(percentages)



Source : NBB.
(1) The chart is based on the rate of the risk capital allowance initially applicable (2007 tax year), namely 3.442 p.c.
(2) The return on equity before tax.

(1) Any change is taken into account on the first day of the month following the change.

Moreover, the percentage of the investment allowance for small firms was reduced to zero[1]. This measure applies to both the one-off investment relief and the staggered allowance, though in the latter case there is provision for a transitional arrangement. The increased investment allowance, such as that for patents and R&D, nonetheless continues to apply.

At the same time, the tax credit system for SMEs was abolished. Previously, SMEs could claim a tax credit equivalent to 7.5 p.c. of the increase in the capital paid up in cash (including share premiums), subject to a maximum of 19,850 euro.

The budgetary cost of the risk capital allowance should also be limited by the anti-abuse provisions laid down by the law, and by the fact that some companies cannot use this new tax allowance. Thus, SMEs which continue to apply the investment reserve regime are excluded from claiming the risk capital allowance during the ensuing three years.

During the debate in the Chamber of Representatives concerning the law of 22 June 2005, the Minister of Finance gave an estimate of the expected impact on the government budget[2]. The decline in public revenues attributable to the risk capital allowance was thus estimated at 506 million euro, and that attributable to the abolition of the registration fee on contributions to companies was put at 60 million euro. The amount raised by the compensatory measures and the expected payback effects should come to exactly the same amount, namely 566 million euro. This tax reform was therefore assumed to be neutral in its effect on the government budget.

(1) However, investments in the production and recycling of reusable packaging may still qualify for the investment allowance.

(2) Belgian chamber of representatives, 31 May 2005, Draft law introducing the risk capital allowance – report on behalf of the Commission for Finance and the Budget, presented by Mr Bart Tommelein.

2. Influence on the financial structure of companies

This section examines how the introduction of the risk capital allowance has affected the financing decisions of companies established in Belgium. It is in fact very much in their interests to review their equity and balance sheet position in order to optimise the potential impact of the risk capital allowance on their effective tax burden. This section first outlines some of the financial options available to companies. Next, it analyses the movement in equity capital. Finally, it investigates whether the stated aim of strengthening corporate solvency will be achieved.

2.1 Possible influence of corporate financial options

For companies, the choice between debt financing and equity financing depends not only on parameters specific to the business – its internal organisation, management method, size, profitability, growth prospects, etc. – but also on tax considerations. The introduction of the risk capital allowance has therefore brought a structural change in the financial behaviour of companies, as it is in their interests to modify their financing structure in order to make maximum use of the tax advantage which this measure offers them. Consequently, companies may be tempted to expand the basis for calculating the risk capital allowance, namely their adjusted equity capital, by increasing the amount of their capital or reducing the elements deducted from it.

The various techniques for optimising the financing structure are not all the same in their impact on Belgian public finances, as illustrated by the examples below.

The risk capital allowance attenuates the discrimination against equity as opposed to borrowings and reduces the relative cost of equity capital. As a result, a company may choose to substitute equity for borrowings or to finance new investments with more of its own capital rather

DIAGRAM 1 REPLACEMENT OF BORROWINGS WITH EQUITY

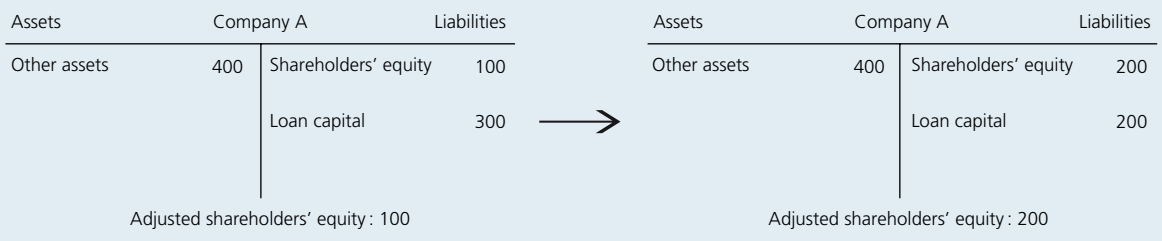
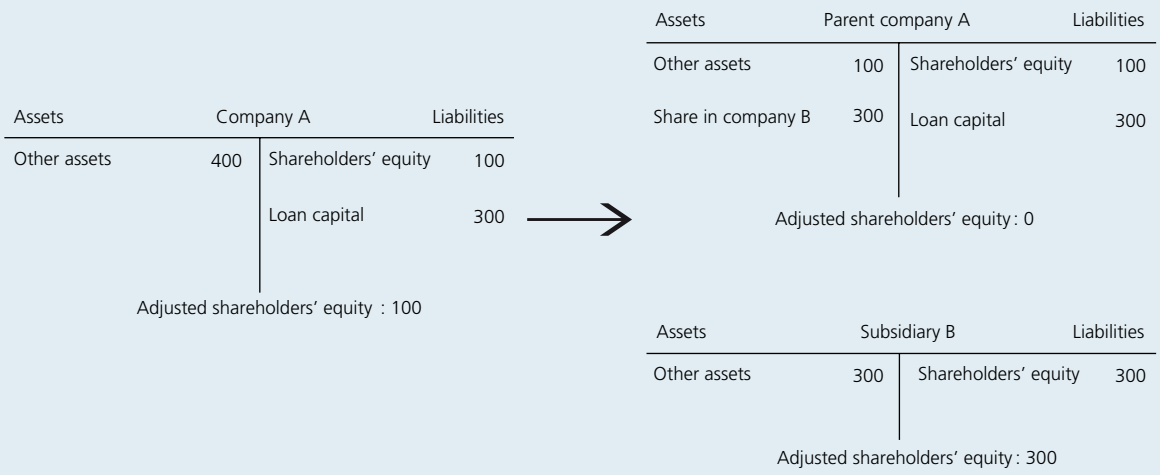


DIAGRAM 2 CREATION OF A SUBSIDIARY TO TAKE OVER THE MAIN ACTIVITIES



than with loans. An example of a substitution movement between borrowings and equity financing is shown in diagram 1. This is not normally accompanied by any loss of corporation tax revenues since the interest deductible against tax is replaced by a tax-deductible percentage of the new equity capital. Since companies generally pay a higher rate on their borrowings than the interest rate on linear bonds, this movement could even, in principle, generate higher corporation tax revenues.

Apart from the phenomenon of substitution between debt and equity financing, tax considerations may sometimes make it more advantageous for companies to operate via subsidiaries as in the example in diagram 2 [(1)]. In that case, the parent company retains all its financial resources comprising equity and borrowings and uses those funds to capitalise its subsidiary. In view of its shareholding in the subsidiary, the parent company is not eligible for the risk capital allowance, but it may continue to deduct from its tax base the amount of the interest paid on the capital which it has borrowed. Conversely, the subsidiary can use the risk capital allowance for the whole of its equity capital.

It should be pointed out that in this specific example, the total amount on the basis of which the allowance can be used is higher than the amount of the parent company's equity capital. In such arrangements, the risk capital allowance is therefore partly converted to an additional deduction based on the group's loan capital. Such optimisation techniques only appear to strengthen the solvency of the group of companies and could entail substantial additional costs for the government budget.

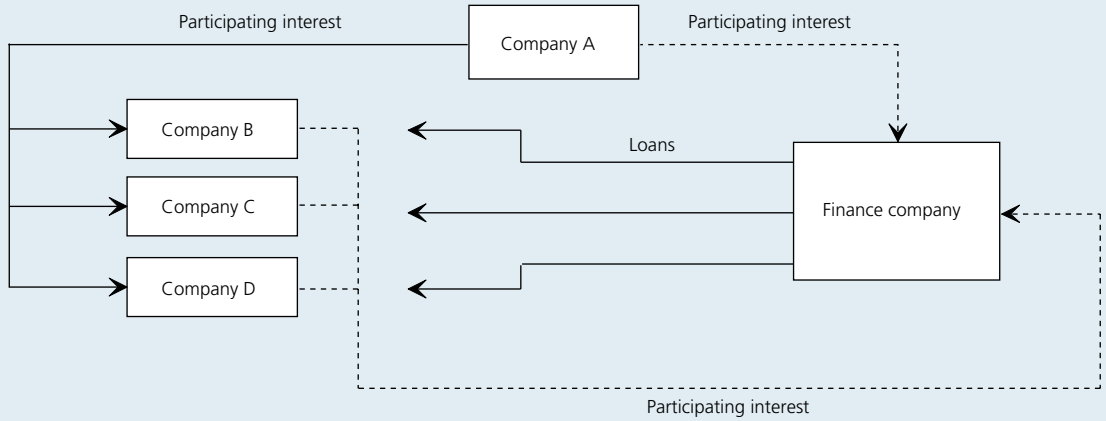
The formation of a finance company within a group of companies may also be attractive in tax terms. Such finance companies are capitalised mainly by the parent company or by several companies belonging to a group. These companies provide finance for affiliated companies based in Belgium or abroad, and thus take on the role of the group's "internal banker". Finance companies are therefore fairly similar to coordination centres in terms of their activity and financial structure. Thus, on expiry of their approval the coordination centres can adopt the form of a finance company. One characteristic of these companies is that they have very substantial equity and essentially obtain their income by charging interest on the loans which they grant to other group companies. Consequently, their return on equity is on average fairly low and they succeed in reducing their effective tax rate to a very low level by means of the risk capital allowance.

On the basis of techniques designed to optimise the balance sheet structure for tax purposes, a few examples of which have been described, a considerable increase in shareholders' equity following the introduction of the risk capital allowance could *a priori* be expected. Also investments in associated companies could be expected to show a marked rise, primarily as a result of the formation of finance companies.

In reducing the effective rate of corporation tax, the tax reform could also cause more operators to pursue their activities in the form of a company. Their number could therefore increase, along with the equity capital. Such

(1) Such restructuring cannot take place purely for tax reasons; economic considerations must also apply.

DIAGRAM 3 CREATION OF A FINANCE COMPANY



a development could cause a shift away from taxes on earned incomes and towards corporation tax, resulting in lower revenues for the government.

2.2 Changes in the authorised capital

Since the risk capital allowance was introduced, there has been a noticeable rise in the authorised capital and hence in the shareholders' capital of companies established in Belgium (1).

In 2006, the net additional capital, namely the difference between the increase in capital due to the formation of companies or equity increases and the decline in capital due to equity reductions, came to 102 billion euro. Capital increases were more than double the figure recorded during the economic boom at the turn of the millennium. Capital added via company formations also increased in 2006. Conversely, there was hardly a change in equity reductions.

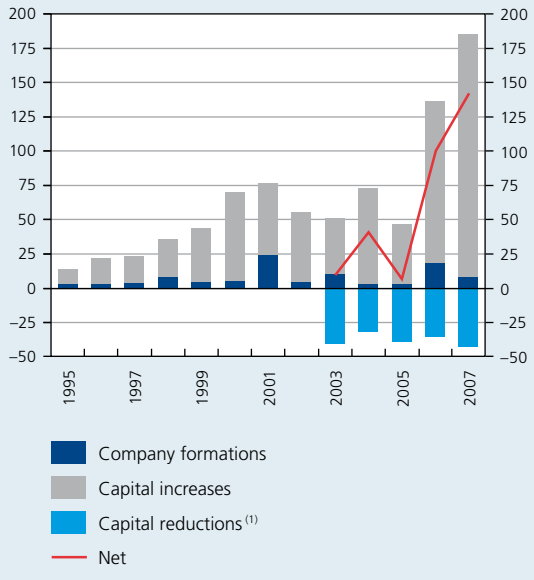
In 2007, the net additional capital increased again to 141 billion euro. A very sharp rise in the equity capital was again recorded in the first quarter of 2008, indicating that the dynamic effects generated by the introduction of the risk capital allowance are still perceptible.

The breakdown of net movements in the authorised capital shows that capital contributions of both domestic and foreign origin increased substantially to around 50 billion euro each in 2006. In contrast, foreign capital contributions exceeded those of domestic origin in 2007.

Capital contributions of Belgian origin were financed mainly by non-financial corporations and financial institutions. That indicates that those companies are investing more in other companies established in Belgium. However, on a consolidated level in Belgium this does not

CHART 3 CHANGES IN THE AUTHORISED CAPITAL OF COMPANIES

(billions of euros)



Source : NBB.

(1) The statistics on capital reductions have only been compiled since 2003.

(1) Since any amendments to the articles of association of a Belgian company have to be published in the Moniteur belge annexes, almost all changes in the authorised capital of companies may be found there, except for the variable capital of cooperative societies.

TABLE 1 NET CHANGES IN THE AUTHORISED CAPITAL[1]
(billions of euros)

	2004	2005	2006	2007
Net additional capital	40	13	102	141
of which: influence of the coordination centres	*22*	*1*	*1*	*13*
Domestic origin	3	2	48	56
of which: influence of the coordination centres	*0*	*–2*	*4*	*3*
Non-financial corporations	4	0	24	14
Financial institutions	0	1	19	34
Households	1	1	4	7
Other	–2	0	1	1
Foreign origin	36	10	51	75
of which: influence of the coordination centres	*22*	*3*	*–3*	*10*
Indeterminate origin	1	0	3	10

Source: NBB.
(1) The data on capital increases and reductions were adjusted for transactions which have no impact on the basis for calculating the risk capital allowance, such as the incorporation of reserves in the authorised capital.

lead to an increase in shareholders' capital. Conversely, the capital contribution resulting from capital invested by households resulted in an increase in the equity capital of Belgian companies at consolidated level[1].

The considerable contribution of capital from other countries led to a rise in the authorised capital of Belgian companies while strengthening their financial autonomy, at least at Belgian level. These capital inflows partly reflect a move to substitute capital injections for current loans granted by foreign companies. In addition, the risk capital allowance has done much to encourage the formation of finance companies, allowing a large proportion of the authorised capital to flow back out to other countries in the form of loans.

The record capital contributions from abroad recorded in 2006, and particularly in 2007, seem to indicate that the risk capital allowance has succeeded in making Belgium attractive from the tax angle. It is unclear exactly how these inflows will affect the Belgian economy, but in principle they do not entail any budgetary costs for the government. Since they may lead to changes in the allocation of the profits of international groups and cause the tax base or other components of taxation to shift towards Belgium, it is even possible that they may have a positive effect on corporation tax revenues in Belgium. On the other hand, the capital flows and the associated shifts in the various components of taxation could depress government revenues in other countries.

2.3 Change in shareholders' equity

The change in the shareholders' equity is influenced not only by fluctuations in the authorised capital but also by movements concerning the reserves or the profit or loss carried forward. In 2006 there was very sustained growth – in the order of 105 billion euro – in the equity capital of Belgian companies other than the coordination centres[2].

The increase in the equity capital concerned both SMEs and large corporations, credit institutions and insurance companies. However, the most sustained increase – namely 67 billion euro between 2005 and 2006 – was recorded in the equity capital of finance companies which file their annual accounts with the Central Balance Sheet Office: these are mainly financial holding companies, finance companies, investment companies and the financial centres of large business groups. This category comprises a number of new companies and the companies which perform the role of finance centres for multinational groups.

(1) The increase in capital originating from households may also be due in part to the fact that self-employed persons are now pursuing their activities in the form of a company.

(2) Changes in the situation concerning the shareholders' equity of companies can be monitored on the basis of the non-consolidated annual accounts filed with the Central Balance Sheet Office, the scheme A accounts of credit institutions and the balance sheet data forwarded to the CBFA by insurance companies. The figures may differ from those relating to changes in the authorised capital, notably on account of the change in the allocation of the profits and losses, but also because of time lags between the date of establishment and capital increases and the first occasion on which annual accounts are filed.

TABLE 2 EQUITY POSITION OF BELGIAN COMPANIES[1]

(billions of euros)

	Equity position			Change	
	2004	2005	2006	2004-2005	2005-2006
Non-financial corporations	230	255	286	25	31
Large corporations	173	193	215	20	22
SMEs	58	63	72	5	9
Finance companies filing their annual accounts with the Central Balance Sheet Office	207	225	292	18	67
Credit institutions and insurance companies	44	43	49	–1	7
Total	**481**	**523**	**628**	**42**	**105**

Sources: CBFA, NBB.

(1) Excluding the equity capital of the coordination centres.

Not only did companies other than SMEs record sustained growth of their equity in 2006, their investments in associated companies also grew strongly, by 53 billion euro[1].

The data on the increase in the authorised capital show that these investments were largely acquired in Belgian companies.

(1) The figures on investments in associated companies are not available for SMEs.

(2) Foreign direct investment was assessed mainly on the basis of the results of the annual direct investment survey conducted by the Bank since 1997. That survey considers the outstanding amount of the inward and outward foreign direct investment of a population of resident firms which, though not totally exhaustive, is comparable over time. The firms taken into account in the survey are selected on the basis of accounting criteria, and it is possible to take account of both direct and indirect shareholdings between companies in the same group. It is also possible to consider the foreign capital contributions of each company in relation to their use in terms of foreign direct investment and thus to measure the importance of the financial interchange role performed by certain multinational group companies.

2.4 Movement in foreign direct investment

The movement in foreign direct investment, for which the latest figures relate to the year 2006, seems to confirm the findings based on the changes in the authorised capital[2].

TABLE 3 MOVEMENT IN OUTSTANDING FOREIGN DIRECT INVESTMENT

(capital held solely via direct shareholdings; billions of euros)

	2001	2002	2003	2004	2005	2006
Belgian foreign investment	**223**	**234**	**258**	**282**	**326**	**322**
Equity capital	112	114	135	158	165	140
Investments in the authorised capital[1]	91	96	104	115	125	111
Revaluation gains, reserves and profits/losses carried forward	21	18	31	43	39	29
Interfirm loans	111	120	123	124	161	182
Foreign investment in Belgium	**242**	**251**	**269**	**292**	**320**	**361**
Equity capital	192	193	205	220	247	287
Investments in the authorised capital[1]	152	169	173	184	192	214
Revaluation gains, reserves and profits/losses carried forward	40	24	32	37	55	73
Interfirm loans	51	57	64	72	73	75

Source: NBB.

(1) Including share premiums.

According to the annual survey results, the outstanding amount of Belgium's foreign direct investment contracted by 4 billion euro in 2006, to 322 billion. This decline was attributable largely to a relatively small number of firms. The total net authorised capital held by Belgian companies in the rest of the world was down by 25 billion euro, while foreign loans granted by Belgian companies increased by 20 billion euro.

Foreign direct investment in Belgium was up from 320 billion euro in 2005 to 361 billion in 2006, an increase of 41 billion. Virtually all these contributions of funds to resident companies took the form of authorised capital; this concerned almost exclusively the strengthening of existing foreign direct investment links.

In 2006, Belgian companies largely preserved their traditional role of intermediary in the financial transactions of multinational companies, although the pattern of inward foreign direct investment deviated somewhat from the usual profile. A particular feature seen this year was the greater involvement of companies other than the coordination centres in foreign direct investment flows.

In 2006, some of these finance companies other than coordination centres obtained new foreign capital contributions, totalling 113 billion euro. They used these financial resources primarily to grant loans to foreign firms amounting to 65 billion euro. Thus, whereas they used to reinvest these funds most frequently in the form of equity capital, their transactions are now similar to those of the coordination centres. At the same time, they have retained in Belgium a larger percentage of the incoming investment than in the past, namely 45 billion euro.

Other Belgian firms recorded in 2006 a decline in the amount of their capital owned by foreign shareholders, or they repaid loans which they had been granted. This caused a reduction of 53 billion euro in foreign assets invested in these firms, half of which was offset by

TABLE 4 CAPITAL MOVEMENTS IN BELGIAN AFFILIATES OF FOREIGN COMPANIES, EXCLUDING COORDINATION CENTRES

(capital invested via direct shareholdings[1]; billions of euros)

	2001	2002	2003	2004	2005	2006
1. Foreign capital contributions to resident firms	**52**	**35**	**38**	**42**	**41**	**113**
1.1 Funds reinvested abroad by the firms concerned	19	17	19	22	10	68
In the form of equity capital	17	12	16	17	3	3
In the form of interfirm loans	2	5	3	4	6	65
1.2 Foreign capital contributions remaining in Belgium	32	18	19	20	32	45
2. Foreign capital withdrawals from resident firms	**23**	**40**	**29**	**21**	**25**	**53**
2.1 Disinvestment of foreign funds by the firms concerned	–1	12	2	3	–1	26
In the form of equity capital	–1	9	–3	2	–2	20
In the form of interfirm loans	0	3	4	1	1	6
2.2 Foreign capital withdrawals not offset by foreign disinvestments	23	28	27	18	26	27
Change in inward foreign direct investment (1 – 2)	**29**	**–6**	**9**	**21**	**16**	**60**
Net foreign investment by the firms concerned (1.1 – 2.1)	20	5	17	18	11	42
Actual capital increase (+) or reduction (–) in the firms concerned (1.2 – 2.2)	9	–11	–8	2	5	18

Source: NBB.

(1) Direct shareholdings are defined by the holding of at least 10 p.c. of the shares or voting rights.

the recovery of assets which they themselves had held abroad.

In net terms, the increase in inward foreign direct investment in firms other than coordination centres came to 60 billion euro in 2006. Taking account of the foreign direct investment effected by these firms themselves, their financial resources thus increased by 18 billion euro in 2006, compared to 5 billion in 2005. As is often the case, this overall picture is dominated by a few firms effecting very large transactions.

The coordination centres also received a large net inflow of capital, amounting to 44 billion euro in 2006, compared to a reduction of 19 billion in 2005 (cf. the table in Annex 3). This is attributable mainly to the repayment of interfirm loans to one of these centres, while there was a substantial fall in the foreign investment which they received.

The evident concentration of funds invested in the form of equity capital in Belgium and the increase in loans to foreign firms are both in line with the pattern expected following entry into force of the system of the risk capital allowance. The financial arrangements previously set up via coordination centres now seem to have been transferred to other finance companies.

2.5 Newly formed finance companies

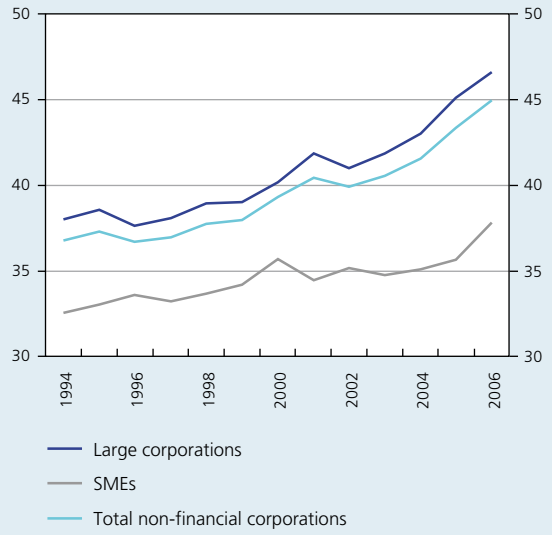
Around 5,350 new finance companies filing their annual accounts with the Central Balance Sheet Office were registered in 2005 and 2006. Altogether, the equity capital issued by these new companies grew by around 42 billion euro, compared to an expansion of 85 billion for finance companies as a whole. These new finance companies are very diverse. The 14 largest ones on their own account for an increase in equity capital in the order of 32 billion euro. The authorised capital of these companies mainly comes from abroad: the finance centres of a few large multinational groups have been set up in Belgium, and groups of Belgian firms have repatriated funds from abroad. On the basis of the annual accounts for 2006, the profits and taxes reported by these companies, the implicit tax rate for these companies can be estimated at around 4 p.c.

2.6 Solvency

The non-consolidated data of the Central Balance Sheet Office indicate that non-financial corporations established in Belgium have already for some time been recording an increase in the share of the equity capital in the total

CHART 4 DEGREE OF FINANCIAL AUTONOMY (1)

(percentages, end-of-year data)



Source : NBB.

(1) The degree of financial autonomy is defined as the percentage of the equity capital in the total liabilities of non-financial corporations. The data are non-consolidated.

liabilities. This trend towards greater financial autonomy clearly intensified in 2005 and 2006, possibly indicating an improvement in the solvency of Belgian companies.

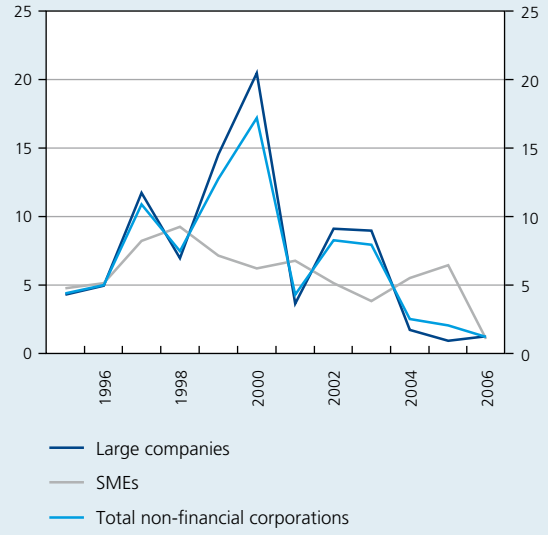
However, this finding calls for certain reservations. As already mentioned, a large proportion of the increase in equity capital is due to shareholdings acquired by other associated firms. This traditional measure of the solvency of companies in general could therefore present a biased picture of the actual improvement in the solvency of Belgian firms (1).

However, it seems that in 2006 the rise in the loan capital of non-financial corporations filing their annual accounts with the Central Balance Sheet Office did slow down in both absolute and relative terms, falling to its lowest level for ten years, whereas during other boom periods there had been a sustained expansion in loans. This appears to indicate that firms have made relatively less use of debt financing. One possible explanation lies in the replacement of current foreign loans with investments in the authorised capital. However, the slower expansion of loan capital was evident mainly in the case of SMEs, where it is reasonable to suppose that foreign investments are

(1) It would be preferable to determine the solvency of Belgian companies on the basis of consolidated balance sheet data, but such information is not available.

CHART 5 LOAN CAPITAL OF NON-FINANCIAL CORPORATIONS

(percentage changes)



Source : NBB.

relatively less significant. These factors suggest that the risk capital allowance has led to a strengthening of the solvency of non-financial corporations.

3. An alternative to the coordination centres ?

This section looks at the Belgian fiscal regime applicable to coordination centres, as the introduction of the risk capital allowance was also intended to offer an alternative to these centres. Thus, it briefly explains the coordination centre regime before describing the developments concerning the number of these centres and their capital transactions. Finally, it reviews employment in the coordination centres and in the new finance centres.

3.1 The coordination centre tax regime

The Belgian rules on coordination centres apply to companies which take on the management of the financial flows of other companies belonging to a multinational group [1]. The advantageous tax rules for coordination centres were introduced in 1982. During the debates which began in the late 1990s concerning tax regimes which could distort competition, the Ecofin Council finally decided that this regime was a harmful tax measure implying a form of unfair competition, so that it had to be abolished. The abolition of this regime also resulted from the European Commission's decision, in 2003, that it was incompatible with the current rules on State aid. The regime is to be phased out altogether by the end of 2010.

The tax concession enjoyed by coordination centres was estimated at just under 1.9 billion euro for the 2004 tax year [2]. The economic impact of these centres on the Belgian economy and the real influence of the tax concession on Belgian public finances are very difficult to assess, and are beyond the scope of this study. The activities pursued by the coordination centres are in fact highly mobile, and most of them probably would not have been located in Belgium in the absence of these advantageous tax rules.

One of the aims of introducing the risk capital allowance was to enable Belgium to offer an alternative to the coordination centres at a time when they were losing or relinquishing their approval. This alternative obviously had to be acceptable in a European context. On expiry or relinquishment of their approval, coordination centres come within the scope of the ordinary rules on corporate taxation, and can therefore use the risk capital allowance. Coordination centres are notable for the substantial equity capital at their disposal – in the order of 170 billion euro in 2006, taking all coordination centres together – and for the relatively low return which they generally obtain on that equity. Coordination centres obtain their main revenue from charging interest on loans to other group companies. These various factors mean that the risk capital allowance may offer a good alternative to the coordination centres.

3.2 Change in the number of coordination centres

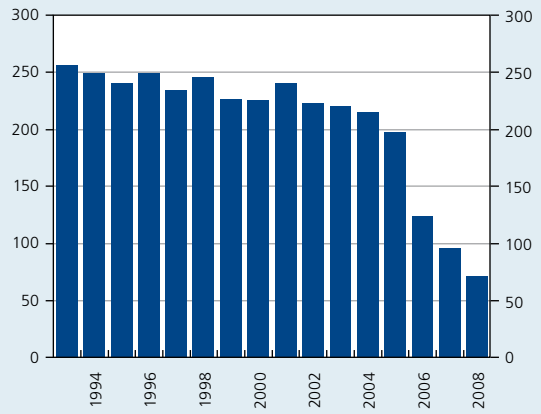
The FPS Finance has a list of coordination centres which have been granted official approval, for some specific points in time. It is not possible to state with certainty that a coordination centre approved by the tax authority is actually active and does not complete an ordinary corporation tax return [3]. That is why it is interesting to analyse

(1) To qualify for coordination centre approval, the company must belong to a multinational group with consolidated capital of at least 24 million euro and a consolidated annual turnover of at least 240 million euro. The foreign equity must total at least 12 million euro or 20 p.c. of the group's consolidated foreign equity capital. After two years, the coordination centre must employ at least ten full-time workers.

(2) Belgian Chamber of Representatives, State revenue and resources budget for the 2006 fiscal year – Annex : 2005 list of exemptions, abatements and reductions influencing the State revenues.

(3) On the basis of a comparison of the tax returns relating to the 2006 and 2007 tax years, it seems that a number of coordination centres which had applied for exemption of their profits under the coordination centre system in 2006 opted to replace this preferential tax regime by applying the risk capital allowance for the 2007 tax year. This may indicate the attractions of the risk capital allowance system for some of them.

CHART 6 CHANGE IN THE NUMBER OF COORDINATION CENTRES (1)



Sources : FPS Finance, NBB.

(1) Estimate based on the special tax that coordination centres have to pay on their employees. For 2008, this concerns the number of coordination centres holding FPS Finance approval in March of that year.

the annual change in the number of active coordination centres on the basis of the special tax which these centres have to pay on their first ten employees.

The number of coordination centres approved and active had already declined somewhat during the 1990s and at the start of this decade. The figure had in fact dropped from just over 250 in 1993 to around 200 in 2005. However, this downward trend has become much more marked since 2005. It is attributable mainly to the restrictions imposed by the European Commission on the renewal of coordination centre approvals.

It is also evident from the detailed FPS Finance data that the number of approved coordination centres has slumped in the past few years, dropping from 226 in 2004 to 146 in November 2007. Since the European Commission decision of 13 November 2007 restricted the transitional measures, a number of coordination centres lost their approval at the end of 2007. According to the latest figures, around 74 coordination centres were still active in March 2008.

For the purposes of the analysis below, the coordination centres are divided into different groups according to whether they still possess approval or, if that is no longer the case, according to the date on which they lost it. A further distinction is made between the centres which have been wound up and those which are still active in a different form.

(1) If, at the time of a capital transaction effected by a coordination centre, an identical capital transaction in the opposite direction is effected simultaneously by a Belgian partner of the multinational group, the counterparty which was previously a foreign partner becomes a Belgian partner.

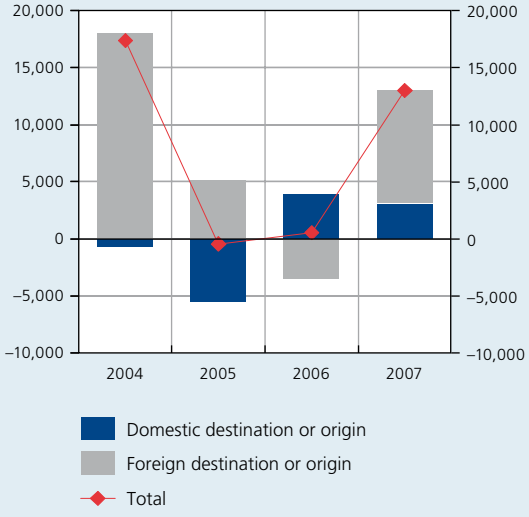
3.3 Capital transactions by coordination centres

On the basis of the list of coordination centres approved in 2004 by FPS Finance, the capital transactions effected by these centres were examined; for that purpose, a distinction was made according to whether the counterparty was based in Belgium or abroad (1). The detailed figures are set out in Annex 4. Identification of the counterparty is important not only to determine the percentage of the capital remaining in Belgium, but also to assess the budgetary cost of the risk capital allowance. If, on liquidation of a coordination centre or a substantial reduction in its capital, the capital is transferred to another Belgian company in the group, that increases the basis for calculation of the risk capital allowance, in contrast to a situation in which the capital is injected into foreign companies.

It is important to note that the marked fall in the number of approved coordination centres has not so far led to any substantial net outflows of capital from coordination centres approved in 2004. Indeed, a net capital increase

CHART 7 NET CHANGES IN THE AUTHORISED CAPITAL OF COORDINATION CENTRES STILL APPROVED IN 2004 (1)

(millions of euros)



Source : NBB.

(1) Difference between increases and reductions in the authorised capital, making a distinction between capital transactions according to whether their destination or origin is domestic or foreign.

of 30 billion euro was recorded in the period 2004-2007. Only in 2005 was there a small, net reduction in the authorised capital. Moreover, leaving aside 2006, the increase in the authorised capital is attributable mainly to inflows of foreign capital.

It is possible to divide the capital transactions between coordination centres which were still approved in March 2008 and those which had already lost their approval.

In 2004 and 2005, coordination centres which had been approved by the tax authorities and had lost or relinquished that approval between 2004 and November 2007 recorded substantial outflows of capital amounting to 24 billion euro, mainly as a result of liquidation. While the recorded counterparty was a foreign partner for half of the capital outflows in 2004, the bulk of those outflows went to Belgian companies in 2005. Since 2006, however, capital outflows from coordination centres which are still active have ceased, and there has actually been a net increase in the authorised capital.

The coordination centres whose approval expired recently – between November 2007 and March 2008 – did not record any marked change in their authorised capital during the period 2004-2007. Three centres have increased their capital since losing their approval, and five others have reduced their capital. These transactions generated substantial net inflows of foreign capital during this brief period, and more particularly in the first three months of 2008.

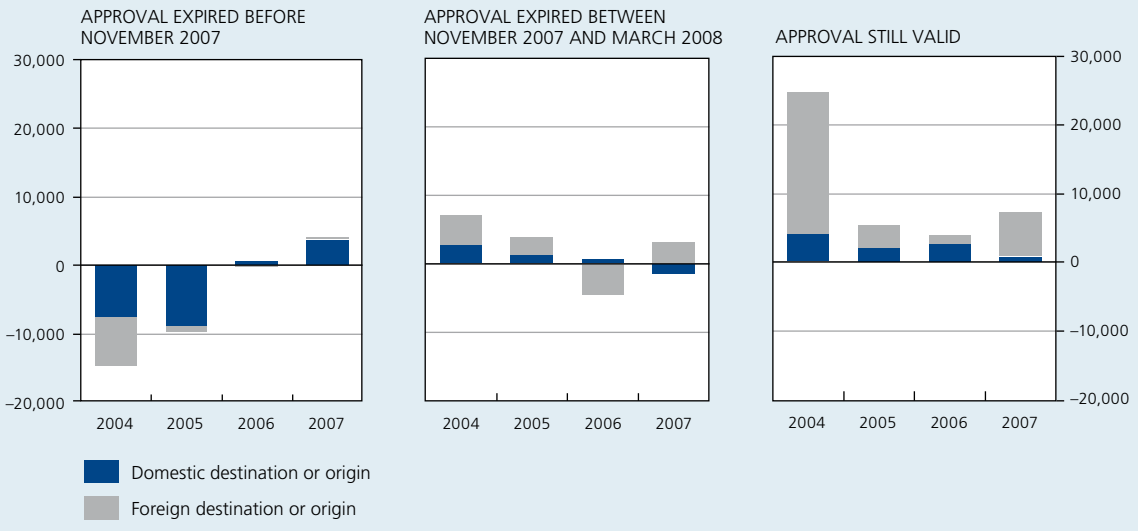
The coordination centres which had not yet lost their approval in March 2008 recorded a considerable increase in their capital between 2004 and 2007.

Approved coordination centres do not form a homogenous group; the bulk of the capital is concentrated in just a few dozen centres. The data on the equity position show that the coordination centres which recently lost their approval and those which are still approved are the main ones that still have relatively substantial equity capital. In 2006, these two groups each had equity totalling around 70 billion euro. Any analysis of the impact of the risk capital allowance on capital transactions effected by coordination centres is therefore very provisional.

Between 2004 and 2008, a number of coordination centres terminated their activities in Belgium and their capital was transferred abroad, even after the introduction of the risk capital allowance. However, whereas in 2004 the coordination centres which had lost their approval were often in liquidation and had distributed their authorised capital among their various – largely foreign – shareholders, the trend now seems to have been reversed, since no further substantial capital outflows have been recorded.

CHART 8 NET CHANGES IN THE AUTHORISED CAPITAL OF COORDINATION CENTRES STILL APPROVED IN 2004 ACCORDING TO THEIR RECENT STATUS (1)

(millions of euros)



Source : NBB.

(1) Difference between increases and reductions in the authorised capital, making a distinction between capital transactions according to whether their destination or origin is domestic or foreign.

The absence of significant capital outflows from the coordination centres during the second half of 2007 and the beginning of 2008 seems to be a sign that many coordination centres regarded the risk capital allowance as an acceptable alternative.

3.4 Employment in the coordination centres

The data obtained from the social balance sheets show that, in the coordination centres approved in 2004, employment dropped from 9,510 persons at the end of 2003 to 8,616 persons at the end of 2006, a decline of around 900 persons.

This decline is due mainly to the coordination centres whose approval expired and which were liquidated or ceased operating during this period. At the end of 2004, employment in these coordination centres still amounted to around 1,200 persons. Those jobs were not necessarily lost to the Belgian economy since the workers were transferred to other group companies in a number of important cases.

Employment in the coordination centres whose approval had expired in March 2008 but which were still active in 2006 declined by around 200 persons between the end of 2003 and 2006. Conversely, in the coordination centres whose approval had not yet expired in March 2008, employment expanded by around 500 persons.

If Belgium can attract new finance centres belonging to multinational groups, that could stimulate employment and offset the job losses in coordination centres whose capital and activities have been transferred abroad. At first sight, these new finance centres employ few people at the moment.

4. Impact on investment and employment, and macroeconomic payback effects

The potential impact of the risk capital allowance on the Belgian economy is assessed by means of the Bank's quarterly "Noname" model. As in most models, this assessment is conducted by considering that the effects of corporate taxation on company decisions will be felt via the change in the user cost of capital. However, macroeconomic models – which largely ignore the effects of distortionary taxes, particularly in regard to the location of economic activities – cannot readily be used to simulate measures modifying the tax system. For example, it is not possible to quantify how such a measure in favour of the results of decision centres and coordination centres will affect the maintenance or expansion of their activities in Belgium.

In the long term, corporate investment demand depends on output and the ratio between the capital cost and the production price. In the short term, these investments are

TABLE 5 EMPLOYMENT IN THE COORDINATION CENTRES STILL APPROVED IN 2004

(number of persons, situation at end of year)

	p.m. Number of coordination centres	2003	2004	2005	2006
Total	***226***	**9,510**	**9,419**	**9,411**	**8,616**
Approval expired between 2004 and September 2006	*44*	986	796	551	536
Liquidated or not active in 2006	*30*	595	386	151	0
Active in 2006	*14*	391	410	400	536
Approval expired between September 2006 and November 2007	*36*	1,171	1,192	1,201	559
Liquidated or not active in 2006	*14*	593	580	574	0
Active in 2006	*22*	578	612	627	559
Approval expired between November 2007 and March 2008	*72*	4,066	3,886	4,002	3,711
Approval still valid in March 2008	*74*	3,287	3,545	3,657	3,810

Sources: FPS Finance, NBB.

TABLE 6 EFFECTS OF THE REDUCTION IN THE COST OF CAPITAL[1] IN A SCENARIO OF *EX ANTE* BUDGET NEUTRALITY

(differences in relation to the baseline simulation; millions of euros, unless otherwise stated)

	Year 1	Year 2	Year 3	Year 4	Year 5
Investments	80	330	420	420	420
Employment (units, end of period)	200	1,400	2,400	2,900	3,200
Primary budget balance	10	60	110	110	100

Source: NBB.
(1) Excluding effects of any compensatory measures on the cost of capital.

also influenced by an additional accelerator effect generated by cash flows. The risk capital allowance was introduced in the model simulation in two stages. First, via a reduction in the user cost of capital, on the basic assumption that this tax measure would be neutral *ex ante* for the general government budget. In a second phase, an increase in corporate cash flows was also introduced. To assess the measure's *ex ante* effect on corporate cash flows, it is necessary to know its budgetary cost, or more precisely a transfer of resources from the government to the business sector. This cost is particularly difficult to assess, since the measure does not relate only to new investments by firms, but concerns their entire balance sheet. That assessment therefore entails accounting and tax definitions which are beyond the scope of the model. In addition, the risk capital allowance is accompanied by a set of compensatory measures concerning corporate taxation, the impact of which is difficult to assess by means of a macroeconomic model. This second simulation is based on the assumption that, as a result of this tax measure, firms will pay, *ex ante*, one billion euro less each year by way of corporation tax; that corresponds to a reduction in government revenues totalling 0.3 p.c. of GDP. The effects of any measures designed to offset the impact on the government budget of this reduction in revenues are disregarded.

The results of the simulation of the reduction in the cost of capital with no *ex ante* budgetary cost are presented first. Long-term investment demand reacts to both output and the user cost of capital. The reduction in the cost of capital stimulates investment demand which in turn boosts domestic demand and demand for imports. The strengthening of domestic demand is reflected in higher employment and lower unemployment. If the *ex ante* budgetary cost of the measure is zero, corporate investments increase by a maximum of 420 million euro, and employment expands by around 3,200 units. Such a measure modifying the tax system that is related to investment funding has practically no effect on prices. More detailed results are presented in Annex 5.

The second simulation incorporates the effects of a reduction in corporation tax totalling one billion euro per annum. If the measure reduces total corporate taxes, that boosts the cash flows available to firms. These additional cash flows generate higher investment, on top of that resulting from the substitution of capital for labour in

TABLE 7 EFFECTS OF THE REDUCTION IN THE COST OF CAPITAL[1] ACCOMPANIED BY AN *EX ANTE* BUDGETARY COST OF ONE BILLION EURO PER ANNUM

(differences in relation to the baseline simulation; millions of euros, unless otherwise stated)

	Year 1	Year 2	Year 3	Year 4	Year 5
Investments	130	600	850	900	900
Employment (units, end of period)	300	2,400	4,700	6,000	6,700
Primary budget balance	–990	–900	–790	–760	–770

Source: NBB.
(1) Excluding effects of any compensatory measures on the cost of capital.

response to the reduction in the cost of capital. This cash-flow effect is greater the higher the *ex ante* budgetary cost, and hence the impact on cash flows. For an *ex ante* budgetary cost of one billion euro, the effect on corporate investment would be 900 million euro maximum, and the impact on employment would come to 6,700 units. Apart from a very small increase in personal income tax and social contributions resulting from job creation, the payback effects on public finances are relatively minor.

On the basis of individual data obtained from the social balance sheets, a multivariate analysis was also conducted on the employment growth rate between 2005 and 2006, taking account of the risk capital allowance, the industry and the company's size and age. The risk capital allowance seems to have a positive but marginal impact on employment [1]. There is no point at present in conducting a specific analysis on the effects of the introduction of the risk capital allowance on employment by industry, in view of the very limited macroeconomic effect on employment in the first year following the introduction of such a measure.

Since the measure took effect in 2006, what is being assessed is the measure's spin-off effect on employment. However, it takes time for firms to adjust their employment, so that it is not surprising that the effect measured is marginal. These results are in line with those obtained at macroeconomic level by the model, which indicated that the measure would have weak effects on employment in the first year.

5. Implications for the government budget

The budgetary implications of the risk capital allowance and the other measures provided for by the law of 22 June 2005 are not easy to assess. In fact, it is essential to distinguish between the gross tax advantage which the tax allowance represents for companies, which can be calculated on the basis of the adjusted equity capital as reported on the corporation tax return forms, and the real impact of this measure on Belgian government revenues.

This section begins by examining the budgetary implications of this corporate income tax reform from a macroeconomic perspective. That approach provides an indication of the reform's impact on public finances. There follows a detailed analysis based on microeconomic data which, on the basis of the gross tax advantage enjoyed by companies since the introduction of the risk capital allowance, proceeds to examine the reform's net impact on the government budget. Finally, this section discusses the potential future influence of various dynamic effects of the reform on public finances.

5.1 Macroeconomic analysis of the tax on corporations

The taxes levied on corporate profits totalled 3.7 p.c. of GDP in 2007, corresponding to around 7.5 p.c. of total public revenues. Corporation tax therefore exceeded by 0.3 p.c. of GDP the level which it had reached in 2005, the year preceding the introduction of the risk capital allowance. In comparison with 2003, revenues increased by no less than 0.8 p.c. of GDP, or almost a quarter. Consequently, both the corporation tax revenues and their share in total revenues are at a historically high level.

The movement in corporation tax as a percentage of GDP can be divided into two components, namely the movement in the tax base for the corporation tax and the movement in the implicit tax rate.

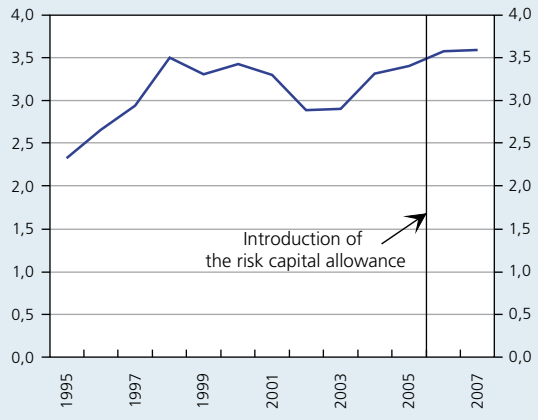
The gross or net operating results of the companies plus the net rents, the net property incomes imputed to insurance policy holders and the net interest received, constitute a macroeconomic indicator which, overall, moves in line with the tax base [2].This macroeconomic approximation of the tax base has grown steadily since 2001 in relation to GDP, except for a minor dip in 2007.

(1) In this microeconomic analysis, the risk capital allowance could also partially capture the effect on employment of the firm's profitability or improved solvency.

(2) The tax definition of depreciation differs significantly from that used in the national accounts. That is why the implicit rates calculated on the basis of both the net and the gross operating results are mentioned here.

CHART 9 CORPORATION TAX REVENUES

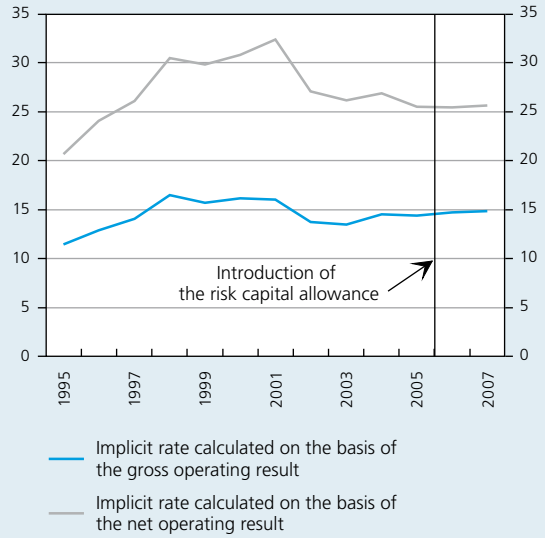
(percentages of GDP)



Sources : NAI, NBB.

CHART 10 MACROECONOMIC IMPLICIT RATES OF CORPORATION TAX [1]

(percentages)

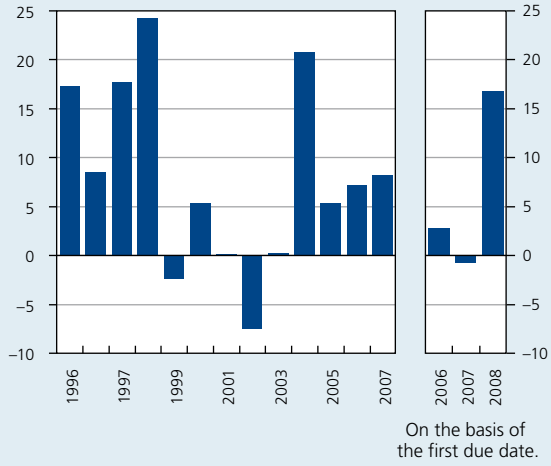


Sources : NAI, NBB.

(1) The tax assessments were brought backward by one year so that they roughly coincide with the advance payments relating to the same tax year. In addition, the revenue figures were adjusted for one-off factors which had inflated revenues in 2006 and 2007. In 2006, the speedier collection of the assessments had boosted these revenues by around 900 million euro. In 2007, the one-off receipts generated by the measure permitting tax-exempt reserves to be paid out or invested at a reduced rate of tax were estimated at 245 million euro.

CHART 11 ADVANCE PAYMENTS OF CORPORATION TAX

(percentage changes compared to the previous year)



Sources : FPS Finance, NAI, NBB.

The introduction of the risk capital allowance may have affected both the implicit tax rate and the tax base. Although it is impossible to isolate the effect of the introduction of this measure on corporate operating results, simulations based on the Bank's econometric model show that the impact of the reform is probably relatively small. The increase in the authorised capital and the development of finance company activities – a phenomenon which the econometric model cannot simulate – could drive up net interest income. Such an increase was recorded in 2006, and at that time it exerted upward pressure on the estimated tax base as a percentage of GDP.

Calculated on the basis of the corporate gross operating results, the macroeconomic implicit rate of corporation tax increased from 14.4 p.c. in 2005 to 14.7 p.c. in 2006, rising to 14.8 p.c. in 2007. The implicit tax rate calculated on the basis of the net operating results remained steady in 2006, at 25.5 p.c., before rising to 25.7 p.c. in 2007 [1].

These implicit tax rates are sensitive to the economic cycle and generally increase when the economic context is favourable, as was the case in 2006 and 2007 [2]. In other respects, it is very likely that the introduction of the risk capital allowance will exert a downward influence on the implicit tax rate owing to the expansion of the finance companies' activities, and hence their tax bases, as these companies gain a relatively greater advantage from the tax allowance and therefore pay less tax.

Overall, the movement in the macroeconomic implicit rates of corporation tax suggests that the introduction of the risk capital allowance had no significant negative effect on government revenues in 2006 and 2007.

The data on the movement in corporation tax during the initial months of 2008 also imply that the introduction of the risk capital allowance has not so far influenced public revenues. In fact, advance payments made by corporations on the first due date in April 2008 were 16.8 p.c. higher than those of the previous year.

(1) The average implicit tax rate for non-financial corporations, calculated on the basis of their annual accounts, is less sensitive to the business cycle than the macroeconomic implicit tax rate since it is possible to identify the companies which are making a profit. That rate of tax had also risen slightly in 2006.

(2) The macroeconomic corporate operating result corresponds to the sum of the positive and negative operating results of the companies. In an economic boom, the proportion of the positive operating result which is subject to tax tends to increase, while the proportion of the negative operating result on which no tax is payable tends to decline, driving up the implicit tax rate.

5.2 Gross tax advantage for corporations calculated on the basis of the annual accounts

An approximation of the gross tax advantage offered by the risk capital allowance can be derived on the basis of the Central Balance Sheet Office data relating to non-financial corporations, the "scheme A" accounts of credit institutions and the information on insurance companies obtained from the CBFA. However, it is not possible to arrive at an exact figure on the basis of this information. Such an approach tends to overestimate the gross tax advantage for companies, as the annual accounts contain no information on the accounting value of foreign branches, "villa" companies or SMEs applying the investment reserve rules, so that no adjustment can be made for these factors. Moreover, a number of adjustments are made on the basis of the only data available, namely the accounting data, whereas the real adjustments are effected via the tax value. The figures are also calculated on the basis of the company's financial position at the end of the tax year, whereas changes in the adjusted equity capital are only taken into account *pro rata temporis* in the tax return form. This factor could have a significant impact in years when strong capital increases are recorded.

In addition, the tax returns indicate that companies which applied for exemption of their profits under the rules on coordination centres for the 2006 tax year were granted a risk capital allowance of 1.3 billion euro for the following year. This would correspond to a gross tax advantage of 442 million euro for those companies. As all the coordination centres were excluded from the calculation of the gross tax advantage on the basis of the annual accounts, this figure needs to be added.

The gross tax advantage for companies comprises two elements. The first is static, and expresses the advantage which would have applied on the basis of the corporate financing structure before introduction of the measure, while the second is dynamic and reflects the influence of financial flows on the gross tax advantage.

The static component is calculated via a simulation based on the adjusted equity capital before the introduction of the reform. In order to avoid any anticipation effects, the 2004 balance sheet data were used. On the basis of that information, the theoretical gross tax advantage for companies would come to 1,365 million euro, or twice the government's initial estimate of 506 million euro.

The introduction of the risk capital allowance generated substantial dynamic effects, bringing the gross tax advantage for companies to 3,035 million euro at the end of 2006. This was 1.2 billion euro higher than the figure indicated by the simulation exercise based on the 2004 data, excluding the impact of the coordination centres which applied the risk capital allowance.

In the case of non-financial corporations, the gross tax advantage calculated on the basis of the balance sheet structure at the end of the 2006 tax year increased by 61 p.c. compared to that at the end of 2004. The gross

TABLE 8 ESTIMATE OF THE GROSS TAX ADVANTAGE REPRESENTED BY THE RISK CAPITAL ALLOWANCE FOR COMPANIES (1)

(millions of euros)

	2004 (2)	2005 (2)	2006	Change 2004-2006
Non-financial corporations (3)	1,012	1,290	1,633	+620
Large corporations	528	749	988	+460
SMEs	485	541	644	+159
Finance companies filing their annual accounts with the Central Balance Sheet Office	215	374	792	+577
Credit institutions and insurance companies	151	163	197	+46
Coordination centres applying the risk capital allowance (4)	–	–	442	+442
Total	**1,365**	**1,805**	**3,035**	**+1,670**

Sources: CBFA, FPS Finance, NBB.

(1) The data were based on the financial position of the companies at the end of the financial year.

(2) For 2004 and 2005, this is the theoretical gross tax advantage for companies, since the risk capital allowance had not yet entered into effect at that time.

(3) Excluding finance companies filing their annual accounts with the Central Balance Sheet Office.

(4) On the basis of the available data it is not possible to ascertain the theoretical advantage which these coordination centres would have enjoyed in 2004 and 2005.

tax advantage for large corporations increased by 87 p.c., while for SMEs it was 32 p.c. higher. The gross tax advantage for credit institutions and insurance companies increased by 30 p.c.

In the case of finance companies filing their annual accounts with the Central Balance Sheet Office, the gross tax advantage increased very sharply between 2004 and 2006. At the end of the latter year, the advantage enjoyed by those companies was three times higher than the theoretical advantage based on their balance sheet position at the end of 2004. These companies include financial holding companies, credit institutions and investment companies. This category also comprises a range of new establishments linked to finance companies – credit institutions and insurance companies – or constituting the finance centres of multinational groups.

In all the branches of activity of non-financial corporations, the estimated gross tax advantage of the risk capital allowance increased between 2004 and 2006. Most of that increase can be attributed to the chemical sector and the wholesale trade. The marked increase recorded in the chemical sector may be due in part to the transfer of one coordination centre's activities to another group company which does make use of the risk capital allowance.

TABLE 9 ESTIMATE OF THE GROSS TAX ADVANTAGE REPRESENTED BY THE RISK CAPITAL ALLOWANCE FOR NON-FINANCIAL CORPORATIONS, BY INDUSTRY, CALCULATED ON THE BASIS OF THE ANNUAL ACCOUNTS[1]

(millions of euros)

	2004[2]	2005[2]	2006
Agriculture, hunting and fishing	9	10	11
Mining and quarrying	5	5	9
Agricultural and food industries	37	41	50
Textiles, clothing and footwear	14	14	15
Wood	5	6	7
Paper, publishing and printing	18	24	36
Coking, refining, nuclear industries	1	2	5
Chemicals and rubber	67	163	243
Metallurgy and metalworking	35	44	43
Metal manufactures	46	54	96
Other manufacturing industries	26	31	36
Energy and water	34	34	36
Construction	55	66	76
Retail trade	91	102	121
Wholesale trade	166	185	237
Hotels and restaurants	10	13	17
Transport	46	80	83
Post and telecommunication	32	48	56
Financial activities	15	16	31
Real estate activities	152	192	201
Self-operated hire	12	13	24
Services to businesses	114	123	166
Services to households	22	24	31
Total non-financial corporations	**1,012**	**1,290**	**1,633**

Source: NBB.

(1) The data were based on the financial position of the companies at the end of the financial year.

(2) For 2004 and 2005, this concerns the theoretical gross tax advantage for companies, since the risk capital allowance had not yet entered into effect at that time.

Companies whose profits were insufficient to apply the risk capital allowance in 2006 can carry the allowance forward for seven years and thus create a tax reserve. In the case of companies filing their annual accounts with the Central Balance Sheet Office, the budgetary cost of the formation of this tax reserve can be estimated at around 500 million euro in 2006, assuming that this reserve is used in full at the highest tax rate applicable to companies.

5.3 Net impact on public finances

According to an approximation based on annual accounts data and including the coordination centres which apply the risk capital allowance, the gross tax advantage which the risk capital allowance represents for companies is estimated at 3,035 million euro for 2006. Nevertheless, this approximation needs to be adjusted for a number of points.

First, the effect of the authorised capital increases which took place in 2006 is fully incorporated in the simulation based on the annual accounts, whereas these transactions can only be entered in the tax return form *pro rata temporis.* The overestimation of the impact of these increases can be assessed at 374 million euro on the basis of the monthly data relating to them for 2006. An adjustment also has to be made for SMEs which, instead of using the risk capital allowance, continue to apply the tax-exempt investment reserve rules. In addition, the simulation based on the annual accounts has to be adjusted to take account of the part of the corporate equity capital which relates to the activities of permanent establishments located abroad. Finally, an adjustment has to be made to eliminate "villa" companies and other factors, such as valuation differences. This last adjustment is obtained via the difference between the sum of the components mentioned above and the gross tax advantage of the risk capital allowance indicated by the corporation tax assessments. The FPS Finance supplied data on the amount of the risk capital allowance for the 2007 tax year[1]. On the basis of that information, the gross tax advantage for companies can be estimated at 2,325 million euro.

If account is also taken of the budgetary costs due to abolition of the registration fee on contributions to companies, estimated at 60 million euro, the gross cost of the measures introduced by the law of 22 June 2005 comes to around 2,385 million euro in 2006.

Nonetheless, the net impact of the tax reform introduced by the law of 22 June 2005 on Belgian public revenues does not correspond to the amount of the gross tax advantage which the risk capital allowance represents for companies plus the effect of the abolition of the registration fee.

In order to proceed from this gross cost to the real impact of the measure on Belgian public finances, it is necessary to make a number of adjustments, as the law made provision for various compensatory measures to limit the negative budgetary repercussions of the reform (cf. section 2.2). In addition, the inflow of foreign capital inflates the gross tax advantage, but most likely has no negative effect on Belgian public revenues. The same applies to the reinforcement in equity capital of domestic origin. Moreover, the coordination centres whose approval has expired but which are pursuing their activities in a different form have in fact boosted the gross effect of the risk capital allowance, but this conversion has not reduced public revenues.

The rest of the analysis in this chapter examines these various factors and then assesses their impact on the budget; finally, an overall view of the budgetary impact of the reform introduced by the law of 22 June 2005 is presented for the year 2006.

BUDGETARY COMPENSATORY MEASURES[2]

The law of 22 June 2005 provides for a series of compensatory measures to attenuate the budgetary cost of the reform. According to a recent estimate, the proceeds of the reduction in the tax exemption for capital gains could exceed the amount originally expected by around 270 million euro. The revenues generated by the other compensatory measures should correspond overall to the initial estimate.

MACROECONOMIC PAYBACK EFFECTS

The corporation tax reform should stimulate economic activity and employment and thus increase public revenues and reduce public expenditure. The government had originally assessed these payback effects at 58 million euro. According to the Bank's econometric model, the contraction in the user cost of capital will probably generate payback effects with positive repercussions on public finances amounting to only around 10 million euro in the first year following the tax reform. Assuming that the reform is neutral *ex ante* for the government budget, the payback effects should reach their maximum level after three years, at slightly more than 100 million euro.

(1) These are data on the amount of the assessments as at 30 June 2008. For the 2007 tax year, these figures were increased by 2.1 p.c. to take account of assessments not yet completed and to obtain an overall view.

(2) The adjustment relating to "villa" companies is not made here because it influences the amount of the risk capital allowance mentioned in the corporation tax return, which is therefore already taken into account.

TABLE 10 IMPACT OF THE BUDGETARY COMPENSATORY MEASURES IN 2006

(millions of euros)

	Initial estimate[1]	Recent estimate[2]
Abolition of tax credit for SMEs	17	14
Cuts in the investment reserve scheme	60	58
Abolition of the investment allowance for SMEs	41	37
Reduction in the tax exemption of capital gains	337	608
Total	**454**	**717**

Sources: FPS Finance, NBB.

(1) According to the report produced on behalf of the Commission for Finance and the Budget at the time of the debate on the law introducing the allowance on risk capital.

(2) On the basis of a recent estimate by the FPS Finance, excluding the tax exemptions for capital gains. In accordance with the method used for the initial estimate, the revenues generated by this measure are assessed on the basis of the tax-exempt capital gains on shares in the 2007 tax year.

INFLOWS OF FOREIGN CAPITAL AND EXPANSION OF THE TAX BASE

In the case of foreign capital inflows, a distinction should be made between capital contributions which would still have been effected without the introduction of the risk capital allowance and additional capital inflows. The latter have not normally driven up the net cost for the government. In principle, the increase in the authorised capital of finance companies of foreign origin or the substitution of authorised capital for current loans granted by foreign establishments do not reduce the corporation tax revenues collected by the Belgian State. These flows could even lead to the development of new economic activities and a transfer to Belgium of the tax bases of multinational groups, and therefore generate additional revenues for the Belgian State.

Thus, one might suggest that capital contributions of foreign origin, which have increased the tax advantage for companies by around 465 million euro, are at the very least neutral for the government budget.

In addition, assuming that inflows of foreign capital have expanded the corporation tax base in Belgium, they may even have had a positive impact on public finances. That would be the case, in particular, if the newly-formed finance companies or those which have received additional capitalisation apply interest rates to their outstanding loans which exceed the rate of the risk capital allowance. If a return of 5 p.c. – approximately 1.5 percentage point above the rate of the tax allowance applicable to the 2007 tax year – were obtained on the increase in the authorised capital of foreign origin, taxed at the standard nominal rate, additional revenues totalling 280 million euro would have been recorded in 2006.

SUBSTITUTION OF EQUITY FOR DEBT

The relatively limited rise in the loan capital of non-financial corporations suggests that borrowing has been curbed by the growth of shareholders' equity. This substitution process increases the gross tax advantage for companies, but not the net effect on the budget, since the rate of the risk capital allowance is generally lower than the interest rates payable on borrowings.

Taking as the benchmark the smallest increase in debt levels recorded between 1994 and 2005, the effect of this factor on the gross cost comes to 52 million euro. On the basis of the average increase in debt levels during this period, the effect comes to 309 million euro. Nonetheless, in the latter case there could be substantial double counting due to inflows of foreign capital which have replaced the loans previously granted by foreign establishments. The figure to be taken into account to adjust for this is therefore at least 52 million euro, which corresponds to the impact of capital increases financed by households. If it is also assumed that the average interest rate applied to borrowings which were not effected as a result of the substitution of equity for debt would have been one percentage point higher than the rate of the risk capital allowance, the revenues generated by corporation tax would have risen by 15 million euro in 2006.

RETENTION OF THE COORDINATION CENTRE CAPITAL

One of the aims of the introduction of the risk capital allowance was to retain the capital of the coordination centres in Belgium following the expiry of the centres' approval. When a coordination centre's approval expires, the company can claim the risk capital allowance in the same way as other companies. If the equity capital of the coordination centre is retained in Belgium, that increases the gross tax advantage of the measure. On the one hand, it is necessary to take account of how the expiry of 44 coordination centre approvals between 2004 and September 2006 affects the gross tax advantage of the risk capital allowance. On the other hand, it is evident from the tax returns that a number of approved coordination centres have switched to the risk capital allowance system. The overall effect exerted by the coordination centres on the gross cost of the measure can be estimated at 561 million euro.

It is not easy to estimate the net impact of this factor on corporation tax revenues. Coordination centre profits already enjoyed significant tax concessions and were taxed at a low effective rate. The real budgetary cost also depends on the capital which would have remained in Belgium even without the reform, and which would have been taxed at a standard rate. However, the tax base of the coordination centres is extremely mobile, and there are various factors which suggest that the introduction of the risk capital allowance has resulted in more capital remaining in Belgium. In order to assess the net budgetary impact, it is therefore assumed that the tax revenues generated by the capital retained in Belgium as a result of the risk capital allowance compensate for the loss of tax revenues on capital which would have remained in Belgium even without the reform.

NON-RECOVERY OF EARLIER LOSSES

Since, in the corporation tax return form, the risk capital allowance applies before the deduction of losses brought forward, some companies whose tax base is insufficient cannot take advantage of this measure, whereas the situation would be different if the risk capital allowance could have been calculated after deduction of those losses. Such a provision increases the amount of the risk capital allowance entered in the corporation tax return, and limits the amount deducted in respect of losses brought forward,

TABLE 11 NET IMPACT ON PUBLIC FINANCES IN 2006 OF THE MEASURES PROVIDED FOR BY THE LAW OF 22 JUNE 2005
(millions of euros)

Gross tax advantage of the risk capital allowance[1]	3,035
Changes in equity taken into account *pro rata temporis*	–374
Adjustment for permanent establishments abroad	–49
SMEs continuing to apply the investment reserve rules	–13
Other adjustments to shareholders' equity	–274
Abolition of the registration fee on contributions to companies	60
Gross cost[2]	**2,385**
Compensatory budgetary measures	–717
Macroeconomic payback effects[3]	–10
Foreign capital inflows and expansion of the tax base	–465 to –745
Substitution of debt for equity	–52 to –67
Impact of the coordination centres[4]	–561
Non-recovery of earlier losses[2]	–149
Net budgetary impact	**≈ –140 to –430**

Sources: CBFA, FPS Finance, NBB.
(1) On the basis of the 2006 annual accounts; the data were therefore calculated according to the financial position of companies at the end of the financial year.
(2) On the basis of the tax return data relating to the 2007 tax year, obtained from the FPS Finance.
(3) The value stated relates to the macroeconomic payback effects seen in the first year following the tax reform.
(4) This concerns on the one hand the coordination centres which qualified for the coordination centre tax regime for the 2006 tax year but switched to the risk capital allowance in the 2007 tax year, and on the other hand the capital of the coordination centres liquidated during 2005 and 2006, which was transferred to other companies established in Belgium.

but that substitution effect does not influence the tax payable by the companies since that is zero. The impact of this provision can be estimated at 149 million euro.

OVERVIEW OF THE BUDGETARY IMPACT

The overall adverse effect on public finances in 2006 of the measures introduced by the law of 22 June 2005 can be estimated at between 140 and 430 million euro. However, this estimate is very uncertain and could be too low, but equally too high.

5.4 Expected impact of the dynamic effects

The introduction of the risk capital allowance has not yet produced all its dynamic effects. The gross tax advantage for companies could still increase considerably in the coming years, as a result of various developments.

The first factor concerns the increase in the equity capital which has occurred in recent years and will probably continue. Thus, substantial inflows of foreign capital were recorded in 2007, and again in the first months of 2008. The equity of companies could also increase as a result of tax optimisation techniques. In practice, therefore, the risk capital allowance could concern a large proportion of the total consolidated capital of companies, rather than just their shareholders' equity. That is particularly true in cases where the sum of the equity capital of companies with cross-shareholdings exceeds the level of the group's consolidated equity.

The abolition of the coordination centre regime will also increase the gross tax advantage for companies, since it can be expected that in many cases the activities of these centres will be pursued in the form of companies using the risk capital allowance.

In addition, the rise in interest rates on linear bonds is driving up the basic rate used to calculate the risk capital allowance. Being dependent on the interest rate on ten-year linear bonds issued by the Belgian State, that rate has already risen from 3.442 p.c. in the 2007 tax year to 4.307 p.c. for 2009, and it could yet increase further.

Finally, there is the use of the tax reserves formed by companies which had not generated sufficient profits, in the tax year 2007, to take full advantage of the measure.

In principle, the net impact on public revenues of foreign capital inflows and the conversion of coordination centres is still modest and could even be positive. The foreign capital contributions and the substitution of debt for equity financing could expand the corporation tax base in Belgium, notably as a result of effects relating to the allocation of profits among the various companies belonging to the same multinational group. The positive influence of the macroeconomic payback effects on public revenues, resulting from the revival of economic growth, could also increase slightly.

Conversely, other factors could attenuate the net budgetary impact. That is true of the increase in the rate used to calculate the risk capital allowance, the use of the tax reserve created by the unused portion of the tax allowance and the changes made to the structure of companies or groups of companies in connection with tax optimisation techniques. A number of these factors could prove quite significant. It is therefore still possible that, in the future, they could have a serious adverse effect on the public revenues generated by corporation tax.

Of course, the exact repercussions will depend on what happens with these factors. Thus, the budgetary costs could increase if corporate operating profits decline significantly – as they generally do in a period of slackening activity – and if interest rates increase.

In any case, the budgetary impact of the measures introduced by the law of 22 June 2005, as estimated in this study, only relates to the year 2006, and at the moment it is still uncertain how the dynamic effects of the introduction of the risk capital allowance will develop. It will therefore be several years before an overview can be obtained, once the coordination centre regime has been abolished and all the effects of the reform are felt.

TABLE 1.1 HIGHEST STANDARD NOMINAL RATES OF CORPORATION TAX[1]

(percentages)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Belgium	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	34.0	34.0	34.0	34.0	34.0	34.0
Bulgaria	40.0	40.0	40.2	37.0	34.3	32.5	28.0	23.5	23.5	20.0	15.0	15.0	10.0	10.0
Czech Republic	41.0	39.0	39.0	35.0	35.0	31.0	31.0	31.0	31.0	28.0	26.0	24.0	24.0	21.0
Denmark	34.0	34.0	34.0	34.0	32.0	32.0	30.0	30.0	30.0	30.0	28.0	28.0	25.0	25.0
Germany	56.8	56.7	56.7	56.0	51.6	51.6	38.3	38.3	39.6	38.3	38.7	38.7	38.7	29.8
Estonia	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	24.0	23.0	22.0	21.0
Ireland	40.0	38.0	36.0	32.0	28.0	24.0	20.0	16.0	12.5	12.5	12.5	12.5	12.5	12.5
Greece	40.0	40.0	40.0	40.0	40.0	40.0	37.5	35.0	35.0	35.0	32.0	29.0	25.0	25.0
Spain	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	32.5	30.0
France	36.7	36.7	41.7	41.7	40.0	37.8	36.4	35.4	35.4	35.4	35.0	34.4	34.4	34.4
Italy	52.2	53.2	53.2	41.3	41.3	41.3	40.3	40.3	38.3	37.3	37.3	37.3	37.3	31.4
Cyprus	25.0	25.0	25.0	25.0	25.0	29.0	28.0	28.0	15.0	15.0	10.0	10.0	10.0	10.0
Latvia	25.0	25.0	25.0	25.0	25.0	25.0	25.0	22.0	19.0	15.0	15.0	15.0	15.0	15.0
Lithuania	29.0	29.0	29.0	29.0	29.0	24.0	24.0	15.0	15.0	15.0	15.0	19.0	18.0	15.0
Luxembourg	40.9	40.9	39.3	37.5	37.5	37.5	37.5	30.4	30.4	30.4	30.4	29.6	29.6	29.6
Hungary	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	17.6	17.5	17.5	21.3	21.3
Malta	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Netherlands	35.0	35.0	35.0	35.0	35.0	35.0	35.0	34.5	34.5	34.5	31.5	29.6	25.5	25.5
Austria	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	25.0	25.0	25.0	25.0
Poland	40.0	40.0	38.0	36.0	34.0	30.0	28.0	28.0	27.0	19.0	19.0	19.0	19.0	19.0
Portugal	39.6	39.6	39.6	37.4	37.4	35.2	35.2	33.0	33.0	27.5	27.5	27.5	26.5	26.5
Romania	38.0	38.0	38.0	38.0	38.0	25.0	25.0	25.0	25.0	25.0	16.0	16.0	16.0	16.0
Slovenia	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	23.0	22.0
Slovakia	40.0	40.0	40.0	40.0	40.0	29.0	29.0	25.0	25.0	19.0	19.0	19.0	19.0	19.0
Finland	25.0	28.0	28.0	28.0	28.0	29.0	29.0	29.0	29.0	29.0	26.0	26.0	26.0	26.0
Sweden	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0
United Kingdom	33.0	33.0	31.0	31.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
EU[2]	35.3	35.3	35.2	34.1	33.5	31.9	30.7	29.3	28.3	27.1	25.5	25.3	24.5	23.6
EU25[2]	35.0	35.0	34.9	33.9	33.3	32.2	31.1	29.7	28.7	27.4	26.3	26.0	25.5	24.4
EA13[2]	38.5	38.6	38.7	37.2	36.4	35.8	34.1	32.8	32.0	31.4	30.0	29.5	28.5	27.1

Source: EC.

(1) Including local taxes.

(2) Unweighted averages.

TABLE 2.1 CHANGES IN THE AUTHORISED CAPITAL OF BELGIAN COMPANIES[1]

(billions of euros)

	Domestic origin						Foreign origin	Indeterminate origin	Total
		Non-financial corporations	Financial institutions	General government	Households	Non-profit institutions serving households			
Formations									
2004	1.5	0.9	0.1	0.0	0.6	0.0	0.4	0.8	2.8
2005	1.5	0.6	0.0	0.0	0.9	0.0	0.9	0.2	2.7
2006	7.6	2.4	2.4	0.5	2.3	0.0	10.8	0.0	18.4
2007	4.6	1.5	0.3	0.0	2.8	0.0	3.6	0.0	8.3
Capital increases									
2004	18.0	15.8	0.2	1.2	0.7	0.0	47.8	0.9	66.7
2005	15.2	13.0	1.2	0.2	0.8	0.0	23.7	2.2	41.2
2006	50.3	29.4	17.0	1.4	2.4	0.0	62.6	4.0	116.9
2007	65.2	25.3	34.1	1.3	4.6	0.0	94.8	11.6	171.6
Capital reductions									
2004	16.9	13.1	0.4	3.2	0.2	0.0	11.9	0.6	29.4
2005	14.7	13.7	0.6	0.3	0.1	0.0	14.2	2.1	31.0
2006	9.7	7.4	0.7	1.3	0.3	0.0	22.3	1.1	33.1
2007	13.9	12.8	0.5	0.0	0.6	0.0	23.4	1.6	38.9
Net effect on the authorised capital									
2004	2.6	3.5	–0.1	–2.0	1.1	0.0	36.4	1.1	40.1
2005	2.0	0.0	0.6	0.0	1.5	0.0	10.5	0.4	12.9
2006	48.2	24.4	18.6	0.7	4.5	0.0	51.1	2.9	102.2
2007	56.0	14.0	33.9	1.3	6.8	0.0	74.9	10.1	141.0

Source: NBB.

(1) The data on capital increases and reductions have been adjusted for transactions which do not affect the basis for calculating the risk capital allowance, such as the conversion of reserves into capital.

TABLE 2.2 CHANGES IN THE AUTHORISED CAPITAL OF BELGIAN COMPANIES, EXCLUDING TRANSACTIONS BY COORDINATION CENTRES WHICH WERE STILL APPROVED IN 2004[1]

(billions of euros)

	Domestic origin						Foreign origin	Indeterminate origin	Total
		Non-financial corporations	Financial institutions	General government	Households	Non-profit institutions serving households			
Formations									
2004	1.5	0.9	0.1	0.0	0.6	0.0	0.4	0.8	2.8
2005	1.5	0.6	0.0	0.0	0.9	0.0	0.9	0.2	2.7
2006	7.6	2.4	2.4	0.5	2.3	0.0	10.8	0.0	18.4
2007	4.6	1.5	0.3	0.0	2.8	0.0	3.6	0.0	8.3
Capital increases									
2004	10.2	8.1	0.2	1.2	0.7	0.0	19.3	0.8	30.3
2005	9.5	7.3	1.2	0.2	0.8	0.0	16.1	2.2	27.8
2006	40.7	19.8	17.0	1.4	2.4	0.0	48.7	3.9	93.4
2007	59.0	19.0	34.1	1.3	4.6	0.0	82.3	11.6	152.9
Capital reductions									
2004	9.4	5.7	0.4	3.2	0.2	0.0	5.3	0.6	15.3
2005	7.1	6.0	0.6	0.3	0.1	0.0	9.1	2.1	18.3
2006	4.6	2.3	0.7	1.3	0.3	0.0	5.0	1.1	10.7
2007	10.8	9.7	0.5	0.0	0.6	0.0	20.9	1.6	33.2
Net effect on the authorised capital									
2004	2.4	3.3	–0.1	–2.0	1.1	0.0	14.4	1.0	17.8
2005	3.9	1.9	0.6	0.0	1.5	0.0	7.9	0.4	12.2
2006	43.7	20.0	18.6	0.7	4.5	0.0	54.5	2.9	101.1
2007	52.8	10.8	33.9	1.3	6.8	0.0	65.1	10.1	128.0

Source: NBB.

(1) The data on capital increases and reductions have been adjusted for transactions which do not affect the basis for calculating the risk capital allowance, such as the conversion of reserves into capital. Transactions by coordination centres were also excluded.

TABLE 2.3 CHANGES IN THE AUTHORISED CAPITAL OF COORDINATION CENTRES WHICH WERE STILL APPROVED IN 2004 (1)

(billions of euros)

	Domestic origin						Foreign origin	Indeterminate origin	Total
		Non-financial corporations	Financial institutions	General government	Households	Non-profit institutions serving households			
Capital increases									
2004	7.7	7.7	0.0	0.0	0.0	0.0	28.6	0.1	36.4
2005	5.7	5.7	0.0	0.0	0.0	0.0	7.6	0.0	13.4
2006	9.6	9.6	0.0	0.0	0.0	0.0	13.8	0.0	23.4
2007	6.3	6.3	0.0	0.0	0.0	0.0	12.4	0.0	18.7
Capital reductions									
2004	7.5	7.5	0.0	0.0	0.0	0.0	6.6	0.0	14.0
2005	7.6	7.6	0.0	0.0	0.0	0.0	5.1	0.0	12.7
2006	5.1	5.1	0.0	0.0	0.0	0.0	17.2	0.0	22.4
2007	3.1	3.1	0.0	0.0	0.0	0.0	2.6	0.0	5.7
Net effect on the authorised capital									
2004	0.3	0.3	0.0	0.0	0.0	0.0	22.0	0.1	22.4
2005	–1.9	–1.9	0.0	0.0	0.0	0.0	2.6	0.0	0.7
2006	4.5	4.5	0.0	0.0	0.0	0.0	–3.4	0.0	1.1
2007	3.2	3.2	0.0	0.0	0.0	0.0	9.9	0.0	13.0

Source: NBB.

(1) The data on capital increases and reductions have been adjusted for transactions which do not affect the basis for calculating the risk capital allowance, such as the conversion of reserves into capital.

Annex 3

TABLE 3.1 CAPITAL MOVEMENTS OF ALL BELGIAN COMPANIES AFFILIATED TO FOREIGN COMPANIES: TOTAL

(capital invested via direct shareholdings[1]; billions of euros)

	2001	2002	2003	2004	2005	2006
1. Foreign capital contributions to resident firms	**64.9**	**56.2**	**70.3**	**60.1**	**76.2**	**126.6**
1.1 Funds reinvested abroad by the firms concerned	35.7	29.2	37.4	31.6	48.5	70.1
In the form of equity capital	17.0	11.7	16.4	17.4	3.4	3.3
In the form of interfirm loans	18.7	17.5	21.0	14.2	45.1	66.8
1.2 Foreign capital contributions remaining in Belgium	29.2	27.0	32.9	28.5	27.7	56.5
2. Foreign capital withdrawals from resident firms	**31.3**	**47.9**	**51.9**	**37.1**	**48.0**	**85.4**
2.1 Funds disinvested abroad by the firms concerned	5.7	18.5	14.8	16.2	6.7	91.1
In the form of equity capital	–0.9	9.2	–2.5	1.9	–1.8	19.7
In the form of interfirm loans	6.6	9.4	17.3	14.3	8.4	71.4
2.2 Foreign capital withdrawals not offset by foreign disinvestments	25.6	29.4	37.2	20.9	41.4	–5.7
Change in inward foreign direct investment (1 – 2)	**33.6**	**8.2**	**18.4**	**23.0**	**28.2**	**41.1**
Net foreign investments by the firms concerned (1.1 – 2.1)	30.0	10.7	22.6	15.4	41.8	–21.0
Actual capital increase (+) or reduction (–) in the firms concerned (1.2 – 2.2)	3.6	–2.4	–4.2	7.6	–13.6	62.2

Source: NBB.

(1) Direct shareholdings are defined by the holding of at least 10 p.c. of the shares or voting rights.

TABLE 3.2 CAPITAL MOVEMENTS IN COORDINATION CENTRES AFFILIATED TO FOREIGN COMPANIES

(capital invested via direct shareholdings[1]; billions of euros)

	2001	2002	2003	2004	2005	2006
1. Foreign capital contributions to resident firms	**13.4**	**21.6**	**32.3**	**18.6**	**34.9**	**13.5**
1.1 Funds reinvested abroad by the firms concerned	16.6	12.2	18.4	10.1	38.9	1.9
In the form of equity capital	0.0	0.0	0.0	0.0	0.0	0.0
In the form of interfirm loans	16.6	12.2	18.4	10.1	38.9	1.9
1.2 Foreign capital contributions remaining in Belgium	–3.2	9.4	13.9	8.5	–4.0	11.5
2. Foreign capital withdrawals from resident firms	**8.4**	**7.5**	**22.8**	**16.2**	**22.7**	**32.8**
2.1 Funds disinvested abroad by the firms concerned	6.2	6.1	12.9	12.9	7.7	65.2
In the form of equity capital	0.0	0.0	0.0	0.0	0.0	–0.3
In the form of interfirm loans	6.2	6.1	12.9	12.9	7.7	65.6
2.2 Foreign capital withdrawals not offset by foreign disinvestments	2.2	1.4	9.9	3.3	15.0	–32.5
Change in inward foreign direct investment (1 – 2)	**4.9**	**14.2**	**9.5**	**2.5**	**12.2**	**–19.3**
Net foreign investments by the firms concerned (1.1 – 2.1)	10.4	6.1	5.5	–2.8	31.2	–63.3
Actual capital increase (+) or reduction (–) in the firms concerned (1.2 – 2.2)	–5.4	8.1	4.0	5.2	–19.0	44.0

Source: NBB.

(1) Direct shareholdings are defined by the holding of at least 10 p.c. of the shares or voting rights.

TABLE 3.3 CAPITAL MOVEMENTS IN BELGIAN COMPANIES AFFILIATED TO FOREIGN COMPANIES EXCLUDING COORDINATION CENTRES

(capital invested via direct shareholdings[1]; billions of euros)

	2001	2002	2003	2004	2005	2006
1. Foreign capital contributions to resident firms	**51.6**	**34.5**	**38.0**	**41.5**	**41.3**	**113.1**
1.1 Funds reinvested abroad by the firms concerned	19.2	17.0	19.0	21.5	9.6	68.2
In the form of equity capital	17.0	11.7	16.4	17.4	3.4	3.3
In the form of interfirm loans	2.2	5.3	2.7	4.1	6.2	64.9
1.2 Foreign capital contributions remaining in Belgium	32.4	17.5	19.0	19.9	31.7	44.9
2. Foreign capital withdrawals from resident firms	**22.9**	**40.4**	**29.1**	**21.0**	**25.3**	**52.7**
2.1 Funds disinvested abroad by the firms concerned	–0.5	12.4	1.9	3.4	–1.0	25.9
In the form of equity capital	–0.9	9.2	–2.5	1.9	–1.8	20.1
In the form of interfirm loans	0.4	3.3	4.4	1.4	0.7	5.8
2.2 Foreign capital withdrawals not offset by foreign disinvestments	23.4	28.0	27.3	17.6	26.3	26.8
Change in inward foreign direct investment (1 – 2)	**28.7**	**–5.9**	**8.9**	**20.5**	**16.0**	**60.4**
Net foreign investments by the firms concerned (1.1 – 2.1)	19.7	4.6	17.2	18.2	10.6	42.3
Actual capital increase (+) or reduction (–) in the firms concerned (1.2 – 2.2)	9.0	–10.5	–8.3	2.4	5.4	18.1

Source: NBB.

(1) Direct shareholdings are defined by the holding of at least 10 p.c. of the shares or voting rights.

Annex 4

TABLE 4.1 CHANGES IN THE AUTHORISED CAPITAL OF COORDINATION CENTRES STILL APPROVED IN 2004 (1)

(millions of euros)

	2004	2005	2006	2007
1. Approval expired between 2004 and September 2006				
Capital increases	**164**	**622**	**373**	**708**
Indeterminate origin	0	1	0	0
Domestic origin	0	1	0	95
Foreign origin	164	620	373	614
Capital reductions	**13,151**	**4,627**	**234**	**365**
Indeterminate destination	0	0	0	0
Domestic destination	6,015	4,622	149	81
Foreign destination	7,136	5	85	285
Net changes in capital	**–12,987**	**–4,005**	**139**	**343**
Indeterminate origin or destination	0	1	0	0
Domestic origin or destination	–6,015	–4,622	–149	14
Foreign origin or destination	–6,972	615	288	329
2. Approval expired between September 2006 and November 2007				
Capital increases	**50**	**1,544**	**4,518**	**5,200**
Indeterminate origin	50	0	0	0
Domestic origin	0	1,544	4,508	5,200
Foreign origin	0	0	10	0
Capital reductions	**1,653**	**7,381**	**4,253**	**1,508**
Indeterminate destination	0	0	0	0
Domestic destination	1,507	5,852	3,691	1,431
Foreign destination	146	1,529	562	78
Net changes in capital	**–1,603**	**–5,837**	**265**	**3,692**
Indeterminate origin or destination	50	0	0	0
Domestic origin or destination	–1,507	–4,308	818	3,769
Foreign origin or destination	–146	–1,529	–552	–78
3. Approval expired between November 2007 and March 2008				
Capital increases	**10,579**	**4,363**	**1,161**	**5,566**
Indeterminate origin	0	0	0	0
Domestic origin	2,897	1,562	673	199
Foreign origin	7,682	2,801	487	5,366
Capital reductions	**3,474**	**482**	**5,019**	**3,839**
Indeterminate destination	0	0	0	0
Domestic destination	191	351	0	1,686
Foreign destination	3,283	131	5,019	2,153
Net changes in capital	**7,105**	**3,881**	**–3,858**	**1,726**
Indeterminate origin or destination	0	0	0	0
Domestic origin or destination	2,706	1,212	673	–1,487
Foreign origin or destination	4,399	2,670	–4,532	3,214

Sources: FPS Finance, NBB.

(1) Any liquidation gains or losses were taken into account.

TABLE 4.1 CHANGES IN THE AUTHORISED CAPITAL OF COORDINATION CENTRES STILL APPROVED IN 2004[1] (continued)

(millions of euros)

	2004	2005	2006	2007
4. Approval still valid in March 2008				
Capital increases	**25,607**	**6,864**	**17,395**	**7,236**
Indeterminate origin	25	12	25	11
Domestic origin	4,848	2,627	4,395	776
Foreign origin	20,734	4,225	12,975	6,449
Capital reductions	**752**	**1,335**	**13,412**	**1**
Indeterminate destination	0	0	0	0
Domestic destination	752	497	1,756	0
Foreign destination	0	838	11,656	1
Net changes in capital	**24,855**	**5,529**	**3,983**	**7,236**
Indeterminate origin or destination	25	12	25	11
Domestic origin or destination	4,096	2,130	2,639	776
Foreign origin or destination	20,734	3,387	1,319	6,449
5. Total capital transactions of coordination centres				
Capital increases	**36,400**	**13,394**	**23,447**	**18,710**
Indeterminate origin	75	13	25	11
Domestic origin	7,745	5,734	9,577	6,270
Foreign origin	28,580	7,646	13,845	12,429
Capital reductions	**19,030**	**13,825**	**22,918**	**5,714**
Indeterminate destination	0	0	0	0
Domestic destination	8,466	11,322	5,596	3,198
Foreign destination	10,564	2,504	17,322	2,516
Net changes in capital	**17,370**	**–432**	**528**	**12,996**
Indeterminate origin or destination	75	13	25	11
Domestic origin or destination	–720	–5,587	3,981	3,072
Foreign origin or destination	18,015	5,143	–3,477	9,913

Sources: FPS Finance, NBB.

(1) Any liquidation gains or losses were taken into account.

Annex 5

Assessment of the impact of the risk capital allowance on the Belgian economy

1. Implementation

The potential impact of the risk capital allowance on the Belgian economy is assessed by means of the Bank's quarterly "Noname" model. As in most models, this assessment is conducted by considering that the effects of corporation tax on company decisions will be felt via the change in the user cost of capital.

Long-term investment demand, conducted by profit maximising companies, depends on output with a unitary elasticity, and on the ratio between the capital cost and the production price with an elasticity determined by the elasticity of the substitution of capital for labour. In the short term, the additional accelerator effect produced by cash flows must also be taken into account.

User cost of capital

This tax measure is first introduced into the model by varying the cost of capital. There are various definitions of the cost of capital, depending on the assumptions made or the desired degree of complexity, but all the measures comprise as their main element the opportunity cost of the funds used to finance the project: a lower cost typically results in a higher level of investment. In the absence of taxation, the opportunity cost is equal to the risk-free interest rate plus a risk premium (rp). A very minor restriction is imposed by assuming that the risk premium is independent of the measure in question. The opportunity cost, co, depends on the interest rate, R, on the return after tax required for an investment financed by equity, R^E, on the return after tax required for an investment financed by debt, R^D, and on the proportion of the investments financed by equity, β_E. This opportunity cost can be written as follows:

$$co = \beta_E.R^E + (1 - \beta_E).R^D$$

Before the risk capital allowance had been introduced, only the interest on debts was deductible so that:

$$R^E = rp^E + R$$
$$R^D = rp^D + (1- t).R$$

where t is the rate of corporation tax.

If the equity finance also becomes deductible, the rate of return required on these investments becomes:

$$R^E = rp^E + (1- t).R$$
$$R^D = rp^D + (1- t).R$$

The introduction of the measure therefore corresponds to a reduction in the opportunity cost equalling

$$co - co^{IN} = \{\beta_E .(rp^E + R) + (1 - \beta_E).(rp^D + (1 - t).R)\}$$
$$- \{\beta_E .(rp^E + (1 - t).R) + (1 - \beta_E).(rp^D + (1 - t).R)\}$$

or:

$$\varepsilon^{co} = - \beta_E.t.R$$

which will be the shock applied to the model.

On the basis of the aggregate figures for all non-financial corporations, it seems that over the latest five years available, i.e. 2002-2006, the average of β_E is 43 p.c. The *ex ante* shock to the opportunity cost is therefore:

$\varepsilon^{co} = -0,43.0,33.R$

For the 2007 tax year, this rate R is set at 3.442 p.c. (3.942 p.c. for SMEs).

Ex ante budgetary impact

To assess the *ex ante* effect of the measure on corporate cash flows it is necessary to know the budgetary cost, as this cost corresponds to a transfer of resources from general government to the business sector. That cost is particularly hard to assess since the measure does not apply only to new business investments but concerns the whole of the corporate balance sheet. That assessment therefore requires accounting and tax definitions which are beyond the scope of the model; in addition, there is a set of compensatory measures concerning corporate taxation, the impact of which is difficult to ascertain. That is why two simulations were carried out. In the first, the measure is assumed to be neutral for the budget; in the second, it is said to cost one billion euro per annum, or 0.3 p.c. of GDP. Taking account of the volatility seen in the data on both cash flows and corporation tax, the shock is stated directly as a nominal amount rather than by modifying the rate of corporation tax.

2. Results

In each simulation, the measure is assumed not to influence the wage negotiations, so that there is no change in labour costs excluding indexation. No fiscal rule is activated ensuring that the public debt adheres to a predefined path, so that the higher public debt caused by the measure is not offset by raising other taxes or cutting expenditure.

Table 1 presents the effects on long-term investment demand where investment reacts to production and the user cost of capital. The shock is applied to the interest rate present in the user cost of capital. Its impact on the actual user cost also depends on the level of the risk premium: the higher that premium, the weaker will be the proportional effect of the shock on the user cost of capital. As already stated, this risk premium is kept constant (at 10 p.c. per annum, corresponding to the value used when estimating the model).

The reduction in the cost of capital stimulates investment demand which in turn boosts domestic demand and demand for imports. The strengthening of domestic demand leads to expanding employment and lower unemployment. If the budgetary cost of the measure is zero, business investment increases by a maximum of 0.8 p.c. and employment expands by around 3,000 units. Such an adjustment to the tax system that is related to investment funding has practically no effect on prices.

Table 2 shows the cumulative long-term and accelerator effects generated by short-term cash flows when they increase by one billion euro.

If the measure causes a reduction in corporation tax, it increases the companies' cash flows. These additional cash flows give rise to investment expansion in excess of that due to the capital-labour substitution resulting from the reduction in the user cost of capital. This cash-flow effect is greater the higher the *ex ante* budgetary effect, and hence the impact on cash flows. If the *ex ante* budgetary effect is one billion euro, the impact on business investment is 1.6 p.c., and the impact on employment is around 6,700 units. Apart from a very small increase in personal income tax and social contributions resulting from job creation, the payback effects on public finances are relatively weak.

TABLE 5.1 EFFECTS OF THE REDUCTION IN THE COST OF CAPITAL FOLLOWING THE INTRODUCTION OF THE RISK CAPITAL ALLOWANCE IN A SCENARIO OF *EX ANTE* BUDGET NEUTRALITY

(p.c. differences in relation to the baseline simulation, unless otherwise stated)

	Year 1	Year 2	Year 3	Year 4	Year 5
Prices and costs					
HICP	0.00	0.03	0.04	0.03	0.01
HICP excluding energy	0.00	0.03	0.04	0.03	0.01
Private consumption deflator	0.00	0.03	0.04	0.03	0.01
Deflator of the gross fixed capital formation	–0.01	–0.01	0.01	0.01	–0.01
GDP deflator	–0.00	–0.00	0.01	0.01	0.01
Unit labour cost	–0.01	–0.01	0.04	0.06	0.05
Hourly labour cost	0.00	0.02	0.04	0.04	0.02
Productivity	0.01	0.02	0.00	–0.02	–0.04
Real compensation per employee	0.00	–0.01	0.00	0.00	0.00
Import deflator	0.00	0.04	0.04	0.02	0.01
Export deflator	0.00	0.02	0.02	0.02	0.01
Terms of trade[1]	–0.00	–0.02	–0.01	0.00	0.00
Economic activity (at constant prices)					
GDP	0.01	0.04	0.05	0.05	0.04
Private consumption	0.00	0.00	0.00	0.01	0.00
Public consumption	0.00	0.00	0.00	0.00	0.00
Investment	0.13	0.48	0.55	0.53	0.52
Exports	0.00	0.00	–0.01	–0.02	–0.02
Imports	0.02	0.07	0.08	0.07	0.07
Real disposable income of households	0.00	–0.01	0.00	0.01	0.01
Household savings ratio (p.c. of disposable income)	0.00	–0.01	–0.01	0.00	0.00
Labour market					
Unemployment rate[1]	0.00	–0.02	–0.04	–0.06	–0.06
Total employment	0.00	0.02	0.05	0.06	0.07
of which: market sector	*0.00*	*0.02*	*0.06*	*0.08*	*0.08*
Budgetary changes (in p.c. of GDP)					
Total revenues[1]	0.00	0.02	0.03	0.03	0.02
Total expenditure[1]	0.00	0.00	0.00	–0.01	–0.01
Net financing balance[1]	0.00	0.02	0.03	0.03	0.03
Primary balance[1]	0.00	0.02	0.03	0.03	0.03
Public debt[1]	0.00	–0.01	–0.04	–0.07	–0.10
Gross fixed capital formation					
Housing	0.00	0.00	0.00	0.00	0.01
General government	0.00	0.00	0.00	0.00	0.00
Enterprises	0.19	0.69	0.78	0.77	0.76

Source: NBB.
(1) Absolute deviations from the baseline simulation.

TABLE 5.2 EFFECTS OF THE REDUCTION IN THE COST OF CAPITAL FOLLOWING THE INTRODUCTION OF THE RISK CAPITAL ALLOWANCE ACCOMPANIED BY AN *EX ANTE* BUDGETARY COST OF ONE BILLION EURO PER ANNUM

(p.c. differences in relation to the baseline simulation, unless otherwise stated)

	Year 1	Year 2	Year 3	Year 4	Year 5
Prices and costs					
HICP	0.00	0.04	0.08	0.07	0.04
HICP excluding energy	0.00	0.04	0.08	0.07	0.04
Private consumption deflator	0.00	0.04	0.08	0.07	0.04
Deflator of the gross fixed capital formation	–0.01	–0.02	0.01	0.01	–0.01
GDP deflator	0.00	–0.01	0.01	0.02	0.01
Unit labour cost	–0.02	–0.02	0.07	0.11	0.11
Hourly labour cost	0.00	0.03	0.08	0.08	0.05
Productivity	0.02	0.05	0.01	–0.04	–0.07
Real compensation per employee	0.00	–0.02	0.00	0.01	0.01
Import deflator	0.01	0.06	0.08	0.05	0.02
Export deflator	0.00	0.04	0.04	0.04	0.02
Terms of trade[1]	0.00	–0.03	–0.04	–0.02	0.00
Economic activity (at constant prices)					
GDP	0.02	0.08	0.10	0.10	0.10
Private consumption	0.00	0.00	0.01	0.02	0.02
Public consumption	0.00	0.00	0.00	0.00	0.00
Investment	0.21	0.86	1.12	1.15	1.12
Exports	0.00	–0.01	–0.02	–0.03	–0.03
Imports	0.03	0.13	0.16	0.16	0.15
Real disposable income of households	0.00	–0.02	–0.01	0.01	0.02
Household savings ratio (p.c. of disposable income)	0.00	–0.02	–0.02	–0.01	0.00
Labour market					
Unemployment rate[1]	0.00	–0.03	–0.08	–0.11	–0.13
Total employment	0.00	0.03	0.09	0.13	0.15
of which: market sector	*0.00*	*0.04*	*0.11*	*0.15*	*0.18*
Budgetary changes (in p.c. of GDP)					
Total revenues[1]	–0.31	–0.27	–0.23	–0.22	–0.22
Total expenditure[1]	0.00	0.02	0.03	0.03	–0.02
Net financing balance[1]	–0.32	–0.29	–0.26	–0.25	–0.25
Primary balance[1]	–0.31	–0.27	–0.23	–0.21	–0.20
Public debt[1]	0.20	0.48	0.72	0.94	1.14
Gross fixed capital formation					
Housing	0.00	0.00	0.00	0.01	0.02
General government	0.00	0.00	0.00	0.00	0.00
Enterprises	0.30	1.25	1.61	1.64	1.61

Source: NBB.

(1) Absolute deviations from the baseline simulation.

TABLE 6.1 TAXES ON COMPANIES

(millions of euros)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Taxes on corporate profits	**7,760**	**7,702**	**8,089**	**8,091**	**8,142**	**7,912**	**9,210**	**10,223**	**11,835**	**12,143**
Advance payments	6,925	6,755	7,115	7,125	6,586	6,600	7,976	8,398	9,033	9,782
Assessments[(1)]	143	178	422	347	949	799	540	852	1,821	1,311
Withholding tax on income from movable assets	686	763	548	607	581	502	684	964	961	1,032
Other taxes on income	6	7	5	13	25	11	10	9	21	18
Other taxes on companies	**297**	**295**	**274**	**279**	**308**	**303**	**382**	**631**	**414**	**446**
Annual tax on undertakings for collective investment	67	81	92	96	103	104	151	189	209	253
Levy to combat the non-use of electricity production sites	0	0	0	0	0	0	0	0	70	0
Transfer to the Industrial Accident Fund by approved private insurance companies	230	215	182	183	205	199	231	229	255	248
Securitisations effected in 2005 and 2006	0	0	0	0	0	0	0	213	–120	–54
Total	**8,057**	**7,997**	**8,363**	**8,371**	**8,449**	**8,215**	**9,592**	**10,853**	**12,249**	**12,589**

Sources: FPS Finance, NAI, NBB.

(1) Including the tax on non-resident companies.

TABLE 6.2 TAXES ON COMPANIES

(percentages of GDP)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Taxes on corporate profits	**3.4**	**3.2**	**3.2**	**3.1**	**3.0**	**2.9**	**3.2**	**3.4**	**3.7**	**3.7**
Advance payments	3.0	2.8	2.8	2.8	2.5	2.4	2.8	2.8	2.9	3.0
Assessments (1)	0.1	0.1	0.2	0.1	0.4	0.3	0.2	0.3	0.6	0.4
Withholding tax on income from movable assets	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Other taxes on income	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other taxes on companies	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.1**	**0.1**
Annual tax on undertakings for collective investment	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Levy to combat the non-use of an electricity production site	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transfer to the Industrial Accident Fund by approved private insurance companies	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Securitisations effected in 2005 and 2006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total	**3.5**	**3.4**	**3.3**	**3.2**	**3.2**	**3.0**	**3.3**	**3.6**	**3.9**	**3.8**

Sources: FPS Finance, NAI, NBB.

(1) Including the tax on non-resident companies.

TABLE 7.1 IMPLICIT MACROECONOMIC CORPORATE TAX RATES

(percentages)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
In proportion to the gross operating result and other factors [1]										
Tax on corporate profits	15.9	15.4	15.2	15.2	14.4	13.4	13.9	14.3	14.2	14.9
of which: advance payments	*14.2*	*13.5*	*13.4*	*13.4*	*11.7*	*11.2*	*12.1*	*11.7*	*11.7*	*11.9*
Adjusted corporation tax [2]	16.5	15.7	16.2	16.0	13.7	13.5	14.5	14.4	14.7	14.8
In proportion to the net operating result and other factors [1]										
Tax on corporate profits	29.4	29.2	28.9	30.6	28.5	26.0	25.8	25.4	24.6	25.7
of which: advance payments	*26.2*	*25.6*	*25.4*	*27.0*	*23.1*	*21.7*	*22.3*	*20.9*	*20.3*	*20.6*
Adjusted corporation tax [2]	30.5	29.8	30.8	32.3	27.1	26.1	26.9	25.5	25.5	25.7

Sources: FPS Finance, NAI, NBB.

(1) Apart from the operating result, the macroeconomic approximation of the tax base includes net interest received, net income from property attributed to the holders of insurance policies, and net income from land and mineral reserves.

(2) The adjustment was made by transferring to the previous year the amount collected by way of the assessments, so as to make them coincide with the advance payments relating to the same tax year. The amount of the assessments to be collected in 2008, which should be compared with the advance payments made in 2007, was estimated at 1,286 million euro. A further adjustment neutralised the influence of the exceptional acceleration in the rate of the assessments in 2006, which boosted public revenues by around 900 million euro, and the influence of one-off receipts estimated at 245 million euro, resulting from the measure introduced in 2007 permitting the distribution or investment of tax-exempt reserves at a reduced rate.

Results of the Bank's survey of wage-setting in Belgian firms

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Introduction: why conduct a survey on wage-setting?

This article presents the results of a one-off survey of wage-setting covering over 1,400 Belgian firms in manufacturing industry, the energy sector, the construction sector, trade, business services and financial institutions employing at least five workers. The sectors covered by the survey together represent 55 p.c. of dependent employment in Belgian firms. The survey which was conducted by the Bank in the autumn of 2007 is the Belgian component of an initiative launched by the Wage Dynamics Network (WDN). This research network set up by the European System of Central Banks (ESCB) examines wage dynamics in general and the existence of wage rigidity in particular.

The WDN is a sequel to the ESCB's previous Inflation Persistence Network (IPN), which had found considerable variations in price rigidity between sectors and products (Altissimo et al., 2006). Those variations were due in particular to the cost structure at firm and sector level. There were signs that the frequency of price adjustments is lower in sectors where the cost of labour forms a large proportion of total costs, particularly in the service sector. Further research on wage dynamics was therefore desirable.

The WDN is divided into four groups. A "meta-group" acts as overall coordinator and aims to present general conclusions and policy recommendations. The "macro-group" introduces concepts of wage rigidity into macroeconometric models. The "micro-group" uses microeconomic statistics to conduct econometric research into wage rigidity and the behaviour of firms. This article is part of the work of the survey group. The WDN considered it useful – as in the case of the IPN – to conduct a survey in the various participating countries to accompany the empirical analysis based on individual employees' wage data obtained, for instance, from administrative data banks. Seventeen countries agreed to such a survey. This article discusses the results of the Belgian survey, though without wishing to anticipate the overall results at European level which will not be published until the end of 2008.

This article comprises six sections. Section 1 explains the subject of the survey. The second section discusses the wage-setting process, while the third section examines the existence of downward rigidity and the reasons for it. Section 4 focuses on the reaction to three types of shocks. Section 5 discusses wage and price adjustments and the connection between the two. The final section sums up the main findings of the survey.

1. Design of the survey

1.1 The questionnaire: preparation and content

The questionnaire was drawn up by the WDN in consultation with the seventeen participating countries, so that it is a harmonised questionnaire. Nonetheless, adjustments specific to particular countries were possible so long as

(1) The authors wish to thank the more than 1,400 firms for their cooperation, the Bank's short-term indicators section for conducting the survey, and the WDN participants for their comments.

they did not endanger the comparability of the results between countries. Thus, some specific questions were added to the Belgian survey form, e.g. concerning the wage cushion, i.e. the buffer between the wages actually paid and the sectoral pay scales, and concerning the automatic wage indexation mechanism. In addition, some questions were omitted because the information was already available in the IPN survey of price-setting or in the social balance sheets. It was necessary to simplify the Belgian survey form after the test run conducted on twenty-one firms showed that the response time for the first draft was too long.

The final questionnaire was sent out in September 2007 to all firms in the sample, namely a total of over 4,000. The questionnaire in Annex 1 relates to manufacturing industry, and the construction and energy sectors. With some minor terminological adjustments, a similar questionnaire was sent to firms in the trade sector, the business services sector and financial institutions. The questionnaire comprises three sections with a total of twenty-eight questions.

Section 1 contains questions on wage-setting – to provide some idea of the collective bargaining process, the total or partial application of pay scales and the variable element of wages – and on the automatic wage indexation mechanism. Wages paid to newly recruited employees are also considered. In addition, the frequency and timing of pay adjustments are examined in depth.

Section 2 of the questionnaire examines the existence of downward wage rigidity and its causes. The questions are based on similar research in the United States (Blinder and Choi, 1990 ; Campbell and Kamlani, 1997), Sweden (Agell and Bennmarker, 2002) and Germany (Franz and Pfeiffer, 2006). It also ascertains the response to three types of shock : a weakening of demand, an increase in the cost of intermediate inputs, and a general rise in labour costs. The section concludes by examining the frequency and timing of price adjustments, and their link with wage adjustments.

Finally, the questions in section 3 concern the size of the workforce, the importance of labour costs, and the firm's position in the economic cycle.

The answers have to be viewed in the context of the 2006 annual accounts. Where wages are concerned, most of the questions concern the basic wage – i.e. the fixed pay excluding bonuses but including commission – of the main occupational category in the firm. The occupational categories are defined in question 1.1 and permit a distinction between blue-collar and white-collar workers and between their skill levels. The survey deliberately avoided the usual classifications applied here, which often take account only of the highest education obtained. In regard to prices, the participants were also asked to relate their answers to their main product, i.e. the product generating the largest volume of turnover.

The questionnaire contains three types of questions. The first type requires participants to tick one or more answers. The second type asks them to indicate the relevance of a particular statement, offering a choice between "not important", "not very important", "important", "very important" and "don't know". In both cases the response breakdown is given disregarding any questions left blank or marked as "don't know". The third type of question asks for exact figures. A response rate is calculated for each answer (see Annex 2). The response is satisfactory in each case (roughly 80 p.c. or more), except for a few quantitative questions. This article therefore does not present the answer to these last questions.

1.2 The sample

The one-off survey sample was based on the sample used for the Bank's monthly business survey of manufacturing industry, construction, trade and business services ; it was extended to include the energy sector and financial institutions. Conversely, firms with under five employees were omitted. Altogether the sample comprised 4,088 firms. In all, the sectors covered by the survey represent 55 p.c. of paid employment.

In total, 1,431 firms participated in the survey, representing a response rate of 35 p.c. In return for their cooperation, the participants were sent the average responses for their sector. The sample was composed in such a way that large firms were over-represented. While the participating firms represent 3 p.c. of the total numbers in the population, they account for 11 p.c. in terms of employment. Firms in manufacturing industry and the energy and financial sectors were heavily represented in terms of the number of employees.

Some of the survey results need to be given a weighting in order to make them representative of the total population of firms. For this purpose, the population was divided into twenty-four strata, namely six groups according to the sector of activity each of them composed of four groups according to the number of workers. The WDN had devised a weighting method which takes account of the availability in the seventeen countries of data on the total population of firms, divided into strata. In view of the survey subject, preference was accorded to weightings

TABLE 1 SAMPLE

(4,088 firms contacted, 1,431 participated: response rate 35 p.c.)

	Population		Participants		Representativeness (percentages)	
	Number of firms (1)	Employment (2)	Number of firms	Employment	Number of firms	Employment
Total	**44,624**	**1,771,454**	**1,431**	**194,650**	**3**	**11**
Manufacturing industry	10,390	542,583	650	106,695	6	20
Energy	30	14,888	11	2,591	37	18
Construction	7,457	157,591	210	8,775	3	6
Trade	15,871	396,938	297	29,541	2	7
Business services	10,485	541,701	237	19,965	2	4
Financial institutions	391	117,953	26	27,082	7	23
From 5 to 19 employees	32,052	326,600	578	5,298	2	2
From 20 to 49 employees	8,309	274,436	378	12,255	5	4
From 50 to 199 employees	3,257	334,433	335	32,840	10	10
200 employees or more	1,006	835,985	140	144,257	14	17

Source: NBB.
(1) Firms accountable for VAT in the sectors covered by the survey, 2005 data.
(2) Firms submitting declarations to the NSSO and belonging to the sectors covered by the survey, data for the 2nd quarter of 2006.

– also referred to as sample weighting ratios – based on employment. They are calculated by taking the employment of the total population of the stratum and dividing it by the number of firms in the stratum in question. For a given observation (firm) they thus indicate the number of workers which that figure represents in the total population, taking account of the firm's size class and the sector to which it belongs. The sum of the sample weights of all firms together is equal to total dependent employment of the population making up the sample.

In order to take account of the significance of a participating firm in the total sample – the response from a large firm is more important than that of a small firm in the wage-setting process as a whole – individual weights are calculated for each firm. Those weights are the ratio between employment in the firm and the total number of employees in the sample. Each firm is therefore given a dual weighting, namely the sample weighting of the stratum to which the firm belongs multiplied by the firm's individual weighting.

The division into strata and, consequently, the calculation of the sample weights take no account of the classification of the employees according to occupational status, because it is not possible to divide the staff in the total population of firms into the occupational categories identified in the survey. It was therefore decided to present these results and all the results relating to them in unweighted form. That is more particularly the case in sections 2 and 3 of this article; each table and chart specifies whether or not the figures are weighted.

2. Wage-setting in firms

The first part of the survey contains questions on wage-setting in firms. They are directed mainly at how the institutional context of wage-setting in Belgium determines the wage policy of the firms. For example, it is evident that the collective pay negotiations organised at sectoral level and the wage indexation mechanism are very important. However, firms can nevertheless deal with this institutional context in different ways, e.g. by concluding supplementary collective agreements at firm level. These aspects are covered by questions 1.2 to 1.9 in the survey.

2.1 Institutional aspects

One of the main institutional aspects of wage-setting is the degree to which wages are determined by negotiations and specified in collective agreements. Other research by the WDN shows that in the great majority of

European countries wage negotiations are conducted collectively and at various levels in the hierarchy (cf. Du Caju et al., 2008a). Often there is a general national guideline combined with more specific wage bargaining at an intermediate level: sectoral, regional or per occupational category, possibly supplemented by more decentralised negotiations at firm level. In many cases the consultations have a hierarchical structure with agreements at a higher level being binding for the lower levels[1]. However, there are variations between countries in regard to the dominant level of pay negotiations. In Belgium this pattern, which is characteristic of many European countries, takes the form of the wage norm setting a national guideline and wage negotiations conducted predominantly at sectoral level in the joint committees, possibly supplemented by agreements at firm level. The indexation mechanism also plays an important role.

In the Bank's survey, question 1.2 asks about the competent joint committee, and questions 1.3, 1.4 and 1.5 look at the existence and importance of any collective wage agreements concluded at firm level. Around 98 p.c. of firms in the survey report at least one competent joint committee, which is what one would expect in a country where wage bargaining is highly organised at sectoral level, and sectoral agreements are generally declared to be binding throughout the sphere of competence of the joint committee. In this regard there are hardly any variations between sectors[2] or between firms of differing sizes.

The situation is different for collective wage agreements concluded at the firm level. Only 26 p.c. of the firms claim to apply such an agreement. This result confirms what we have already found from another source, namely the Structure of Earnings Survey conducted by the DGSEI. This means that the dominant sectoral negotiations certainly do not preclude supplementary agreements at firm level. The survey results clearly show that pay agreements at firm level are, as expected, more common in the case of larger firms: 67 p.c. of firms employing 200 or more staff have such an agreement, compared to just 9 p.c. of firms with between 5 and 19 employees. This explains why the weighted total of the firms with a company agreement is 30 p.c. Partly as a result of the concentration of large firms in some sectors, collective pay agreements at firm level appear relatively common in the energy sector, manufacturing industry and financial institutions, and less so in construction, trade and business services.

(1) On the understanding that "opt-out" clauses can be applied in specific cases.
(2) The figure for the energy sector is based on only a small number of firms, and must therefore be interpreted with caution.

TABLE 2 INSTITUTIONAL ASPECTS OF WAGE-SETTING IN BELGIUM (QUESTIONS 1.2, 1.3, 1.4 AND 1.9)
(percentages of the total)

	Collective wage agreements		Wage indexation mechanism		
	Competent joint committee	Collective agreement at firm level	Indexation by a fixed amount of 2 p.c. (threshold index)	Indexation at set intervals	Average number of indexations per annum
Total	**98** (98)	**26** (30)	**57** (36)	**43** (64)	**2**
Manufacturing industry	98	42	58	42	1
Energy	55	64	60	40	12
Construction	100	15	34	66	4
Trade	99	9	63	37	1
Business services	98	11	72	28	1
Financial institutions	100	40	14	86	6
From 5 to 19 employees	98	9	70	30	2
From 20 to 49 employees	98	21	62	38	2
From 50 to 199 employees	98	43	47	53	2
200 employees or more	98	67	41	59	2

Source: NBB.
Unweighted results, re-scaled by excluding missing answers. Weighted totals in brackets.

The percentage of workers covered by a collective wage agreement – i.e. the collective agreement coverage ratio – is particularly high in Belgian firms, compared with the ratio in other countries, the main reason being that the sectoral agreements are generally binding [1]. According to the survey data, that coverage ratio is at least 90 p.c., corresponding to traditional estimates for Belgium produced by international institutions (e.g. the OECD's Employment Outlook). The coverage ratio is high in all sectors and size classes.

In all European countries, price movements are among the key determinants of wages, and in many countries there is some form of automatic link between prices and wages for a (sometimes considerable) number of employees (e.g. for the minimum wage or for the public sector). However, together with Luxembourg and Cyprus, Belgium has a fairly general system of automatic indexation of nominal wages, although its effects are influenced by reference to the health index and by the operation of the wage norm. It is up to the joint committees to define the details of the general principle of wage indexation. Broadly speaking, two systems are possible. The first is the same as that for the public sector, whereby wages are adjusted in fixed instalments of 2 p.c. whenever the threshold is exceeded. A second system adjusts wages at fixed intervals (from once to twelve times a year), but by variable amounts.

The survey findings show that an unweighted 57 p.c. of firms apply a threshold index mechanism, whereas 43 p.c. operate a system of indexation at fixed intervals. The latter is more common in larger firms, so that the weighted results (64 p.c.) indicate that the majority of employees come under this mechanism. On average, these firms index wages twice a year, with more frequent adjustments in the energy sector, financial institutions and construction. In periods of low inflation, the system of indexation at fixed intervals leads to more frequent adjustments.

2.2 Wage levels

In view of the institutional framework of wage-setting in Belgium, outlined above, and the way in which it is implemented in practice in the firms, the wages which firms actually pay to their employees naturally depend to a large degree on the collective agreements. In the Bank's survey, question 1.12 asks about the factors determining the wage level of new staff recruited by the firm, and question 1.2 inquires about the ratio between wages actually paid and the pay scales determined by the joint committees.

(1) Question 1.5 in the survey concerns the coverage ratio. The results are not presented in this article.

TABLE 3 DETERMINANTS OF THE WAGES OF NEWLY RECRUITED EMPLOYEES (QUESTION 1.12)
(percentages of the total)

	Collective agreement	Wages of comparable employees in the firm	Wages of comparable employees outside the firm	Availability of comparable employees on the labour market	None of these
Total	**36**	**50**	**4**	**5**	**5**
	(45)	(44)	(6)	(4)	(1)
Manufacturing industry	35	54	3	4	4
Energy	27	64	9	0	0
Construction	**48**	**44**	1	2	3
Trade	28	49	6	6	10
Business services	37	47	6	8	3
Financial institutions	38	46	8	8	0
From 5 to 19 employees	36	47	3	5	10
From 20 to 49 employees	30	59	4	4	3
From 50 to 199 employees	37	53	3	5	2
200 employees or more	50	36	8	5	1

Source: NBB.
Unweighted results, re-scaled by excluding missing answers. Weighted totals in brackets.

TABLE 4 THE WAGE CUSHION: A BUFFER BETWEEN ACTUAL WAGES AND SECTORAL PAY SCALES (QUESTION 1.2)

(firms answering that actual wages exceeded the sectoral pay scales; percentages of the total)

	Unskilled blue-collar workers	Skilled and supervisory blue-collar workers	Clerical staff	Highly-skilled and management staff
Total	**37**	**50**	**54**	**63**
Manufacturing industry	51	65	59	66
Energy	0	17	13	50
Construction	9	18	29	36
Trade	35	54	56	65
Business services	18	30	56	67
Financial institutions	14	17	69	71
From 5 to 19 employees	24	35	41	49
From 20 to 49 employees	31	44	48	60
From 50 to 199 employees	51	63	68	72
200 employees or more	65	68	75	80

Source: NBB.
Unweighted results, re-scaled by excluding missing answers.

According to the responses by firms in the survey sample, the level of wages paid to new employees is determined primarily by what is specified in collective agreements (at the level of the sector or the firm) and by the wage level of comparable employees in the firm. Almost 90 p.c. of firms mention one of these two factors as the key determinant for new employees' wages, with little variation between firms operating in different sectors. In large firms, the wages of new employees are slightly more dependent on collective agreements, possibly a firm agreement. Only around 5 p.c. of firms state that, in deciding the level of wages for new employees, they take account of the wages of comparable workers outside the firm (working for competitors) or the availability of the required workers on the labour market. Only really large firms, employing 200 or more staff, seem to take relatively greater account of the level of wages in other firms. Among the smallest firms, which are concentrated in the trade sector, 10 p.c. take no account of the determinants listed.

Although the wages of new employees are evidently determined largely by collective agreements, the wages which firms actually pay to their staff may still deviate from the scales fixed by the sectoral agreements concluded by the joint committees. This may be done via collective wage agreements concluded at firm level, or a unilateral, voluntary pay policy on the part of the firm, whereby the staff are paid above the minimum levels for the sector. In the economic literature, this situation whereby the actual wages which a firm pays are higher than the mandatory pay scales set by collective agreements concluded at a higher level is described as a "wage cushion". Such a wage cushion can in fact provide a buffer between the actual wage and the lower limit for that wage, so that the firm has more scope for adjusting the actual wage in line with circumstances without coming up against the lower limit (cf. Cardoso and Portugal, 2005). A wage cushion may be formed where sectoral pay scales are very low, e.g. in heterogeneous sectors with wide variations between firms and workers, where it is difficult for the social partners to define generally valid pay conditions. A wage cushion may also exist as a result of circumstances in firms which perform well within the sector and have substantial ability to pay, so that the workers can demand a share of the proceeds via rent sharing (cf. Rycx and Rusinek, 2008 for an analysis of rent sharing in Belgium).

Survey question 1.2 deals in particular with this wage cushion. It is evident that the actual wages paid to unskilled blue-collar workers are equal to the pay scales fixed by the joint committees in most of the firms questioned (62 p.c.), and in 49 p.c. of firms the same applies to skilled and supervisory blue-collar workers. In contrast, in the case of white-collar workers – and for highly-skilled staff (63 p.c.) even more so than for clerical workers (54 p.c.) – actual wages exceed the sectoral pay scales in most of the firms.

A negligible number of firms (under 1 p.c.) pay wages below the sectoral pay scales, either because the firms do not have to implement the agreement, e.g. because it is not generally binding, or because the firm uses staff who can be paid a lower wage (e.g. young trainees).

Examination of the breakdown by sector shows that certain sectors are less inclined than others to pay wages above the levels set by the sectoral agreements. For instance, a wage cushion seems to be relatively uncommon in the construction sector, which comprises many small and comparable firms with specific types of blue-collar workers, whereas white-collar workers (both highly skilled and low-skilled) have a wage cushion, particularly in financial institutions. This is of course connected with the relative demand for this type of workers in the respective sectors.

The finding that the chance of a wage cushion increases with the skill level of the staff is also valid within each firm size class. However, the number of firms with a wage cushion rises the larger the firm's workforce. The chance of a wage cushion for each category of employee is greater in the larger size classes. This confirms the finding – which has already emerged from other research – of a "wage premium" for working in a large firm. A wage cushion is less common for the lower skilled than for highly-skilled staff, but the difference between the two is narrower in large firms than in small ones.

3. Downward wage rigidity

One of the main WDN research topics is downward wage rigidity, or the resistance to pay cuts in situations where, from a purely economic angle, such reductions in the price of labour would be desirable. In this respect the survey of firms, and more particularly questions 2.1 to 2.4, supplements the findings obtained from administrative statistics on the wages of individual employees; these findings were obtained by the WDN using the method developed by the International Wage Flexibility Project (IWFP) (cf. Du Caju et al., 2007 and Du Caju et al., 2008b for the results for Belgium).

3.1 Wage freeze and wage reduction

The IWFP results for Belgium presented by Du Caju et al. (2007) indicate a relatively negligible degree of downward nominal wage rigidity, but a high degree of real wage rigidity (this may vary between groups of employees and between business sectors) which, for a country with substantial wage indexation, is totally in line with expectations. The survey of firms asks whether, in the past five years, the firm has frozen the basic wages of its employees (question 2.1) or reduced their basic wages (question 2.2). The two questions were answered separately, so that some overlapping is possible.

TABLE 5 WAGE FREEZE AND/OR WAGE REDUCTION IN THE PAST FIVE YEARS (QUESTIONS 2.1 AND 2.2)
(percentages of the total)

	Basic wages were **frozen**	Basic wages were **reduced**
Total	**6.3**	**1.7**
Manufacturing industry	7.8	2.0
Energy	9.1	0.0
Construction	1.0	0.5
Trade	6.8	1.7
Business services	5.5	2.1
Financial institutions	15.4	0.0
From 5 to 19 employees	3.3	0.4
From 20 to 49 employees	4.8	1.9
From 50 to 199 employees	8.1	3.3
200 employees or more	18.6	2.9

Source: NBB.
Unweighted results, re-scaled by excluding missing answers.

As expected, few firms answered that in the past five years they had frozen the basic wages of some of their staff (6.3 p.c.) and/or reduced their wages (1.7 p.c.). In the specific context of Belgium, with automatic wage indexation, both wage reductions and wage freezes amount to real wage moderation, i.e. the movement in wages remains below inflation. The results confirm a very small degree of such real wage moderation in the construction sector, as pointed out by Du Caju et al. (2008b). Just as in that study, which uses a more detailed definition of the economic sectors, the downward real wage rigidity in the service sector appears to be more pronounced in the case of business services than in financial institutions, where there has been more restructuring and real wage moderation in the last five years. It seems that real wage moderation is more common in large firms, possibly because of the more complex wage policy and the application of local agreements in those large firms.

3.2 Reasons for resistance to wage cuts and alternative ways of reducing labour costs

The literature on economic theory mentions various possible reasons why firms are unable or unwilling to reduce wages in a situation where such a move would be desirable from a purely economic angle. A number of established theories concerning the labour market imply the individual worker's resistance to pay cuts. For instance, fairness theories state that pay cuts are regarded as unfair and unacceptable, and that they therefore damage the workers' morale. The efficiency wage theory states that there is a direct link between the workers' relative wage level and the effort that they are prepared to put in. Thus, lower wages would mean less effort (and less productivity). In this context, workers would compare their wages with those of comparable workers in similar jobs. Insurance theories state that workers are more risk averse than firms, and that their primary concern is security and a stable wage, which firms are in turn prepared to offer. In that sense, firms provide their workers with security against unpredictable pay cuts. According to turnover models, a reduction in wages would primarily result in the departure of the most productive workers (those who could most easily find other employment), discouraging firms from pursuing a policy of pay cuts. There are also theories which stress the reluctance of firms to reduce wages, owing to their concern for their reputation and the associated ability to attract staff, and the recruitment costs involved. Finally, there is also the institutional aspect, whereby collective agreements may prevent pay cuts.

Question 2.3 in the survey of wage-setting in firms tests the validity of these theories. It is clear that a great majority of the respondent firms consider almost all these theoretical explanations to be important or very important

TABLE 6 RELEVANT REASONS WHY BASIC WAGES COULD NOT BE REDUCED (QUESTION 2.3)

(percentage of firms considering the reason to be important or very important)

	From 5 to 19 employees	From 20 to 49 employees	From 50 to 199 employees	200 or more employees	Total
It would damage staff morale	85	89	90	89	**88**
It would have an adverse effect on the effort which staff put in	83	88	88	87	**86**
Staff do not like unexpected cuts in income	79	82	82	79	**80**
It would encourage the best staff to leave	75	79	82	81	**78**
It is prohibited by the employment legislation or by collective wage agreements	64	75	87	93	**75**
It would make it difficult to attract new workers	64	64	71	74	**67**
Staff compare their wages with those of comparable workers in other firms operating in the same market	62	66	68	67	**65**
It would lead to substantial costs in taking on and training new staff	62	66	64	63	**64**
It would damage the firm's reputation	45	48	55	50	**49**

Source : NBB.
Unweighted results, re-scaled by excluding missing answers.

TABLE 7 ALTERNATIVE STRATEGIES FOR REDUCING LABOUR COSTS (QUESTION 2.4)

(firms answering "important" or "very important"; percentages of the total)

	Unskilled blue-collar workers	Skilled and supervisory blue-collar workers	Clerical staff	Highly-skilled and management staff	Total
Recruitment of new workers at lower wages than those paid to staff leaving voluntarily	14	7	13	7	**12**
Early retirement to replace expensive staff with cheaper workers	6	6	6	6	**6**
Reduction or abolition of bonuses	4	3	6	9	**5**
Reduction or abolition of remuneration in kind	5	3	3	4	**4**
Adjustments to shift working	7	4	1	0	**4**
Delaying or freezing promotion	5	5	7	8	**6**
None of these strategies	**59**	**72**	**64**	**65**	**63**

Source: NBB.
Unweighted results, re-scaled by excluding missing answers.

in explaining the absence of pay cuts. It is the various theories on the personal commitment of the individual worker that seem to be particularly relevant, even more than the institutional impediments. The firm's reputation is less often cited.

If firms are unable or unwilling to reduce wages even though that is desirable from an economic angle, they have to look for other ways of responding to their economic environment. One possibility might be to reduce labour costs in alternative ways. Question 2.4 considers the potential options. Various possibilities are suggested: taking on new workers at lower wages than those paid to staff leaving the firm voluntarily; early retirement to replace expensive staff with cheaper personnel; reducing or abolishing bonuses and other forms of variable remuneration; reducing or abolishing remuneration in kind; adjusting shift working and bonuses, and finally, delaying or freezing promotion. The respondent firms were also able to answer that none of these strategies applied.

Two-thirds of the firms state that they do not use any of the above alternative ways of reducing labour costs. Replacing expensive workers with cheaper ones when an employee leaves the firm voluntarily or retires is the commonest strategy, particularly in the case of low-skilled blue-collar and white-collar workers. Reducing bonuses and delaying promotion are more common in the case of skilled staff and management, while reducing remuneration in kind is more often the approach for unskilled blue-collar workers. Adjustments to shift working are only relevant for blue-collar workers in manufacturing industry.

There remains the question of how firms react to adverse demand and supply shocks in a situation in which it is difficult to reduce wages, and there is little opportunity to use alternative instruments to cut labour costs. That question forms the subject of section 4 of this article.

4. Reaction to shocks

Questions 2.5 to 2.10 concern the way in which firms respond to shocks, particularly a negative demand shock, an increase in the cost of intermediate inputs, or a general rise in labour costs. In these three cases it seems that the commonest strategy adopted is cost reduction. In addition, firms are more inclined to increase their prices after a "cost-push" shock than to cut prices in response to weaker demand. That is totally in line with the IPN findings (Aucremanne and Druant, 2005)[1]. Finally, firms generally only adjust their output in the event of a negative demand shock.

A sectoral analysis of the response (not presented in this article) shows that price adjustments are used to a significant extent in construction and trade. Section 5 of this article will show that it is precisely these sectors that have the most frequent price adjustments. Manufacturing industry is the only sector to cut output in response to a weakening of demand.

(1) The IPN survey showed that the principal motives for price increases lie in "cost-push" factors, while in the case of price reductions the main factors are competitors' price cuts and weakening demand.

TABLE 8 REACTION TO SHOCKS (QUESTIONS 2.5, 2.7 AND 2.9)

(firms answering "important" or "very important"; percentages of the total)

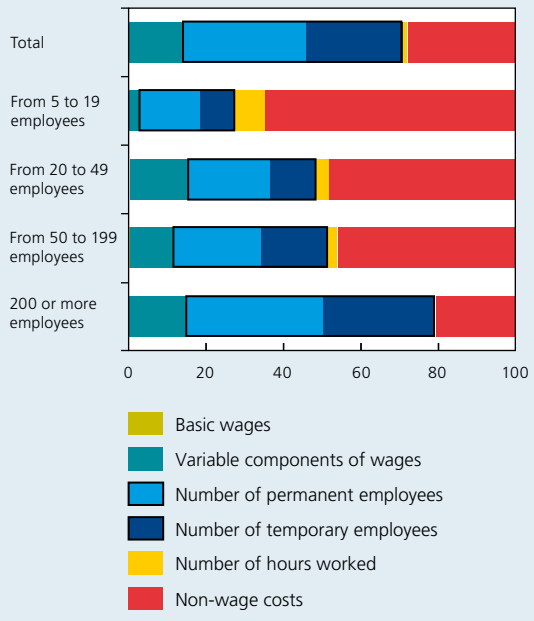
	Price adjustment	Margin adjustment	Output adjustment	Cost adjustment
Weakening of demand	40	52	34	75
Rise in the cost of intermediate inputs	57	42	13	75
Rise in labour costs	62	50	11	67

Source: NBB.
Results weighted on the basis of employment and re-scaled by excluding missing answers.

Firms which responded to a shock by adjusting their costs were also asked what strategy they pursued. This article presents the average response of the firms taking all three shocks together. It shows that almost 60 p.c. of firms reduced their costs by adjusting employment. The contraction of the workforce mainly concerns the number of permanent employees, and to a somewhat lesser extent the number of temporary workers. 28 p.c. of firms reduce their non-wage costs. Very few firms respond by cutting basic wages, and that is consistent with the downward wage rigidity already discussed, while in 14 p.c. of cases the variable pay components are reduced. Hardly any firms adopt the strategy of reducing working time.

CHART 1 COST-CUTTING STRATEGIES (QUESTIONS 2.6, 2.8 AND 2.10)

(average response to three shocks; percentages of the total)



Source: NBB.
Results weighted on the basis of employment and re-scaled by excluding missing answers.

However, the pattern varies widely according to the size of the firm's workforce. There is a clear, positive link between the size class and the response by adjusting employment: the larger the firm, the greater the reductions in the permanent and temporary workforce. While 25 p.c. of the smallest firms make staff cuts, two-thirds of the largest do so. The largest firms also make relatively more reductions in their temporary workforce, but they also employ more such workers. Conversely, the link with adjustments to non-wage costs is negative, and the proportion of firms using this strategy falls from two-thirds in the case of firms with 5 to 19 employees to one-fifth in the case of firms with 200 or more employees. Large firms are more likely than small ones to have greater scope to reduce their workforce in the event of difficulties. That is perhaps also the reason why it is virtually only the smallest firms with 5 to 19 employees which apply the strategy of reducing working time, although only 8 p.c. of them do so.

It is not possible to demonstrate a clear link between the sector and the degree to which the adjustment is made via employment. Sectors where labour costs form a large proportion of the total expenses, namely business services and the financial sector, do not pursue this strategy any more often than sectors with a low proportion of labour costs, such as the energy sector: on the contrary. In the financial sector, the adjustment process largely operates via temporary employment, but that is hardly ever the case in the energy and construction sectors. Here it is not possible to show any link with the percentage of temporary workers in the total workforce.

The adjustment of wages, particularly variable pay, is the commonest strategy in the sectors which, on average, pay larger bonuses, namely trade and construction. The high figure of 24 p.c. in business services is rather odd since bonuses are not significant in this sector. Probably this section of the survey mistakenly regarded commission

– which is commonly paid – as a variable pay component, whereas the questionnaire defined it as part of the basic wage.

The importance of the employment channel as a cost reduction strategy is confirmed by the answers to question 2.4 (cf. section 3 of this article), which concerns alternative strategies aimed at cutting labour costs. Almost two-thirds of firms state that they do not use any of these strategies.

5. Wage and price adjustments

A major part of the questionnaire deals with the frequency and timing of price and wage adjustments. While the questions on price adjustments can be used to verify some of the results of the IPN survey on pricing[1], the questions on wage adjustments are an additional source of information – supplementing the micro data – in the research on wage dynamics. By combining the answers to the two types of questions it is possible to examine in more detail the link between prices and wages. In addition, the survey includes an explicit question on the link between the timing of wage adjustments and price adjustments.

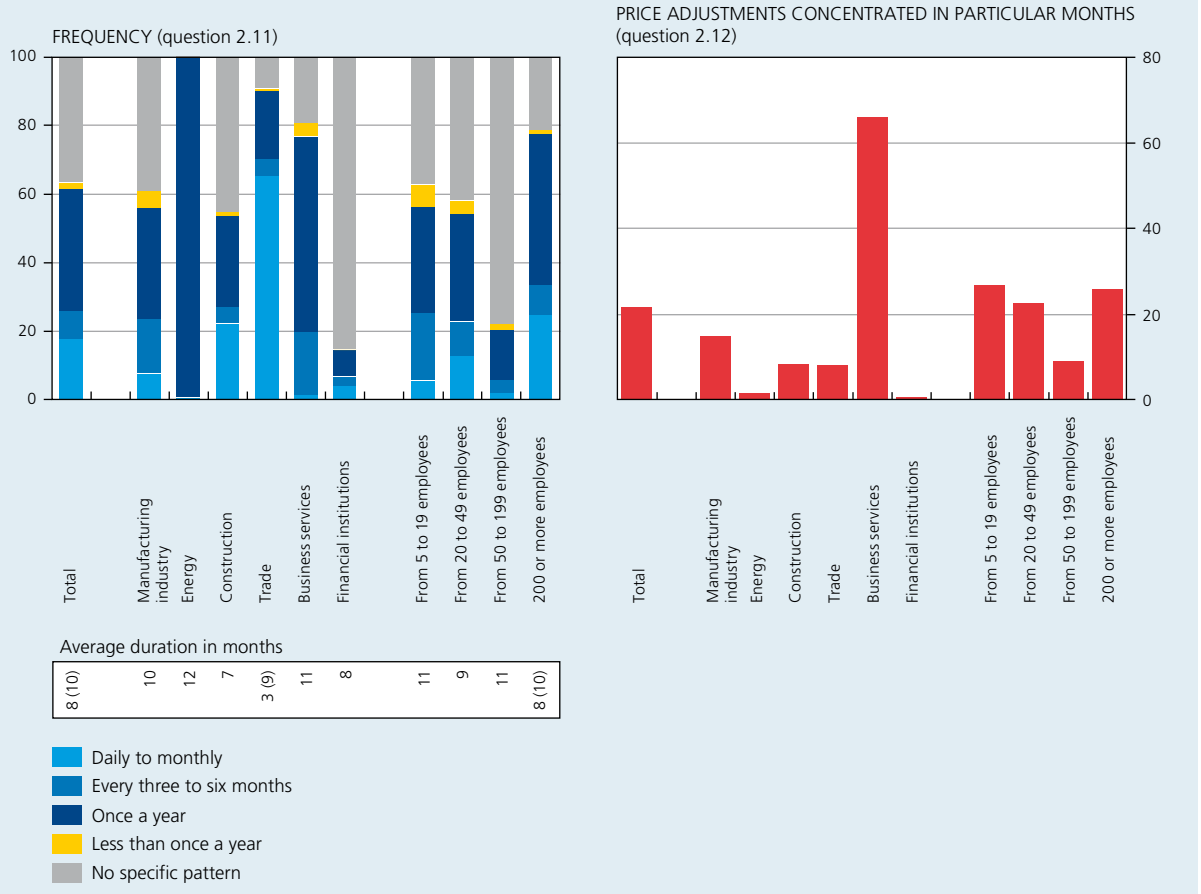
5.1 Frequency and timing of price adjustments

Question 2.11 asks firms to indicate how often they adjust the price of their main product under normal circumstances. The answer is no more than once a year

(1) That is the case for countries such as Belgium which conducted an IPN survey. For other countries it is a new source of information.

CHART 2 FREQUENCY AND TIMING OF PRICE ADJUSTMENTS PER SECTOR AND PER SIZE CLASS

(percentages of the total)



Source : NBB.
Results weighted on the basis of employment and re-scaled by excluding missing answers.
(...) Results adjusted for one outlier.

for 37 p.c. of firms. The same percentage say that they do not follow any specific pattern, while the remaining 26 p.c. adjust their prices more frequently. In the financial sector, in particular, there is a noticeable lack of any price adjustment pattern: the "price" is largely represented by the interest rate margin, so that the questions may be less relevant for this sector. Moreover, the survey took place in a period of financial market turmoil.

The level of detail in the possible answers (daily, weekly, etc.) permits an approximation of the average implicit duration between two successive price changes. That average interval is expressed in months. Naturally, it is not possible to take account of observations where no specific adjustment pattern is followed or where prices never change. In the case of firms answering "less than once every two years", the duration is estimated at 36 months. On that basis the average interval between two successive price changes is 8 months. Following adjustment for an important outlier in the distribution sector – which comes under trade – where prices are adjusted very frequently, the figure comes to 10 months. That is shorter than the average duration found in the IPN survey, namely 13 months, but it may point to problems of comparability between the two sources. In the IPN survey, the firms themselves had to enter a figure for the total number of price adjustments, which permitted a more accurate calculation of the benchmark, and the options "no specific pattern" and "never" were not available, so that all the answers were taken into account. Moreover, the financial sector, which in the WDN survey featured frequent price adjustments for firms indicating a price adjustment pattern, was not included in the IPN survey sample.

Conversely, this benchmark duration can be used to compare the results per sector and per size class within the WDN survey. The average interval between two price adjustments is shortest in construction (7 months), the financial sector (8 months) and trade (9 months, following adjustment for the outlier). Price adjustments are least frequent in business services (11 months) and the energy sector (12 months). Manufacturing industry is in an intermediate position with 10 months. The IPN survey found similar differences between sectors. The variations between size classes are less pronounced: the average interval ranges between 9 and 11 months.

The timing of price adjustments, and particularly their potential concentration in particular months, is examined in question 2.12. The literature on the subject often distinguishes between time-dependent and state-dependent price strategies. In the case of time-dependent pricing, the timing of the adjustment is exogenous; in other words, it does not depend on the economic situation. In contrast, in the case of state-dependent behaviour, the timing of the price adjustment does depend on economic conditions. Which of the two approaches determines corporate pricing strategies is important for monetary policy. In a state-dependent context, prices will respond immediately if the shocks are sufficiently severe, whereas in a time-dependent context firms will wait for the predetermined moment even in the case of major shocks.

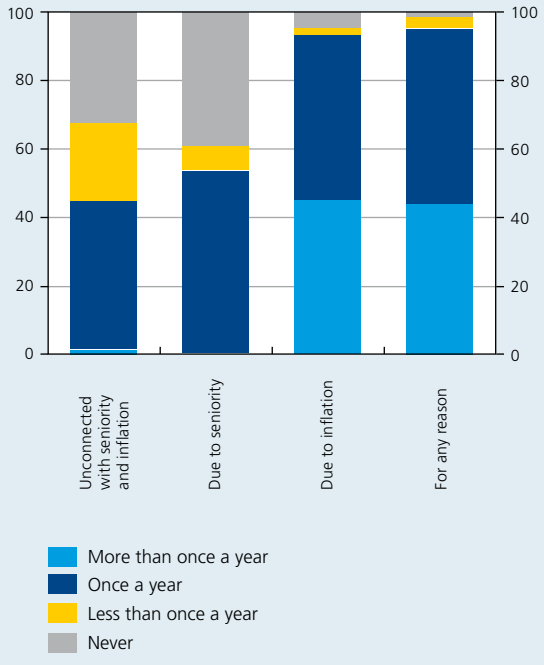
Time-dependent price adjustments are applied by 22 p.c. of firms, i.e. they adjust their prices in one or more specific months of the year. That figure was 26 p.c. in the IPN survey, even in the event of a sufficiently severe shock. Time-dependent pricing is particularly common in the business service sector, in combination with less frequent price adjustments, indicating price rigidity.

5.2 Frequency and timing of wage adjustments

Question 1.10 examines the frequency of wage adjustments from three specific angles. Firms had to state how often they normally adjust the basic wage of their main

CHART 3 FREQUENCY OF BASIC WAGE ADJUSTMENTS (QUESTION 1.10)

(percentages of the total)

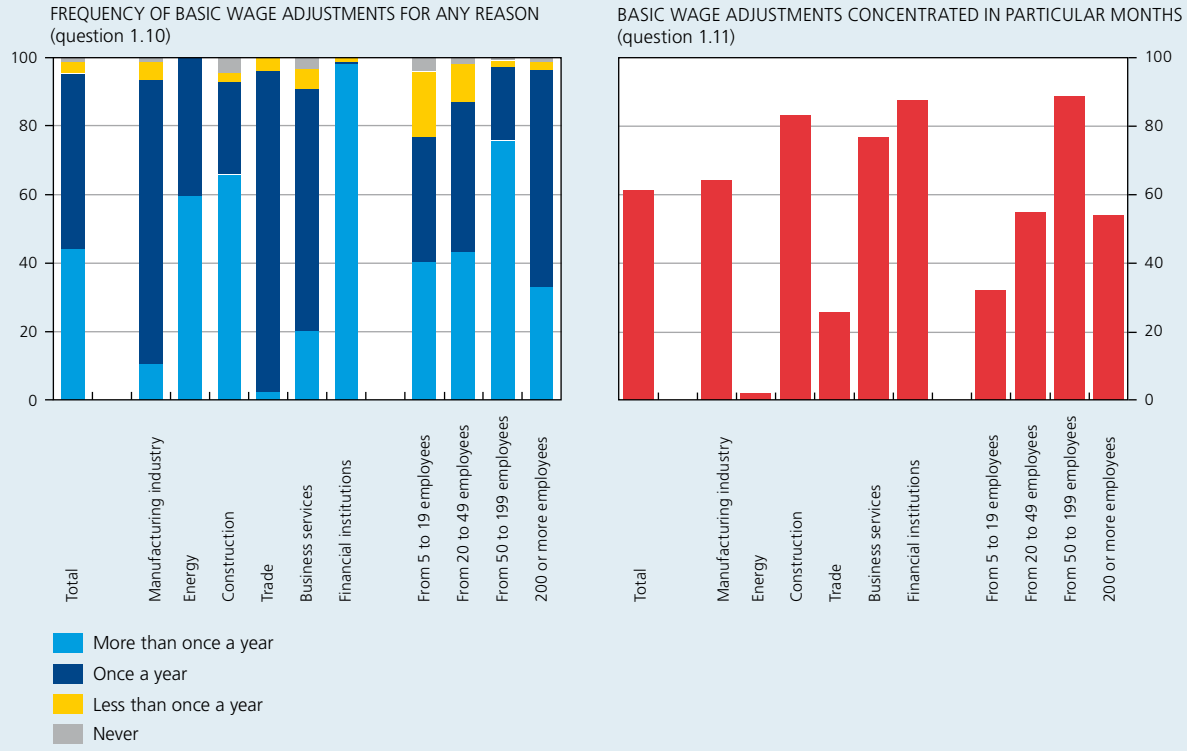


Source: NBB.

Results weighted on the basis of employment and re-scaled by excluding missing answers.

CHART 4 FREQUENCY AND TIMING OF BASIC WAGE ADJUSTMENTS PER SECTOR AND PER SIZE CLASS

(percentages of the total)



Source: NBB.
Results weighted on the basis of employment and re-scaled by excluding missing answers.

category of employees. It distinguished between wage adjustments due to inflation, those due to seniority and those unconnected with either of these factors. A composite variable was then devised to summarise the frequency of wage adjustments for any of the reasons mentioned, being, for each observation, the highest frequency of the three reasons of adjustment tested. The underlying idea here is that any wage adjustment, regardless of the reason, is a sign of flexibility.

Half of firms adjust wages once a year; 44 p.c. do so more often, and 5 p.c. less often. This means that 56 p.c. of firms adjust their wages no more than once a year, while in the case of price adjustments the figure was 37 p.c. The highest frequency applies to adjustments due to inflation, with a lower frequency for those due to seniority and reasons other than inflation. In the last two cases, only 1 p.c. of firms adjust wages more than once a year. These results tally with the picture revealed by the micro data, indicating negligible nominal rigidity and greater real rigidity (Du Caju et al., 2007).

In the absence of sufficiently detailed information on the number of wage adjustments, and in contrast to what was done for prices, it is not possible to calculate any average duration. The frequency distribution shows that wages change least frequently in trade, manufacturing industry and business services; over 80 p.c. of firms in these sectors adjust wages no more than once a year. A very high frequency of adjustments is found in the financial sector, where barely 2 p.c. of firms adjust wages annually or less often, followed by construction (34 p.c.) and the energy sector (40 p.c.). These are precisely the sectors where the highest frequency of indexation is found. In regard to the size classes, the frequency increases the larger the workforce, but in the case of very large firms with 200 or more employees it declines again.

Question 1.11 asks about time-dependent wage adjustments, i.e. adjustments to wages in one or more specific months: 61 p.c. of firms adopt this practice. The energy sector, trade and the smallest firms are those which make least use of this strategy.

5.3 Link between wage and price adjustments

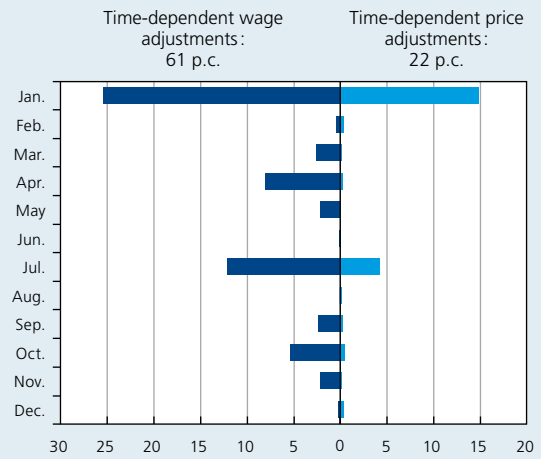
If the answers to questions 1.11 and 2.12 are considered jointly, it is possible to compare the timing of wage adjustments and price adjustments. Both are concentrated in the month of January. Many price and wage adjustments also take place in July; in the case of wages, in particular, there is a degree of concentration at the beginning of the second and fourth quarters.

The fact that almost two-thirds of firms apply time-dependent wage adjustments, and that these adjustments are concentrated in particular months of the year, is inextricably linked with the automatic wage indexation mechanism discussed in section 2 of this article. The majority of firms in fact index wages at fixed intervals, with an average frequency of twice a year.

The picture of coordinated price and wage adjustments concentrated in January and July is not borne out by the answers to question 2.13 on the closeness and direction of the link between the timing of decisions to adjust prices and wages. In 62 p.c. of cases there is no connection between the two decisions, while in 17 p.c. of firms there is a connection but no specific pattern, and only the remaining 21 p.c. state that there is a close link. In regard to the direction, the decisions are simultaneous in 5 p.c. of firms, prices follow wages in 9 p.c. of firms, and wages follow prices in 6 p.c. of firms. The link between wages and prices is strongest in business services, the construction and energy sectors and the largest firms. Further research will need to examine whether factors such as competitiveness and cost structure play a role here.

CHART 5 TIMING OF WAGE AND PRICE ADJUSTMENTS (QUESTIONS 1.11 AND 2.12)

(percentages of the total)



Source: NBB.

Results weighted on the basis of employment and re-scaled by excluding missing answers.

Conclusion

The analysis presented in this article is the outcome of a survey conducted by the Bank and forming the Belgian component of an initiative launched by the Wage Dynamics Network (WDN). The sectors covered by the survey together represent 55 p.c. of dependent employment in Belgian firms; 1,431 firms took part in the survey, implying a response rate of 35 p.c.

In Belgium the institutional model typical of many European countries, in which wages are negotiated successively at various levels in the hierarchy, takes the form of the wage norm (defining a national guideline), pay negotiations conducted primarily at sectoral level by the joint committees, and possibly additional agreements concluded at firm level. Almost all the respondent firms refer to at least one competent joint committee, and just over a quarter apply a collective wage agreement at the firm level. Such collective agreements are more common in large firms, and in the energy sector, manufacturing industry and financial institutions.

In all European countries, prices are one of the key determinants of wages, and in Belgium the indexation mechanism plays a significant role in that respect. The survey results show that just over half of firms apply a mechanism with a threshold index, while just under half operate in an environment where indexation takes place at fixed intervals. The latter system is more common in large firms, so that the weighted results indicate that this mechanism applies to the majority of employees.

In the respondent firms, the level of wages of new employees depends mainly on what is specified in collective agreements and on the wage level of comparable employees in the firm. However, the wages which the firm actually pays to its staff may deviate from the pay scales specified in the sectoral agreements by the joint committees. The actual wages paid to unskilled blue-collar workers correspond in the majority of the firms surveyed to the pay scales set by the joint committees. In contrast, in the case of white-collar workers – and for skilled staff, in particular, rather than clerical workers – the actual wages paid in the majority of the firms surveyed exceed the sectoral pay scales. Such a wage cushion, forming a buffer between the actual wages and the collectively agreed lower limits, is more common in large firms.

Only a few firms have frozen or reduced the basic wage for some of their employees in the recent past. This is due mainly to labour market theories concerning the personal commitment of individual employees ("efficiency wages", "fairness" and "turnover"), and institutional obstacles. Overall, firms seldom respond to adverse shocks by cutting basic wages or using alternative ways of reducing labour costs per employee. Certainly in large firms, costs are reduced mainly via the employment channel, i.e. by reducing the number of primarily permanent staff, and to a lesser extent temporary workers. Reductions in non-wage costs are also important, while variable pay components are only cut in a small number of cases. Wage adjustments, particularly adjustments to the variable component, are most often applied in the sectors which, on average, pay higher bonuses, namely trade and construction. The strategy of reducing working time is little used except in small firms, which have a much narrower margin for resorting to the employment channel.

In regard to the frequency of price adjustments, only a quarter of firms state that they adjust their prices more than once a year. The average interval between two price adjustments is shortest in construction, the financial sector and trade. Prices are adjusted least frequently in business services and the energy sector. Manufacturing industry is in an intermediate position. As regards the timing of the price adjustments, a distinction which is relevant for monetary policy is made between time-dependent price strategies, in which the time of the adjustment does not depend on economic conditions, and state-dependent price strategies in which prices respond immediately if the shocks are sufficiently severe. Time-dependent price adjustments occur in 22 p.c. of firms, and are noticeably common in the business service sector. Combined with the low frequency of price adjustments, this indicates price rigidity in that sector.

The frequency and timing of wage adjustments are closely linked to the indexation mechanism applied. Most firms adjust their wages no more than once a year. Adjustments due to inflation are made the most frequently, while adjustments due to seniority and reasons unconnected with inflation and seniority are the least frequent. Wages are adjusted least often in trade, manufacturing industry and business services. A very high frequency of adjustments is found in the financial sector, followed by construction and the energy sector. These are precisely the sectors where the frequency of indexation is highest. Time-dependent wage adjustments in a specific month apply to 61 p.c. of firms, and – like price adjustments – wage adjustments are concentrated in the month of January. Another peak occurs in July, and there is some concentration at the beginning of the second and fourth quarters, particularly in the case of wage adjustments. However, this picture of simultaneous wage and price adjustments is not borne out by other survey results on coordinated decisions to adjust wages and prices; only one-fifth of the participants state that the timing of the two decisions is closely linked.

To sum up, the results of this survey largely tally with information available elsewhere. However, they do add some new, relevant findings which already provide a clearer idea of the complex practice of wage-setting in firms. Nevertheless, more detailed research is needed on the basis of the data set combined with the survey results for other European countries. Such analyses are useful because the single monetary policy in the euro area increases the importance of balanced wage setting.

Annex 1

National Bank OF BELGIUM
Eurosystem

Telephone help-line concerning the questionnaire: +32(0)2 221 21 55

Please return the questionnaire duly completed by no later than 10 October 2007

WAGE-SETTING SURVEY

Manufacturing Industry - Construction - Energy

You can send us your answers in the attached reply envelope, via our free fax line **0800 95 969** (only in Belgium) or via our standard fax line **+32(0)2 221 31 07** (from other countries).

This survey is being conducted under the supervision and on the authority of the National Bank of Belgium. The information obtained will be used exclusively for analysis purposes and will only be circulated in aggregate form, keeping individual answers strictly confidential. The participants will receive a summary of the survey's main results.

Below are some instructions on completing the questionnaire.
1. Reference period: the period covered by your annual accounts for the year 2006. In the questionnaire you will be asked to refer either to the "reference period" or to the "end of the reference period".
2. Figures: if you have any problems in supplying exact figures, please give an approximate value.
3. Who is the person best placed to complete the questionnaire? The personnel manager or the business manager seem to be the persons best able to answer the questions; the information on turnover and the cost structure of your business, requested in section 3, can be obtained from the annual accounts.

What is your firm's main activity?.....

Your VAT number: .....

SECTION 1: SETTING AND ADJUSTING WAGES

1.1 What was the breakdown per occupational category of workers in your firm at the end of the reference period? In classifying your staff, take account of the standard of qualifications, experience and content of the job (supervisory or non-supervisory position).

production workers	..... %	1101
skilled and supervisory blue-collar workers	..... %	1102
clerical staff	..... %	1103
highly-skilled and management staff	..... %	1104
TOTAL	100 %	

1.2 What is the number of the joint committee or subcommittee applicable to your workers? (if more than one, list them in order of importance)

blue-collar workers:	n°	n°.....	1200 - 1
white-collar workers:	n°	n°.....	1203 - 4

Do the wages actually paid in your firm differ, on average, from the current scales set by the joint committee? (Please tick one answer per column)

	Production workers	Skilled and supervisory blue-collar workers	Clerical staff	Highly-skilled and management staff
	1211 - 12-13	1221 - 22-23	1231 - 32-33	1241 - 42-43
• no	☐ 1	☐ 1	☐ 1	☐ 1
• yes, they are higher	☐ 2	☐ 2	☐ 2	☐ 2
	by how much?..... %	by how much?..... %	by how much?..... %	by how much?..... %
• yes, they are lower	☐ 3	☐ 3	☐ 3	☐ 3
	by how much?..... %	by how much?..... %	by how much?..... %	by how much?..... %

What level of wages does your firm pay in comparison with competitors?
(Please tick only one answer) 1251

- lower ☐ 1
- roughly the same ☐ 2
- higher ☐ 3
- don't know ☐ 4

1.3 Is your firm covered by a collective wage agreement concluded outside the firm? (Please tick only one answer) 1301

- no, there is no agreement ☐ 1
- no, we opt out ☐ 2
- yes, we apply it ☐ 3

1.4 Is your firm covered by a collective wage agreement concluded within the firm? 1401

- no ☐ 1
- yes ☐ 2

1.5 If you have answered "yes" to question 1.3 or 1.4, what percentage of your workforce is covered by these collective wage agreements (taking all agreements together)?

☐ per cent 1501

In the rest of the questionnaire, some questions concern basic wages while others are interested in variable wages.
Basic wages = fixed remuneration excluding bonuses; in other words, standard remuneration and wages, and commission.
Variable wages = bonuses dependent on individual performance or the firm's results.

1.6 What percentage of the wage bill during the reference period was variable?

	Production workers		Skilled and supervisory blue-collar workers		Clerical staff		Highly-skilled and management staff	
• bonuses based on individual performance	..... %	1601	..... %	1602	..... %	1603	..... %	1604
• bonuses based on the firm's results	..... %	1611	..... %	1612	..... %	1613	..... %	1614

1.7 Does your firm have a policy of adjusting basic wages in line with inflation? 1701

- yes ☐ 1 ☞ go to **1.8**
- no ☐ 2 ☞ go to **1.10**

1.8 In what way do basic wage adjustments depend on inflation? (Please tick only one answer) 1801

- wage adjustments are automatically linked to:
  - past inflation
  - forecast inflation

  ☐ 1 ☐ 2 } go to **1.9**
- wage adjustments take informal account of :
  - past inflation
  - forecast inflation

  ☐ 3 ☐ 4 } go to **1.10**

1.9 What is the current automatic indexation system? (Please tick only one answer)

- indexation on exceeding a threshold index ☐ 1 1901
- indexation at fixed intervals ☐ 2 how many times a year? 1902

1.10 For the main occupational category represented in your firm (cf. question 1.1), how often are basic wages generally adjusted? (Please tick one answer per point)

	More than once a year	Once a year	Every two years	Less than every two years	Never	
• wage adjustments according to criteria other than seniority and inflation	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	1111
• wage adjustments according to seniority	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	1112
• wage adjustments according to inflation	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	1113

1.11 Under normal circumstances, are basic wages changed in any particular month(s)?

- no ☐ 1 1121
- yes, please specify which month(s)

J ☐ 01 F ☐ 02 M ☐ 03 A ☐ 04 M ☐ 05 J ☐ 06 J ☐ 07 A ☐ 08 S ☐ 09 O ☐ 10 N ☐ 11 D ☐ 12 1122

1.12 For the main occupational category represented in your firm (cf. question 1.1), what is the main determinant of the wages of new employees recruited by your firm? (Please tick only one answer) 1131

- collective wage agreement (taking all agreements together) ☐ 1
- wages of comparable workers in the firm ☐ 2
- wages of comparable workers outside the firm ☐ 3
- availability of comparable workers on the labour market ☐ 4
- none of the factors mentioned ☐ 5

SECTION 2: DOWNWARD WAGE RIGIDITY, RESPONSE TO SHOCKS AND PRICE ADJUSTMENTS

2.1 In the past five years, have the basic wages of certain workers in your firm been frozen?

- no ☐ 1 2101
- yes ☐ 1 ..... % of personnel 2102 - 3

2.2 In the past five years, have the basic wages of certain workers in your firm been reduced?

- no ☐ 1 2201
- yes ☐ 1 ..... % of personnel 2202 - 3

2.3 There are many reasons why basic wages should not be reduced – or should only be cut very slightly - even if your firm needs to reduce its labour costs. Please indicate how important these reasons are for your firm. (Please tick one answer per point)

	Not important	Not very important	Important	Very important	Don't know	
• it is prohibited by the labour regulations or by collective wage agreements	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2301
• it would have an adverse effect on the efforts of workers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2302
• it would be bad for the workers' morale	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2303
• it would damage the firm's reputation	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2304
• it would encourage the best workers to leave	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2305
• it would entail substantial costs relating to recruitment and the training of new workers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2306
• it would make it difficult to recruit new workers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2307
• workers do not like unexpected reductions in income	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2308
• workers compare their wages with those of comparable workers employed in other firms operating in the same market	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2309

2.4 Apart from reducing or freezing basic wages, do you use other strategies to reduce labour costs? (You may tick more than one answer per column)

	Production workers	Skilled and supervisory blue-collar workers	Clerical staff	Highly-skilled and management staff	
• recruitment of new workers (comparable in terms of experience and qualifications) at wages lower than those paid to staff leaving voluntarily	☐ 1	☐ 2	☐ 3	☐ 4	2401
• use of early retirement to replace workers on high wages with workers on lower wages	☐ 1	☐ 2	☐ 3	☐ 4	2402
• reduction or abolition of bonuses	☐ 1	☐ 2	☐ 3	☐ 4	2403
• reduction or abolition of benefits in kind	☐ 1	☐ 2	☐ 3	☐ 4	2404
• adjustments to shift working	☐ 1	☐ 2	☐ 3	☐ 4	2405
• delaying or freezing promotion	☐ 1	☐ 2	☐ 3	☐ 4	2406
• none of the strategies mentioned	☐ 1	☐ 2	☐ 3	☐ 4	2407

In answering the questions below, please refer to your main product (i.e. the one generating the largest percentage of your turnover during the reference period) and the main occupational category in your firm (identified in question 1.1).

2.5 How does your firm respond to an unexpected weakening of demand? (Please tick one answer per point)

	Not important	Not very important	Important	Very important	Don't know	
• it reduces prices	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2501
• it reduces margins	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2502
• it cuts production	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2503
• it reduces costs	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2504

2.6 If, in your answer to question 2.5, you attach any importance to cost reductions (boxes 2 to 4), indicate the main strategy which you use to achieve this objective. (Please tick only one answer)

- reduce basic wages ☐ 1
- reduce the variable components of wages (e.g. bonuses) ☐ 2
- reduce the number of permanent staff ☐ 3
- reduce the number of temporary staff/other persons working for the firm ☐ 4
- adjust the number of hours per worker ☐ 5
- reduce costs unconnected with labour ☐ 6

2.7 How does your firm respond to an unexpected increase in the cost of intermediate inputs affecting all firms in the market (e.g. a rise in oil prices)? (Please tick one answer per point)

	Not important	Not very important	Important	Very important	Don't know	
• it increases prices	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2701
• it reduces margins	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2702
• it cuts production	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2703
• it reduces other costs	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2704

2.8 If, in your answer to question 2.7, you attach any importance to the reduction of other costs (boxes 2 to 4), indicate the main strategy that you use to achieve this objective. (Please tick only one answer)

- reduce basic wages ☐ 1
- reduce the variable components of wages (e.g. bonuses) ☐ 2
- reduce the number of permanent staff ☐ 3
- reduce the number of temporary staff/other persons working for the firm ☐ 4
- adjust the number of hours per worker ☐ 5
- reduce costs unconnected with labour ☐ 6

2.9 How does your firm respond to an unexpected and permanent increase in labour costs affecting all firms in the market? (Please tick one answer per point)

	Not important	Not very important	Important	Very important	Don't know	
• it increases prices	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2901
• it reduces margins	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2902
• it cuts production	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2903
• it reduces other costs	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	2904

2.10 If, in your answer to question 2.9, you attach any importance to the reduction of other costs (boxes 2 to 4), indicate the main strategy that you use to achieve this objective. (Please tick only one answer)

- reduce the variable components of wages (e.g. bonuses) ☐ 1
- reduce the number of permanent staff ☐ 2
- reduce the number of temporary staff/other persons working for the firm ☐ 3
- adjust the number of hours per worker ☐ 4
- reduce costs unconnected with labour ☐ 5

2.11 Under normal circumstances, how often does the price of your firm's main product change? (Please tick only one answer) 2112

- more than once a year:
  - daily ☐ 1
  - weekly ☐ 2
  - monthly ☐ 3
  - quarterly ☐ 4
  - half-yearly ☐ 5
- once a year ☐ 6
- every two years ☐ 7
- less than every two years ☐ 8
- never ☐ 9
- there is no specific pattern ☐ 10

2.12 Under normal circumstances, are prices changed in any particular month(s)?

- no ☐ 1 2121
- yes, please specifiy which month(s)

J ☐ 01 F ☐ 02 M ☐ 03 A ☐ 04 M ☐ 05 J ☐ 06 J ☐ 07 A ☐ 08 S ☐ 09 O ☐ 10 N ☐ 11 D ☐ 12 2122

2.13 To what extent are changes in the price of your main product linked to wage adjustments? (Please tick only one answer) 2131

- there is no link ☐ 1
- there is a link but no particular rule ☐ 2
- the decisions are taken simultaneously ☐ 3
- prices are generally changed after wage adjustments ☐ 4
- wages are generally adjusted after price changes ☐ 5
- don't know ☐ 6

SECTION 3: INFORMATION ABOUT YOUR FIRM

3.1 How many workers did your firm employ at the end of the reference period?

Total number of workers	.....	3101
permanent full-time workers	.....	3102
permanent part-time workers	.....	3103
temporary workers (including apprentices and students)	.....	3104
other persons working for your firm (agency workers, consultants, etc.)	.....	3105

3.2 During the reference period, what percentage of your firm's total costs consisted of labour costs (including basic remuneration and wages, bonuses, social contributions, training, taxes on labour and pension fund contributions)?

☐ per cent 3201

3.3 During the reference period, how did your firm's turnover compare to that for the previous year? (Please tick only one answer) 3202

- much lower ☐ 1
- lower ☐ 2
- approximately the same ☐ 3
- higher ☐ 4
- much higher ☐ 5

INFORMATION ON THE PERSON COMPLETING THE QUESTIONNAIRE:

- Name: .....
- Job: .....
- Telephone: .....
- E-mail address (the survey results will be sent to this address):

.....

THANK YOU FOR YOUR ASSISTANCE

RESPONSE RATE PER QUESTION – UNWEIGHTED RESULTS

(percentages of the number of firms asked to answer the question)

	Total	Manufacturing industry	Energy	Construction	Trade	Business services	Financial institutions	From 5 to 19 employees	From 20 to 49 employees	From 50 to 199 employees	200 or more employees
Question 1.1	**100**	100	100	100	100	100	100	100	100	100	100
Question 1.2 part 2, options 1 to 3	**83**	91	73	86	85	80	100	70	92	93	91
Question 1.2 part 2, percentages	**66**	68	63	65	61	72	77	63	69	72	69
Question 1.2 part 3	**99**	98	100	100	99	99	96	98	99	99	99
Question 1.3	**100**	100	100	100	99	100	100	100	100	99	100
Question 1.4	**98**	98	100	97	97	97	96	97	98	99	99
Question 1.5	**26**	41	29	16	10	9	42	10	20	42	66
Question 1.6	**21**	22	55	5	23	22	69	7	17	32	59
Question 1.7	**100**	100	100	100	100	100	100	100	100	100	100
Question 1.8	**100**	100	100	100	100	100	100	100	100	100	100
Question 1.9, options 1 and 2	**53**	58	91	38	49	54	85	44	48	64	80
Question 1.9, numbers	**96**	97	100	98	93	94	100	96	97	95	98
Question 1.10	**82**	87	91	80	74	85	88	76	83	90	88
Question 1.11	**98**	98	100	98	98	99	100	97	99	99	99
Question 1.12	**97**	97	100	97	97	99	100	96	99	98	97
Question 2.1, options 1 and 2	**99**	99	100	99	99	100	100	99	100	99	100
Question 2.1, percentages	**91**	90	100	100	95	85	100	89	94	85	96
Question 2.2, options 1 and 2	**99**	99	100	99	99	100	100	98	100	99	99
Question 2.2, percentages	**100**	100	100	100	100	100	100	100	100	100	100
Question 2.3	**96**	97	100	96	94	97	100	94	98	98	98
Question 2.4	**87**	89	100	79	85	89	92	83	89	88	96
Question 2.5	**95**	96	91	93	96	95	92	93	97	95	94
Question 2.6	**90**	87	100	90	96	92	90	90	90	89	93
Question 2.7	**93**	95	82	94	91	94	96	91	96	94	96
Question 2.8	**90**	89	100	85	93	90	100	93	88	87	91
Question 2.9	**93**	94	91	93	93	96	100	92	96	93	93
Question 2.10	**88**	85	100	85	92	90	91	90	84	88	88
Question 2.11	**98**	97	100	97	98	98	100	98	98	97	96
Question 2.12	**98**	98	100	97	98	98	100	98	99	98	96
Question 2.13	**98**	98	91	96	99	99	100	98	99	97	96
Question 3.1	**100**	100	100	100	100	100	100	100	100	100	100
Question 3.2	**87**	88	91	83	84	91	88	84	91	88	89
Question 3.3	**98**	98	100	97	99	98	100	99	98	97	96

Source: NBB.

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The incomes and financing balance of individuals and companies

A. Bruggeman

Introduction

In Belgium, the share of wages in GDP has declined quite sharply over the past five years, the main counterpart being a growing share for the operating surplus. These developments have attracted close attention of late, with frequent references to a shift in incomes from individuals to firms. Against the current backdrop of rising inflation, such discussions often mention a possible fall in the purchasing power of individuals. However, a downward trend in the wage share does not necessarily imply a fall in the incomes and purchasing power of individuals. It merely reflects a weaker relative rise in wages compared to the total income generated by the economy. In any case, wages are not the only income category for individuals: their income from wealth, such as interest and dividends, must also be taken into account, as must social benefits and taxes.

This article aims to promote the objectivity of this social debate, partly by clarifying exactly what lies behind such concepts as wage share, operating surplus and corporate profit. In addition, the recent decline in the wage share raises a number of questions which this article aims to answer in the light of a historical and international comparison. How is value added divided among the various primary income categories, namely wages, indirect taxes and residual operating surplus? Has the recent contraction of the share of wages in value added reduced the wage share to an exceptionally low level? Was it followed by a redistribution of incomes, e.g. between companies and individuals? Have individuals and companies adjusted their spending in line with their change in income, or are all the changes absorbed by more saving or dissaving?

The distribution and allocation of incomes are analysed on the basis of the national accounts data, which offer a systematic description of the various phases in the economic process: production, income formation, income distribution and income allocation. The official NAI data on the sectoral accounts are available only for the period 1995-2006; for 2007, the analysis is based on the spring projections which the Bank produced recently as part of the common, biannual exercise conducted by the Eurosystem central banks[1].

This article is structured as follows. Section 1 concerns the formation of incomes as a direct result of the production process, with a detailed examination of movements in the wage share, i.e. the share of value added which is paid out in the form of wages. Then follows an analysis of the redistribution of income between sectors and the purposes for which the economic agents use their income. Section 2 focuses this analysis on individuals, examining in turn their disposable income, their savings ratio and their financing balance. Section 3 contains a similar analysis for companies, focusing mainly on their gross operating surplus and their financing balance. Finally, the main findings of this study are summarised in the conclusion.

(1) For more information on the Bank's spring projections and the underlying assumptions, see NBB (2008), "Economic projections for Belgium – Spring 2008", Economic Review, June, 7-28. The NAI will not publish the official data for 2007 until the end of September 2008.

1. Formation of incomes as a direct result of the production process

This first section describes how gross domestic product, i.e. total value added, is generated and how that value added is distributed between the production factors (labour and capital) and general government (via net indirect taxes, i.e. after deduction of subsidies). It analyses the income flows from the point of view of the sector generating the output.

Since it is not possible to consider all economic agents individually, they are grouped into "institutional sectors" in the national accounts, on the basis of their principal activity. For the analysis in this article, some of these sectors are aggregated, leaving three main domestic sectors, namely companies, individuals and general government. The companies sector comprises both financial and non-financial corporations. The individuals sector covers not only households, including self-employed workers, but also non-profit institutions serving households[1]. Companies and individuals together form the private sector, i.e. the total economy excluding general government.

1.1 The creation of value added

In order to make a product, a producer uses not only the production factors labour and capital, but also commodities, intermediate products and services supplied by other producers. To avoid double counting, the value added of an individual producer is defined as the value which he adds to the commodities, intermediate products and services of other producers which he uses, with the aid of his own workers and equipment. The value added can therefore be calculated as the difference between the sale value of the output and the amounts paid to other producers for the supply of commodities, intermediate products and services, known as intermediate consumption[2].

Since the principal activity of companies consists in producing market goods and services, it is not surprising that they create more value added than individuals and general government. The relative share of companies in total value added has risen steadily over the past ten years. In 2006, companies generated total gross value added of 190.6 billion euro, representing 60.2 p.c. of GDP at current prices, compared to 57.9 p.c. in 1996. While the value added of companies showed an annual average increase of 4.5 p.c. between 1996 and 2006, GDP increased by an average of 4.1 p.c. per annum at current prices.

This weaker GDP growth was due mainly to the fact that the value added created by individuals grew less rapidly during that period. Although this reduced the share of individuals from 17.8 p.c. of GDP in 1996 to 15.4 p.c. in 2006, the value added created by individuals still represented 48.7 billion euro in 2006. That value added originates mainly from the activity of self-employed workers (totalling 23.3 billion euro) and the production of housing services, whether or not for own use (totalling 22.2 billion euro). It is mainly the value added of self-employed workers that has grown more slowly in the past ten years, at an annual average of 1.9 p.c. compared to 3.1 p.c. for the production of housing services. This is due largely to a decline in the number of self-employed workers, which dropped from a total of around 711,000 in 1996 to 679,000 in 2003, before climbing back to 695,000 in 2006.

Of these three main domestic sectors, it is general government that generates the lowest value added. In 2006, the value added of the public sector came to 42.6 billion euro or 13.5 p.c. of GDP. In the past ten years, it has fluctuated between 13 and 14 p.c. of GDP without displaying any clear trend.

1.2 Incomes arising from value added

Producers use the value added created to pay their labour costs and net indirect taxes, i.e. after deduction of subsidies. The national accounts define the remainder as the surplus (or deficit) resulting from production activity, known as the sector's gross operating surplus: this can be viewed as remuneration for the capital used. For self-employed workers, who belong to the individuals sector, the remainder also implicitly contains the labour income for work carried out by the owners or by members of their family. Since that income cannot be distinguished from the operating profit made by them as entrepreneurs, the remainder is referred to as mixed income.

In 2006, about half of the gross value added of the Belgian economy as a whole was used to pay for the production factor labour. The other half was divided between net indirect taxes (11.8 p.c.) and the gross operating

(1) Non-profit institutions serving households include unions, professional associations, political parties, sporting associations and charitable institutions financed by voluntary contributions from other institutional sectors.

(2) However, there are two exceptions to this general rule, namely housing services offered by individuals and non-market services offered by general government. The gross value added which individuals create by producing housing services is calculated as the difference between the rents received (in the case of owner-occupied housing, these are imputed rents) and housing-related expenses which are generally borne by the owners (such as the cost of a plumber or electrician). The gross value added generated by general government via non-market services is calculated as the sum of labour costs and depreciation. Such services – law and order, education and infrastructure – are usually provided free of charge or at far less than cost price, so that the application of the general rule would lead to a serious underestimate of the value added of the general government sector.

surplus plus mixed income (38.2 p.c.). However, there are considerable variations between the three main domestic sectors.

The remuneration of labour as a production factor forms a very large part of the gross value added of the general government sector, at 88 p.c. Moreover, that proportion has risen steadily since the 1995 figure of 86.1 p.c. The other 12 p.c. represents the gross operating surplus, which consists mainly of depreciation. In 2006, companies paid 60.6 p.c. of the value added which they generated in the form of wages, against an average of 64.3 p.c. in the 1995-2002 period. The main counterpart of the recent contraction in the wage share in the value added of companies lies in the share of the gross operating surplus, which came to 39.4 p.c. of value added in 2006, against an average of 35.1 p.c. between 1995 and 2002. Finally, individuals used only 10.6 p.c. of the value added which they created to pay for the production factor labour (for domestic staff and for employees of self-employed workers). The major part – namely 83.9 p.c. – of the value added of individuals corresponds to their gross operating surplus and mixed income.

1.3 The wage share

The wage share reflects the way in which incomes resulting directly from the production process are divided between the production factors. The economic debate, particularly that between the social partners, therefore pays close attention to this concept, especially if the wage share is changing significantly, as in the last few years.

1.3.1 Various possible definitions

The *wage share in the total economy* is often defined as the ratio between the wages paid by the three main domestic sectors combined and GDP. According to that definition, during the period 1995-2000 the wage share hovered around 51 p.c. of GDP, then increased to a peak of 52.4 p.c. of GDP in 2002, before subsiding to an average of 50.2 p.c. between 2005 and 2007.

The advantage of this concept is that it is very easy to calculate with a minimum of data, but it is also subject to various limitations. For instance, it is better to disregard net indirect taxes if the aim is to focus on the distribution of wealth between the production factors labour and capital. That is the only way of ensuring that the sum of the wage share and the share of the operating surplus is always equal to 1. If net indirect taxes are disregarded and the wage share is therefore *expressed as a percentage of value added at factor cost*, then on average it exceeds the wage share as a percentage of GDP by 6.8 percentage points. However, given that the net indirect taxes keep closely in step with value added, this refinement has only a minor impact on the movement in the wage share, so that it virtually parallels the wage share in GDP. In the past three years, the wage share in the total economy averaged 56.8 p.c. of value added at factor cost.

In addition, the simple definitions of the wage share make asymmetric use of the data on self-employed workers. The value added which they generate is included in GDP and in value added, but their labour income does not form part of the labour costs. This means that the

TABLE 1 BREAKDOWN OF GROSS VALUE ADDED BY SECTOR IN 2006

	Gross value added / GDP	Labour costs (1)		Indirect taxes after deduction of subsidies		Gross operating surplus (2)	
	billions of euro	billions of euro	percentages of value added	billions of euro	percentages of value added	billions of euro	percentages of value added
Companies	190.6	115.5	60.6	0.1	0.0	75.0	39.4
Individuals	48.7	5.2	10.6	2.7	5.5	40.9	83.9
General government	42.6	37.5	88.0			5.1	12.0
Not broken down (3)	34.7			34.7			
Total economy	**316.6**	**158.2**	**50.0**	**37.5**	**11.8**	**121.0**	**38.2**

Source : NAI.

(1) In the national accounts, labour costs include both gross wages and employers' social security contributions.

(2) For individuals and the total economy, this concerns both the gross operating surplus and gross mixed income.

(3) Unlike other taxes on production – such as taxes on pollution or taxes on the use of fixed assets for production purposes – taxes on products cannot be broken down among the various institutional sectors. This last category includes VAT, taxes on imports and excise duties.

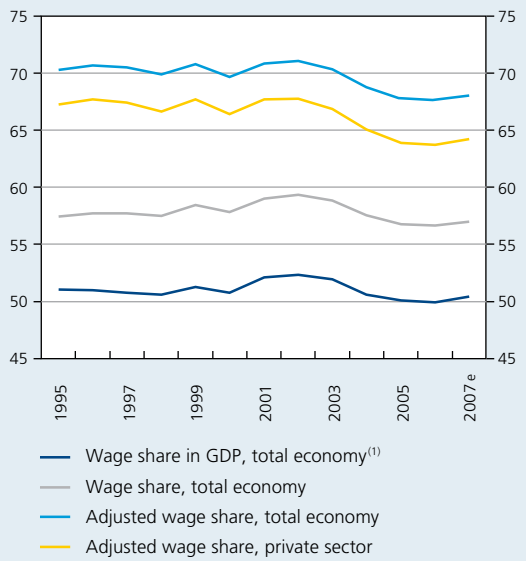
above definitions underestimate the true share of labour income in total value added. Since the labour income of self-employed workers cannot be measured directly, an allocation formula has to be used to break down the gross mixed income of self-employed workers into a notional imputed labour income and the residual gross operating surplus. For this purpose, self-employed workers are often assigned an imputed labour income equal to the average labour costs per employee. In the period 2005-2007, the thus *adjusted wage share in the total economy* averaged 67.8 p.c. of value added. Since the relative share of self-employed workers in total employment in Belgium displayed a downward trend in the period 1997-2003, the adjusted wage share recorded a somewhat larger decline than the non-adjusted wage share. In 2002, the adjusted wage share in the total economy still came to 71.1 p.c. of value added. In international comparisons it is advisable to use such an adjusted wage share; this is because the degree to which the non-adjusted wage share underestimates the true share of labour income varies from one country to another, owing to differences in the percentage of self-employed labour in total employment.

Finally, the analysis of the wage share is often confined to the private sector. For instance, the Central Economic Council calculates an *adjusted wage share in the private sector* in its technical report on the maximum available margins for increases in labour costs. Such an indicator can be used as a synthetic yardstick for assessing the recent movement in labour costs. It can also be used, for example, to examine the impact of globalisation on the wage share. Since the share of labour costs in value added is much greater in the general government sector than in the private sector, exclusion of the former results in a wage share which is 3.4 percentage points lower, on average. In the past three years, the adjusted wage share in the private sector has averaged 64 p.c. of value added at factor cost.

The various definitions of the wage share therefore lead to substantial differences in terms of level. Of all the definitions used here, the simple concept of the wage share in the total economy (as a percentage of GDP) results in the lowest level, while the adjusted wage share in the total economy (as a percentage of value added) gives the highest level. In general, however, all the definitions indicate a similar picture: a fairly stable pattern in the second half of the 1990s followed by a moderate rise and then a slightly steeper fall during the period 2003-2005; since then there has been little change in the wage share.

CHART 1 VARIOUS DEFINITIONS OF THE WAGE SHARE

(percentages of value added at factor cost, unless otherwise stated)



Sources: NAI, NBB.
(1) Percentage of GDP.

1.3.2 Possible reasons for the recent movements in the wage share

Up to now, the wage share has been considered only as the ratio between labour income and value added. However, the wage share can also be broken down into a number of components which provide more information on what is happening. Thus, a first step is to redefine the wage share as the ratio between real wages and value added in real terms. Changes in the wage share can therefore be seen as changes in real unit labour costs. This reveals that it is not only wages and economic activity that determine the movement in the wage share, but also inflation measured by the value added deflator. Finally, the impact of the number of persons in work can be isolated by regarding the wage share as the ratio between real labour costs per employee and (apparent) labour productivity.

The adjusted wage share can therefore be written as:

$$\frac{C\,(T/E)}{YN} = \frac{(C/P)\,(T/E)}{YR} = \frac{C_E\ /\ P}{YR\,/\,T}$$

where C represents labour costs; E, is the number of employees; T, is the total number of persons in work including self-employed workers; YN, is value added at current prices; YR, is value added in real terms; P is the value added deflator and C_E, is labour costs per employee.

Consequently, real unit labour costs – and hence the adjusted wage share – will decline if real labour costs per employee rise less quickly than labour productivity. The movement in the wage share is therefore determined by numerous factors, many of which are sensitive to the business cycle. The recent movements in the wage share should therefore be analysed in the context of the global deterioration in the economic situation in 2001 – caused by the bursting of the stock market bubble and the subsequent cuts in business investment – and the economic recovery which started in 2004. In order to clarify the impact of the business cycle, this section will consider only developments in the private sector, as they are more sensitive to the cycle. However, the conclusions are the same if the total economy is considered.

Since (apparent) labour productivity is calculated here as the ratio between value added and the number of persons in work, that figure shows a strong positive correlation with the business cycle. Generally speaking, several quarters elapse before employment responds to cyclical fluctuations, as it takes time and money to adjust production capacity in line with changing prospects. The slackening pace of growth in 2001 therefore caused (apparent) labour productivity to decline by 0.1 p.c., compared to an average annual rise of 1.4 p.c. over the period 1996-2007 as a whole, or 1.5 p.c. during the period 1996-2000. This was a significant factor behind the steep increase in the adjusted wage share in 2001. During the ensuing years, labour productivity again grew relatively strongly as a result of drastic corporate restructurings which curbed the expansion of employment, contributing to a reduction in the adjusted wage share. Combined with the incipient economic recovery in 2004, this boosted labour productivity by 2.2 p.c. in that year.

The major difference between the period 1996-2002 – which ended with a slight increase in the adjusted wage share – and the more recent period 2003-2005 concerns the movements in real labour costs per employee. Here, too, the business cycle played a very important role. In response to the deteriorating economic situation in 2001, companies tried to keep their labour costs down. In 2001 and 2002, that was achieved mainly by adjusting the number of hours worked per employee in line with the slowdown in production, via the system of temporary layoffs and by cutting the amount of overtime. This effect was in addition to the structural trend towards shorter working hours as a result of the expansion of part-time work. However, the impact on labour costs per employee was limited during those years because hourly labour costs continued rising by more than 4 p.c. per annum. In Belgium, the movement in private sector labour costs is influenced mainly by collectively agreed wages, via real agreed adjustments or indexations. Under the law on the safeguarding of competitiveness, the increase in nominal hourly labour costs is largely determined by the indicative wage norm, defined by the social partners in the biennial negotiation of a central agreement on the basis of the expected movement in labour costs in the three main trading partners – Germany, France and the Netherlands – and any adjustments for slippages in the preceding two years.

TABLE 2 BREAKDOWN OF THE ADJUSTED WAGE SHARE IN THE PRIVATE SECTOR

(percentage changes, unless otherwise stated)

	Average 1996-2000	2001	2002	2003	2004	2005	2006	2007 e
1. Number of hours worked per employee	0.1	–0.6	–0.8	–0.2	–0.4	–0.2	0.2	0.2
2. Hourly labour costs	2.1	4.3	4.2	1.6	2.5	1.8	3.0	3.7
3. Labour costs per employee (1 × 2)	2.2	3.7	3.5	1.4	2.1	1.6	3.2	4.0
4. Value added deflator	1.0	1.8	1.4	1.4	2.6	2.3	1.9	2.0
5. Real labour costs per employee (3:4)	1.2	1.9	2.0	0.0	–0.5	–0.7	1.3	1.9
6. Labour productivity	1.5	–0.1	1.9	1.4	2.2	1.1	1.6	1.1
7. Real unit labour costs (5:6)	–0.3	2.0	0.1	–1.4	–2.6	–1.8	–0.2	0.8
p.m. Adjusted wage share (percentages of value added)	*67.2*	*67.7*	*67.8*	*66.8*	*65.1*	*63.9*	*63.7*	*64.2*

Sources: NAI, NBB.

In 2001 and 2002, companies were therefore bound by the central agreement concluded at the end of 2000 and based on a more favourable economic situation expected at that time. Altogether, real labour costs per employee increased by roughly 2 p.c. per annum in 2001 and 2002, exceeding the change in labour productivity and therefore expanding the adjusted wage share.

Although the number of hours worked per employee continued to fall in subsequent years, during the period 2003-2005 it was mainly the slower rise in hourly labour costs which curbed the growth of labour costs per employee. This was due in particular to the lower indicative norms for the increase in nominal hourly labour costs during the years 2003-2004 and 2005-2006, which reflected the expected wage moderation in the three main trading partners. In addition, during 2003-2005 the wage drift was virtually non-existent, presumably because of the gradually deteriorating labour market situation. Finally, the increase in hourly labour costs was also contained by the reduction in employers' social security contributions. Overall, the rise in labour costs per employee in the private sector averaged only 1.7 p.c. per annum in 2003-2005. Moreover, in 2004 and 2005 labour costs per employee increased by less than inflation, measured by the value added deflator, so that real labour costs per employee declined by 0.5 and 0.7 p.c. respectively, after remaining virtually unchanged in 2003. Combined with an increase in (apparent) labour productivity averaging 1.6 p.c. per annum, the fall in real labour costs per employee, averaging 0.4 p.c. per annum, led to a significant decline in the adjusted wage share in the period 2003-2005.

It was therefore not until 2006 that the decline in the wage share was halted. In the past two years, real labour costs per employee have climbed back up by an average of 1.6 p.c. per annum, in the context of favourable economic conditions and rising tensions on the labour market. Not only did the number of hours worked per employee start rising, there was also a substantial increase in the wage drift. As a result, the rate of growth in real labour costs per employee was realigned with the increase in labour productivity, so that the reduction in the adjusted wage share gave way to stabilisation. In 2007, the adjusted wage share actually increased again as a result of the sharp rise in hourly labour costs.

1.3.3 Has the wage share dropped to an exceptionally low level in recent years?

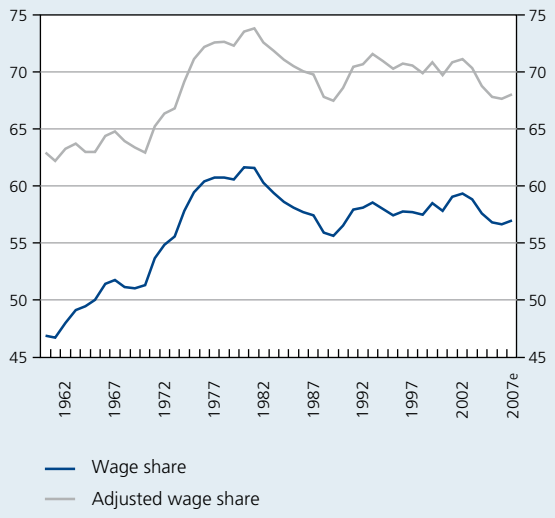
Now that the wage share has reached its lowest level for the past ten years, the question is whether that share is exceptionally low in historical terms. Considered over a longer period, the movement in the adjusted wage share in Belgium can be divided into three phases[1]. During the 1960s, the adjusted wage share in the total economy fluctuated around 63.5 p.c. of value added. During the 1970s, however, it increased steadily, peaking at almost 74 p.c. in 1981. It then gradually subsided to around 68 p.c. of value added.

The very marked rise in the adjusted wage share during the 1970s was attributable to a gradual slackening of labour productivity growth which was not accompanied by a slower rise in real labour costs per employee. On the one hand, the industrial countries recorded a structural slowdown in their productivity growth, a trend which was further reinforced by the oil crisis which drove up the costs of companies and exerted further downward pressure on their value added and labour productivity. Also, automatic wage indexation in Belgium meant that the oil price rises were passed on in higher wage increases which in turn fuelled inflation, triggering a "wage-price spiral". This derailment of labour costs not only dented corporate profitability in Belgium: combined with the weakening productivity growth, it also led to a steep rise in real unit labour costs and hence in the wage share. Since labour costs in Belgium rose faster than those in the main trading

(1) Figures cannot be calculated for the private sector because there have been no harmonised data per sector since 1960.

CHART 2 HISTORICAL VIEW OF THE WAGE SHARE IN THE TOTAL ECONOMY

(percentages of value added at factor cost)



Sources: EC, NBB.

partners, these developments also brought a substantial loss of competitiveness for Belgian companies.

In the early 1980s, several measures were taken to restore that competitiveness. For instance, in February 1982 the Belgian franc was devalued by 8.5 p.c. To temper the influence of that devaluation on domestic prices and costs, simultaneous measures were taken to control labour costs. To that end, the link between the increase in hourly labour costs and inflation measured by the consumer price index was temporarily abolished. In 1993, it was decided to make that link structurally less rigid, by using the "health index" as the benchmark for indexation. These measures produced the desired effect. Thanks to cost control, the expanding sales opportunities led to an increase in corporate profitability, so that value added rose faster and the wage share began gradually falling.

The recent decline in the adjusted wage share can therefore be seen as part of a downward trend since the peak of the early 1980s. The steepest fall occurred in 1982-1989, followed by a partial recovery which has now been totally dissipated. The level of the past few years is therefore comparable with that of the late 1980s. We need to go back to the early 1970s to find an adjusted wage share which is lower than the figures recorded in recent years. Although the very substantial increase in the adjusted wage share amounting to 10.6 p.c. of value added during the 1970s has not yet been entirely neutralised, rather more than half of it has since been offset by a gradual decline amounting to 5.5 p.c. of value added in the past three decades.

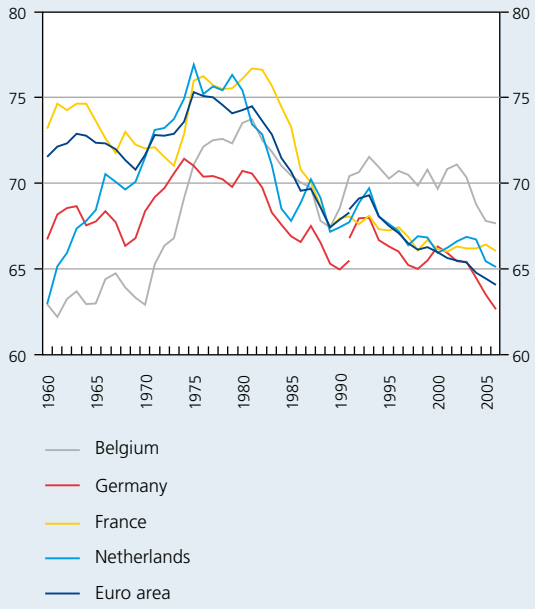
Another way of assessing the recent fall in the wage share in Belgium is to compare it with the situation prevailing in other euro area countries. When making an international comparison, it is desirable to focus mainly on the movement in the wage share rather than the level, because the level varies widely from one country to another, even if the definition is confined to the private sector and incorporates an adjustment for the labour income of self-employed workers. However, those differences of level are difficult to interpret because they are due to such factors as the structure of the economy (e.g. the relative share of the various branches of activity, or the weight of taxation and social contributions on labour income) and methodological differences in the compilation of the national accounts (such as the estimate for undeclared employment).

Compared to what is seen in most other euro area countries, the adjusted wage share has contracted relatively sharply in Belgium of late, declining from 71.1 p.c. of value added in 2002 to 67.6 p.c. in 2006. That represents a percentage fall of 4.8 p.c. compared to a fall of only 2.2 p.c. in the euro area as a whole. However, in Germany the adjusted wage share also declined by 4.3 p.c., as a result of strict wage moderation. Conversely, in France the adjusted wage share recorded a much smaller fall. Possible reasons for that are the significant rise in the minimum wage and the steady extension of the 35-hour week. In so far as the resulting slower growth of labour productivity was not totally offset by a slower rise in real labour costs per employee, this resulted in a larger wage share.

However, if the recent decline in the adjusted wage share is viewed as part of the downward trend which began in the early 1980s, then the relationships are reversed. In comparison with most other euro area countries, the downward trend in the adjusted wage share in the total Belgian economy since 1980 has been less pronounced so far, at 8 p.c. For example, the adjusted wage share in the euro area as a whole dropped by 13.8 p.c. In Belgium's three main neighbouring countries – Germany, France and the Netherlands – the decline was 11.5 p.c., 13.2 p.c. and 13.7 p.c. respectively. Moreover, since the time series for Germany before 1991 relate only to West Germany, the

CHART 3 INTERNATIONAL COMPARISON OF THE ADJUSTED WAGE SHARE IN THE TOTAL ECONOMY

(percentages of value added at factor cost)



Source : EC.

contraction in the wage share in Germany and in the euro area as a whole is probably somewhat underestimated.

In addition, the slower downward trend in the adjusted wage share in Belgium followed a much stronger rise during the 1970s. Consequently, the adjusted wage share in the total Belgian economy is currently still 7.5 p.c. larger than in 1970, whereas in the three main neighbouring countries together and in the euro area the 2006 figures are respectively 8.3 and 10.6 p.c. lower than in 1970.

Overall, the wage share in Belgium thus exhibited a similar picture to that seen in the euro area : stabilisation in the 1960s, then an increase in the 1970s followed by a gradual decline. The synchronised nature of these trends in the wage share in most euro area countries and elsewhere suggests that the pattern was dictated mainly by common factors. In the literature, the downward trend in the wage share is often linked to structural developments such as globalisation, technological progress and the growing importance of the tertiary sector of the economy [(1)].

One of the effects of the globalisation of the economy is a marked increase in the world labour supply. Depending on the source, the integration of China, India and the former Eastern bloc countries into the global economy has doubled or even quadrupled the world labour supply compared to 1980. The impact of this additional labour is reflected mainly in a strong rise in the industrial countries' imports of labour-intensive goods and services from those emerging economies. Since the industrial countries are specialising in more capital-intensive goods and services, there will be a decline in the share of the remuneration of the relatively scarce production factor labour in total value added. At the same time, however, globalisation is stimulating productivity and output via further specialisation, so that the total wage bill is also rising. The net effect of globalisation on the total wage bill in the industrial countries therefore need not be negative.

The impact of the growing world labour supply is also felt via increasing immigration and the offshoring of certain activities, which is weakening the bargaining position of employees in the industrial countries. This offshoring was stimulated in particular by the gradual liberalisation of trade and capital movements and by technological progress, which has made it possible to divide up successive phases in the production process and conduct them at different locations. This has made the choice of production locations much more sensitive to relative movements in labour costs in the various countries.

In addition, technological progress has also increased the capital intensity of the production process. In that context, the link between the new technologies and the workers' skills is very important. While information and communication technology (ICT) and highly-skilled workers are essentially complementary, ICT tends to be in competition with low-skilled labour. ICT has therefore tended to reduce demand for low-skilled labour and increase the productivity of highly-skilled labour. In both cases, this leads to a larger share for the remuneration of the production factor capital and a smaller wage share.

Finally, the expansion of the tertiary sector of the economy has also tended to reduce the wage share in Europe. Since the wage share is lower in the services sector than in industry, its growing importance in the value added of the total economy has caused a reduction in the average wage share. According to an EC study [(2)], that effect was particularly significant in Belgium in 1986-1995, whereas since 1995 it has hardly been a factor.

2. Disposable income, savings ratio and financing balance of individuals

Broadly speaking, the primary incomes described above accrue in the first instance to individuals (in the form of wages), to general government (in the form of net indirect taxes) and to companies (what is left after paying labour costs and net indirect taxes). These primary incomes are then partly redistributed between the institutional sectors. Thus, individuals and companies pay interest on their outstanding loans, and receive interest on their savings or their bond portfolio. As shareholders, individuals also receive dividends from companies. In addition, both individuals and companies pay taxes and social contributions to general government, which uses part of these resources to finance social benefits to individuals. Finally, the three domestic sectors may also receive incomes from abroad or pay incomes to the rest of the world. The primary incomes described above, arising from domestic output, are therefore not the only factors which determine the disposable income of individuals and companies.

This section first examines the movement in the total disposable income of individuals, a concept which covers not only the wage bill [(3)] but also the gross operating surplus of individuals (including gross mixed income), net interest received, dividends and social benefits received, and

(1) Cf. for example EC (2007), *The labour income share in the European Union*, Employment in Europe 2007, 237-272, and IMF (2007), *The globalisation of labor*, World Economic Outlook, April, 161-192.

(2) EC (2007), *Labour market and wage developments in 2006, with special focus on relative unit labour cost developments in the euro area*, European Economy, N° 4.

(3) The concept of the wage bill as a percentage of GDP is slightly different from the wage share concept used above, because the standpoint here is that of the recipient sector. This means that account is also taken of the wages of Belgian employees paid by the rest of the world, whereas wages paid in Belgium to foreign workers are disregarded.

also takes account of the taxes and social contributions paid and the balance of other current transfers. The aim is to examine whether the weaker growth in the wage bill during the period 2003-2005 was offset or reinforced by the movement in the other components of disposable income. The next step is to analyse to what degree changes in individuals' disposable income have had repercussions on their final consumption expenditure, or conversely, whether they have been prompted to modify their savings ratio. Finally, if the investment of individuals is also taken into account, the scale of the changes in their net financial wealth becomes clear. It is thus possible to assess the extent to which the reduction in the wage share has led to a fall in the financing balance of individuals.

2.1 Disposable income of individuals

Since the mid 1990s, the disposable income of individuals has always exceeded the wage bill. However, this gap between gross disposable income and the wage bill has declined steadily, dropping from 14.8 p.c. of GDP in 1995 to 7.9 p.c. in 2005, after which it expanded slightly again. While the wage bill as a percentage of GDP has changed little since the mid 1990s, there has been a downward trend in the total gross disposable income of individuals as a percentage of GDP. This means that, taken together, the other components of the disposable income of individuals have grown more slowly than the wage bill over that period.

Taking the period 1995-2007 as a whole, the gross disposable income of individuals declined almost constantly in relation to GDP, falling by a total of 7.3 p.c. of GDP. Almost the whole of that fall is attributable to the movement in net property income, more specifically interest income. As a result of the downward trend in interest rates this component of disposable income dropped by 6.3 p.c. of GDP between 1995 and 2007. Conversely, the decline in the wage bill, down by only 0.7 p.c. of GDP over that long period, was certainly not the main determinant of the movement in the disposable income of individuals.

However, when expressed as a percentage of GDP, the disposable income of individuals slowed during the period 2003-2005 at twice the rate recorded in preceding years. That sharper decline was due mainly to the movement in the wage bill, which declined by an annual average of 0.7 p.c. of GDP during that period, whereas between 1996 and 2002 it had increased by an average of 0.2 p.c. of GDP per annum. However, the impact on disposable income was partly offset by fact that the weaker growth of the wage bill also slowed the amount of taxes and social contributions paid. During the period 2003-2005 the latter actually declined by 0.5 p.c. of GDP per annum; the tax reform introduced in 2001 was also a factor here. In the context of a further, similar decline in interest income as a percentage of GDP, the slower growth of the wage bill therefore caused a substantial decline in the disposable income of individuals, averaging 1.2 p.c. of GDP per annum, compared to an average fall of 0.6 p.c. of GDP over the period 1995-2007 as a whole.

The downward trend in the disposable income of individuals as a percentage of GDP does not imply a continuous reduction of the income itself. On the contrary, there was an increase averaging 3 p.c. per annum between 1995 and 2007. In real terms, after application of the private final consumption expenditure deflator, the gross

TABLE 3 COMPONENTS OF THE DISPOSABLE INCOME OF INDIVIDUALS
(percentages of GDP)

	1995	2001	2002	2003	2004	2005	2006	2007 e
Wage bill	52.3	53.3	53.6	53.2	51.9	51.4	51.2	51.6
Gross operating surplus (1)	15.0	14.5	13.8	13.7	13.2	13.1	12.9	12.8
Net property income	13.5	11.5	10.4	9.2	8.7	8.4	8.1	8.6
Social benefits	19.0	18.4	18.8	19.1	18.7	18.5	18.3	18.0
Taxes and social contributions (–)	33.6	34.0	34.2	33.9	33.1	32.7	31.7	31.9
Other current transfers	0.8	0.6	0.6	0.6	0.7	0.7	0.8	0.7
Gross disposable income	**67.1**	**64.2**	**63.0**	**62.0**	**60.1**	**59.3**	**59.4**	**59.8**

Sources: NAI, NBB.
(1) Including gross mixed income.

disposable income of individuals increased by an average of 1.1 p.c. per annum. However, that average rise conceals some fluctuations. The steady rise in the volume of the gross disposable income of individuals in the period 1997-2001 was followed by a slight fall in the ensuing four years; in 2006 and 2007, there was a return to strong growth.

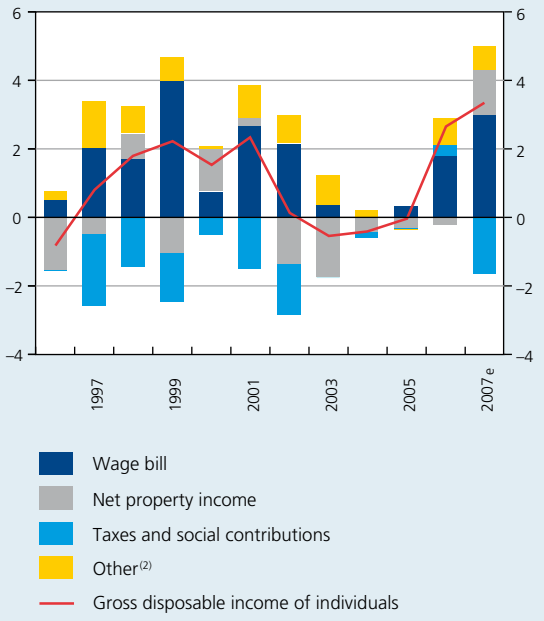
During the period 1998-2001, the disposable income of individuals increased by an average of 2 p.c. per annum in real terms, mainly as a result of the substantial growth of the wage bill during that period, although net property income and the gross operating surplus (including gross mixed income) both also contributed around 0.3 percentage point per annum to the growth of disposable income.

In contrast, in 2002-2005 disposable income recorded (almost) negative growth in real terms. This was due partly to the deteriorating economic situation during the period 2002-2003, which prompted companies to curb their labour costs, as already discussed in section 1. During that period, the contribution of the wage bill was therefore unusually small. In addition, net property income made a considerable negative contribution to disposable income growth in real terms, particularly in 2002 and 2003. This was due mainly to the decline in interest income, but property income was also depressed by the negative contribution from dividends received during that period. However, it is worth noting that in the period 1998-2001 dividend income had risen very strongly, so that it had reached an unusually high level in 2001, namely 4 p.c. of GDP, compared to an average of 3 p.c. of GDP in the period 1995-2000. Despite the small positive contribution from taxes in 2003 – due to the abolition of the complementary crisis contribution and the implementation of the personal income tax reform – the gross disposable income of individuals declined by 0.5 p.c. in real terms that year. In 2004 and 2005, there was again negative growth of disposable income in real terms, as the very meagre increase in the wage bill was too small to offset the negative contribution from net property income.

It was 2006 before disposable income really recovered. Not only did that year bring an increase in the wage bill of 2.1 p.c in real terms, the implementation of the final part of the tax reform initiated in 2001 also contributed to a 2.7 p.c. increase in gross disposable income in 2006. In 2007, taxes and social contributions again depressed disposable income, as in most other years, yet there was still 3.3 p.c. growth of disposable income, bolstered by the strong increase in the wage bill and by net property income which had a positive impact on the disposable income of individuals for the first time since 2001.

CHART 4 MAIN COMPONENTS OF THE DISPOSABLE INCOME OF INDIVIDUALS, IN REAL TERMS [1]

(contribution to the growth of the disposable income, percentage points)



Sources: NAI, NBB.

(1) Data deflated by the private final consumption expenditure deflator.

(2) The gross operating surplus, gross mixed income and the balance of current transfers excluding taxes and social contributions.

2.2 How do individuals use their disposable income?

Individuals use the bulk of their disposable income to finance their final consumption expenditure. The remainder is classified in the national accounts under gross savings which, when expressed in relation to the disposable income of individuals, constitute the savings ratio.

Like gross disposable income as a percentage of GDP, the final consumption expenditure of individuals also displayed a downward trend as a percentage of GDP. However, the decline was far less pronounced than the fall in disposable income. The reduction in the gross disposable income of individuals as a percentage of GDP was therefore largely reflected in a downward trend in the savings ratio, which declined from 20 p.c. of disposable income in 1995 to a low point of 12.2 p.c. in 2005.

The decline in interest income as a percentage of the disposable income of individuals was a contributory factor in this downward trend in the savings ratio. Since interest income is perhaps less likely than labour income to be spent on consumption, such a shift in the composition of the disposable income of individuals drives up the consumption ratio and therefore reduces the savings ratio. However, in general such a reduction will only persist if individuals consider that their income prospects will remain robust, both during their working life and in retirement. In that respect, the consolidation of public finances which has taken place provides significant support.

In the period 2003-2005, the savings ratio declined faster than in the preceding years. The reason is that individuals tend to smooth their final consumption expenditure to some extent in the event of major fluctuations in their disposable income. The relatively steep fall in that income therefore did not produce a corresponding fall in final consumption expenditure – both considered in relation to GDP – but led to a sharper reduction in the savings ratio.

In the past two years, however, the savings ratio has risen again. Not only has the gross disposable income of individuals grown more strongly, but final consumption expenditure has also continued falling slowly as a percentage of GDP. The assertion that individuals try to maintain the level of their final consumption expenditure in the event of a dip in their disposable income is therefore equally valid for periods in which that income increases strongly. Thus, the rise in disposable income in 2007, as a percentage of GDP, did not trigger higher final consumption expenditure, but was fully reflected in higher savings.

As well as consuming, individuals also invest, principally in the form of housing construction and renovation. The savings ratio is therefore much higher than the eventual financing balance of individuals. In contrast to their savings, which displayed a downward trend as a percentage of GDP, the investment of individuals as a percentage of GDP did not exhibit any clear trend in the 1995-2003 period. During that period, the fall in the savings ratio was therefore almost entirely reflected in a decline in the financing balance of individuals as a percentage of GDP. Since 2004, however, individuals have considerably increased their expenditure on housing construction and renovation, including in relation to GDP. This strong propensity to invest was underpinned mainly by the very low mortgage interest rates, while the boom in house prices on the secondary market also propelled the growth of investment in housing. This was reflected in a strong decline in the financing balance of individuals, down to less than 1 p.c. of GDP since 2005, compared to 8.1 p.c. in 1995.

2.3 The financing balance of individuals in an international perspective

Whereas in 1995 the financing balance of Belgian individuals had exceeded the unweighted average for the three main neighbouring countries by 4.3 p.c. of GDP, in 2006 only the Netherlands still had a lower financing balance. The downward trend in the financing balance of Belgian individuals (totalling 7.6 p.c. of GDP since 1995) is in stark contrast to the upward trend in the financing balance of German individuals (amounting to 2.9 p.c. of GDP), while

TABLE 4 DISPOSABLE INCOME AND FINANCING BALANCE OF INDIVIDUALS

(percentages of GDP, unless otherwise stated)

	1995	2001	2002	2003	2004	2005	2006	2007 e
1. Gross disposable income[1]	67.7	64.8	63.5	62.6	60.8	59.9	60.0	60.4
2. Final consumption expenditure	54.1	54.2	53.5	53.4	52.7	52.6	52.5	52.4
3. Gross savings (1 – 2)	13.6	10.6	10.0	9.2	8.1	7.3	7.5	8.0
p.m. Savings ratio (percentages of disposable income)	*20.0*	*16.4*	*15.8*	*14.7*	*13.3*	*12.2*	*12.5*	*13.2*
4. Gross investment	5.8	5.2	5.3	5.3	5.7	6.1	6.5	6.8
5. Other uses[2]	–0.4	0.2	0.1	0.3	0.4	0.4	0.5	0.5
6. Financing balance (3 – 4 – 5)	8.1	5.2	4.6	3.6	2.0	0.8	0.5	0.7

Sources: NAI, NBB.

(1) Including the change in the net claims of households on pension funds.

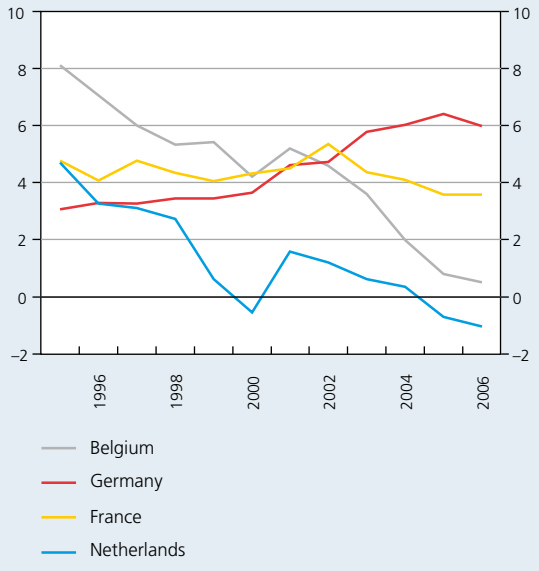
(2) Net capital transfers paid to other sectors and net acquisitions of non-produced non-financial assets such as land and patents.

in the case of French individuals it is only in the last few years that the financing balance has begun to decline as a percentage of GDP. The Netherlands was the only country where the financing balance of individuals recorded a downward trend throughout the period, though the fall was less marked than in Belgium. These divergences largely reflect the pattern of disposable income: while the growth of disposable income in Belgium and the Netherlands did not keep pace overall with GDP growth, the ratio of disposable income to GDP remained practically unchanged in Germany and France.

Differences in spending patterns also played a role. In Belgium, the slower growth of disposable income was largely absorbed by a decline in savings as a percentage of GDP, so that final consumption expenditure was not particularly hard hit, whereas this was less true in the Netherlands. In addition, individuals in both countries stepped up their other expenditure – principally investment spending – to roughly the same degree. The smaller decline in savings as a ratio of GDP in the Netherlands was therefore reflected in a smaller reduction in the financing balance. In 2006, that balance had still been lower than in Belgium, and in 2005 and 2006 it was actually negative, implying that Dutch individuals saw a contraction in their net financial wealth as a percentage of GDP.

CHART 5 INTERNATIONAL COMPARISON OF THE FINANCING BALANCE OF INDIVIDUALS

(percentages of GDP)



Source: EC.

Differences in spending patterns were also the reason for the divergent trend in the financing balance in Germany and France. While disposable income in both countries remained virtually unchanged as a percentage of GDP, German individuals saw an increase in their financing balance, while in France the balance declined. The difference is due to the investment profile. Although German individuals did slightly increase their final consumption expenditure, the downward impact on the financing balance was more than offset by the fact that they invested considerably less in relation to GDP. In Germany, the financing balance therefore grew steadily to around 6 p.c. of GDP. In contrast, in 2006 French individuals invested more as a percentage of GDP than in 1995, reducing their financing balance to around 3.5 p.c. of GDP.

3. The operating surplus, profit and financing balance of companies

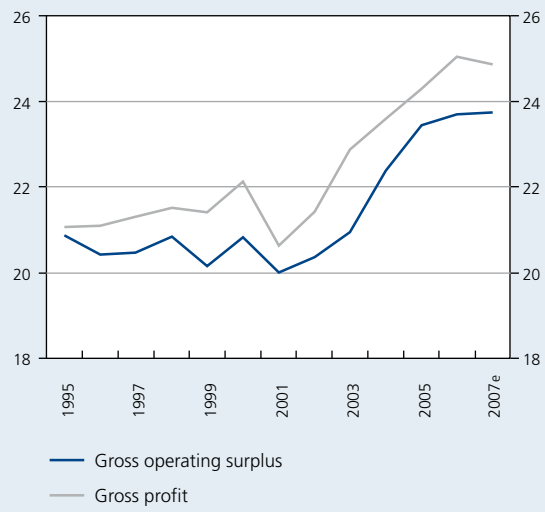
Whereas gross disposable income is a key concept which is often used in the case of individuals, it is normally only the gross operating surplus that is considered in the case of companies. The importance of that concept is due mainly to the fact that other forms of corporate income are much less significant than they are for individuals. For example, companies do not receive any social benefits and their net interest income is modest compared to that of individuals. Nonetheless, in order to take account of other forms of corporate income, this article uses a gross profit measure based on the national accounts data. This measure is calculated as the sum of the gross operating surplus, net property income – but excluding dividends – and the balance of current transfers, excluding the taxes on corporate income and wealth. Examination of the purposes for which the profit according to this concept is used reveals the extent to which the steep rise in the operating surplus of companies has also benefited the other domestic sectors, and particularly individuals.

3.1 The operating surplus and profit of companies

Between 1995 and 2002, the gross operating surplus of companies fluctuated around 20.5 p.c. of GDP. However, in the ensuing three years it increased sharply; since 2005 it has totalled roughly 23.5 p.c. of GDP. On average, the gross profit of companies was roughly 1 p.c. of GDP higher than their gross operating surplus, and followed a fairly similar trend. The main difference lies in the balance of current transfers, excluding taxes on income and wealth, which averaged 0.7 p.c. of GDP. During the 1995-2007 period, the net property income of companies,

CHART 6 GROSS OPERATING SURPLUS AND GROSS PROFIT OF COMPANIES

(percentages of GDP)



Sources: NAI, NBB.

even disregarding the net dividends paid to other sectors, averaged only 0.3 p.c. of GDP.

The gross operating surplus is therefore by far the most important income source for companies. Since 2002 it has risen strongly, especially in 2004 and 2005 with increases of 12.7 and 9.2 p.c. respectively. For a better understanding of the movement in the gross operating surplus of companies it is useful to consider a breakdown between the gross operating margin per unit of sales and the number of units sold[(1)]. This breakdown shows that companies have managed to achieve a substantial rise in their gross operating margin per unit of sales in every year since 2002, in contrast to the situation during the second half of the 1990s, and since 2004 they have also achieved a relatively strong increase in their volume of sales.

Nevertheless, the significant increase in the gross operating surplus followed the mediocre results recorded by companies in 2001, when their gross operating surplus had dropped by 1.2 p.c. In that year, costs of domestic origin – principally labour costs – rose strongly in comparison with the increase in selling prices. The resulting downward pressure on the operating margin was partly offset by the slight improvement in the terms of trade, as

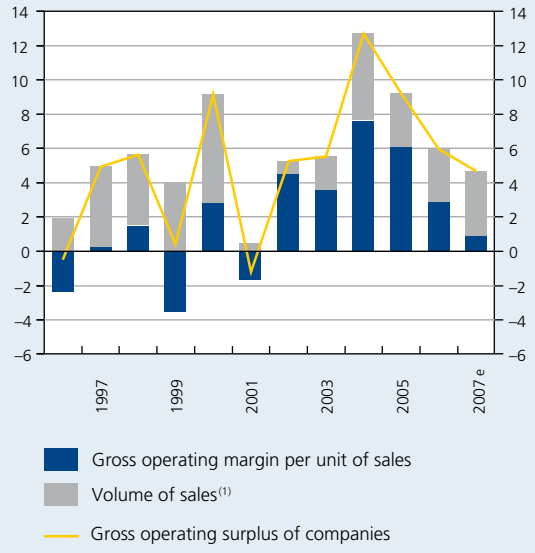
(1) Including the change in stocks.

the rise in prices of imported inputs lagged slightly behind the increase in selling prices on the export markets, thus bolstering corporate margins. Yet this could not prevent the gross operating margin per unit of sales from falling by 1.7 p.c. In addition, growth in the volume of sales was very feeble at 0.5 p.c., compared to an average of 4.2 p.c. in 1996-2000.

Following the sharp economic slowdown in 2001, which severely depressed both selling prices and demand, companies tried to restore their gross operating margin per unit of sales by curbing the rise in labour costs. In 2002 they could only do this by boosting labour productivity, since the increase in hourly labour costs was already stipulated in the central agreement concluded at the end of 2000. The expansion of the operating margin in that year was therefore due primarily to a substantial improvement in the terms of trade, as import prices fell more steeply than selling prices on the export markets. During 2003-2005 companies were able to increase their operating margin further as a result of the weaker rise in costs of domestic origin, including labour costs, and thanks to the relatively strong rise in selling prices on the domestic market. In 2004 and 2005, the impact of the increase in the operating margin was considerably reinforced by

CHART 7 MAIN COMPONENTS OF THE GROSS OPERATING SURPLUS OF COMPANIES

(contribution to the growth of the gross operating surplus, percentage points)



Sources: NAI, NBB.
(1) Including the change in stocks.

the vigorous growth in the volume of sales on both the domestic and the export markets. The strong increase in the operating margin per unit of sales combined with a substantial rise in the volume of sales therefore explains the exceptionally steep increase in the operating surplus in those two years.

In 2006 and 2007, the increase in the operating margin per unit of sales was less pronounced. For one thing, selling prices on the domestic market did not rise as quickly as in the preceding years. Also, costs of domestic origin – and especially labour costs – accelerated again in response to the rising tensions on the labour market. At the same time, however, strengthening demand helped to limit the impact of the stronger rise in labour costs on the operating surplus of companies, since they were thus able to continue expanding their volume of sales fairly substantially.

3.2 How do companies use their profit?

The past five years have seen a surge in corporate gross profit, with an average rise of 7.5 p.c. per annum, mainly as a result of the strong increase in their gross operating surplus. The question is whether this substantial rise has also benefited the other domestic sectors, and more particularly individuals. To answer that question, this article examines the extent to which companies have also stepped up their expenditure or increased their financing balance. If the increase in the gross operating surplus has led to a rise in the amount of taxes paid on income and wealth or an increase in the net dividends paid to other sectors, there is clearly some redistribution of the income flows. If the larger gross operating surplus has led to more investment, that can also be viewed as a form of redistribution between sectors. All other things being equal, higher investment boosts the economy's growth potential, and that in turn leads to a stronger rise in the wage bill and hence the disposable income of individuals.

Whereas, on average over the past three years, companies' gross profit exceeded the 2002 figure by 3.3 p.c. of GDP, their financing balance increased by 2.2 p.c. of GDP over the same period. At first sight, individuals therefore seem to have gained less benefit than the companies themselves from the strong profit growth. Nevertheless, the taxes which companies paid on income and wealth kept fairly closely in line with the movement in their gross profit. Thus, in the period from 2005 to 2007, those taxes exceeded the taxes paid in 2002 by 0.6 p.c. of GDP, representing 18 p.c. of the increase in their gross profit. In addition, the gross investment of companies expressed as a percentage of GDP has also increased from 12.2 p.c. in 2002 to an average of 13.5 p.c. in the past three years. In the last two years in particular, owing to the strong growth of the gross profit, the gradual increase in external financing costs has not weakened corporate propensity to invest. The fairly strong increase in the financing balance of companies is therefore due mainly to the gradual decline in the net dividends paid to other sectors, as a percentage of GDP. During 2005-2007, the net dividends which companies paid to other sectors were down by an average of 0.4 p.c. of GDP compared to 2002, even though their gross profit after tax was up by 2.7 p.c. of GDP. For completeness, it should be mentioned that in the

TABLE 5 GROSS PROFIT AND FINANCING BALANCE OF COMPANIES

(percentages of GDP)

	Average 1995-2000	2001	2002	2003	2004	2005	2006	2007 e
Gross profit	21.4	20.6	21.4	22.9	23.6	24.3	25.0	24.9
Taxes on income and wealth (–)	3.0	3.2	3.2	3.0	3.3	3.6	3.9	3.8
Net dividends paid to other sectors (–)	4.2	5.2	5.5	5.5	5.0	5.2	4.9	5.2
Gross investment (–)	13.1	13.6	12.2	12.2	12.9	13.0	13.7	13.9
Other uses[1] (–)	0.1	0.4	0.3	1.4	0.5	0.3	–0.2	–0.4
Financing balance	**0.9**	**–1.7**	**0.3**	**0.9**	**1.9**	**2.2**	**2.7**	**2.4**

Sources: NAI, NBB.

(1) Net capital transfers paid to other sectors, net acquisitions of non-produced non-financial assets such as land, patents and goodwill, and the change in the net claims of households on pension funds.

past three years companies have received more net capital transfers than in 2002, and that has also contributed to the increase in their financing balance.

However, the weaker growth of net dividends paid by companies to other sectors over the past five years needs to be qualified, as there was a very strong rise in the net dividends which they paid in the period 2000-2002. On average, during 1995-1999 those dividends represented 22.6 p.c. of gross profit after tax, but in 2001 and 2002 that ratio increased to 30 p.c. If the 2002 peak is taken as the benchmark, then net dividends paid as a percentage of GDP declined fairly sharply in the ensuing years. However, by reference to the period 1995-2000, the net dividends paid by companies to other sectors have actually risen faster than GDP.

The years 2001-2002 also constituted an exceptional period for gross investment. After the bursting of the stock market bubble and the general economic slowdown, gross investment grew very slowly because companies gave priority to consolidating their balance sheets. The strong expansion of investment in subsequent years must therefore be regarded partly as making up lost ground.

In the past three years, the gross profit of companies has been 3.3 p.c. of GDP higher than in the reference period 1995-2000. That rise has resulted in an increase in their redistributive expenditure in the broad sense (including investment) amounting to 2 p.c. of GDP, and an increase of 1.5 p.c. of GDP in their financing balance. Whatever the reference period considered, the financing balance of companies has therefore still risen significantly. That improvement means that companies have gradually been able to finance more of their investment out of internal resources, so that their degree of financial independence – i.e. the ratio between equity capital and total liabilities – has steadily increased.

3.3 The financing balance of companies in an international perspective

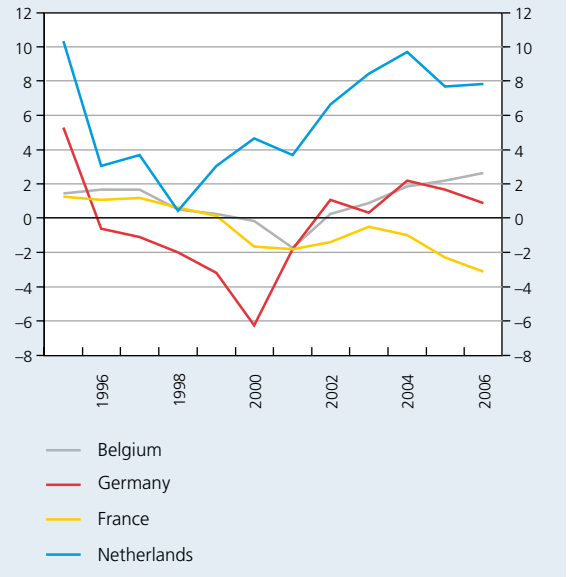
In Belgium's three main neighbouring countries, the financing balance of companies also showed a drop in 2000-2001. However, the speed and strength with which that balance recovered in subsequent years varied greatly from one country to another.

Germany was the country where the financing balance of companies showed the sharpest fall (down to –6.3 p.c. of GDP in 2000), but it recovered very quickly. In 2002, the deficit had already been converted to a surplus of 1.1 p.c. of GDP. This was due partly to the increase in the gross operating surplus (particularly thanks to wage moderation), but the main factor was the weak growth of investment. In the ensuing years, the gross operating surplus of companies continued to grow strongly, while the rate of expansion in gross investment lagged behind. However, this did not lead to any further upward tendency in the financing balance, which fluctuated between 0.3 and 2.2 p.c. of GDP without displaying any clear trend. For one thing, the increase in the gross operating surplus was partly negated by the fact that companies also paid more taxes. Also, the increase was offset by a fall in net property income and in net capital transfers received, both in relation to GDP.

Much the same pattern emerged in the Netherlands. Although the financing balance of companies hardly declined at all in 2001, it still recorded a very strong rise totalling 6 p.c. of GDP in the period 2002-2004. In the Netherlands, too, that increase was due mainly to the sharp fall in the investment ratio, although the gross operating surplus did grow slightly faster than GDP. However, in 2005 and 2006, although the gross operating surplus continued to grow strongly, the financing balance declined as a result of a sharp deceleration in net property income.

CHART 8 INTERNATIONAL COMPARISON OF THE FINANCING BALANCE OF COMPANIES

(percentages of GDP)



Sources: EC, NAI.

In contrast, in France the financing balance of companies did not tend to recover in the period 2001-2006. Although that balance was 1.3 p.c. of GDP higher in 2003 than in 2001, it then subsided to well below the 2001 level. This recent pattern reflects the phenomenon mentioned earlier, namely that the wage share in France has not contracted in the past few years, in contrast to the situation in most other euro area countries. The strong rise in real labour costs per employee (outstripping productivity growth) has driven up costs and therefore reduced the gross operating surplus of companies. Conversely, in Belgium, Germany and the Netherlands wage moderation made a positive contribution to the increase in the operating surplus and financing balance of companies.

Conclusion

This article analyses the income flows of individuals and companies on the basis of the national accounts. Although much attention focuses on the movement in the wage share, the article is broader in scope than that, because it also examines the redistribution of incomes between sectors and the purposes for which individuals and companies use their income. The main findings can be summarised as follows.

Analysis of the primary incomes arising from domestic production reveals that companies generate the most value added. In 2006, they used 60.6 p.c. of that value added to cover labour costs, a share that has however declined in recent years, as during 1995-2002 the average figure was 64.3 p.c. Conversely, general government creates the least value added but pays out most of it in the form of labour costs, namely 88 p.c. in 2006, compared to 86.1 p.c. in 1995. In the case of the value added of individuals – both self-employed workers and home owners – only 10.6 p.c. was paid out in the form of labour costs in 2006.

There are various definitions of the wage share and they produce very different results in terms of level, but they mostly still present a similar picture. Thus, all definitions indicate a fairly stable pattern in the second half of the 1990s, followed by a slight rise and subsequently a somewhat sharper fall during 2003-2005. In the past two years, there has been no further significant change in the wage share. Its contraction in 2003-2005 was partly a reflection of the business cycle. In response to the slackening pace of activity in 2001 and 2002, companies tried to reduce their labour costs via corporate restructurings and wage moderation. In addition, the recent pattern can also be regarded as part of the downward trend in the wage share since the early 1980s, just as in most other euro area countries. In the literature, that downward trend is often linked to structural developments such as globalisation which has expanded the labour supply worldwide, technological progress which has made production more capital intensive, and the growing importance of the services sector which features a smaller wage share.

However, wages are not the only income category of individuals to have declined as a percentage of GDP. Since 1995, the rise in the total gross disposable income of individuals has almost continuously lagged behind GDP growth. That is due mainly to the downward trend in net interest income as a percentage of GDP, which in turn reflects the falling interest rates. However, the downward trend in individuals' disposable income as a percentage of GDP does not mean that those incomes have also declined in absolute terms. On average, the disposable income of individuals increased by 3 p.c. per annum between 1995 and 2007. Even taking account of inflation as measured by the private final consumption expenditure deflator, disposable income increased in real terms by an average of 1.1 p.c. per annum. Yet this positive average conceals the fact that disposable income did fall in absolute terms in certain years, or for certain population groups.

Like the gross disposable income of individuals in relation to GDP, their final consumption expenditure also displayed a downward trend, as a percentage of GDP. However, this was far less pronounced, and that was therefore reflected in a downward trend in the savings ratio, from 20 p.c. of disposable income in 1995 to a low of 12.2 p.c. in 2005, after which a gradual recovery set in. That recovery is not, however, evident in the financing balance of individuals, as they do not only consume but also invest, primarily in the form of housing construction and renovation. Since 2004, individuals have recorded a strong rise in their investment expenditure, underpinned by the very low mortgage interest rates and the surge in house prices, and that has been reflected in a further decline in their financing balance which has been below 1 p.c. of GDP in the past three years.

The principal counterpart of the recent contraction in the wage share is the sharp increase in the gross operating surplus of companies, that surplus also being by far their main source of income. However, that increase has not led to a corresponding rise in the financing balance of companies, because the latter have also paid more taxes on income and wealth, and their investment spending has expanded faster than GDP. In comparison with the period 1995-2000, companies have also paid out more to other sectors in net dividends, as a percentage of GDP, though dividends were even higher in the period 2001-2003. In all, individuals have therefore also benefited from the strong

corporate profit growth. Nevertheless, the financing balance of companies has also risen steadily to an average of 2.4 p.c. of GDP in the past three years. Although this rise can be viewed partly as making up lost ground, following the deterioration during the period 1998-2001, the recent improvement still looks significant. It has enabled companies to move gradually towards financing more of their investment out of internal resources, thus further consolidating their balance sheets.

The trend shifts in income flows described in this article are not peculiar to Belgium since they also occurred in most other euro area countries. To some extent, they are due to structural developments such as globalisation, technological progress and population ageing. Although such developments are inevitable, policymakers can do much to provide support, in particular by creating a robust and stable macroeconomic framework backed by efficient labour and product markets. Finally, it should be pointed out that there is no guarantee that the recent developments will continue at the same pace in the future, as is already apparent from previous long-term movements.

Interregional transfers and solidarity mechanisms via the government budget

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Introduction

The socioeconomic context prevailing in each of the three Belgian regions displays considerable variations. These form the basis for the interregional transfers effected via the government budget. In the past, a number of studies [1] have already attempted to assess the scale of the financial flows between regions, and have thus revealed continuous net transfers from the Flemish Region to the Walloon Region since the late 1960s, and also to the Brussels-Capital Region since the 1990s [2].

This article on interregional transfers and solidarity mechanisms via the government budget is not based on the findings of earlier studies but sets out the results of an analysis conducted by the National Bank of Belgium. That analysis focuses solely on transfers, in contrast to various other studies which examine the regional allocation of total public revenues and expenditure. Thus, the analysis excludes government transactions which cannot be regarded as transfers since they correspond to payments associated with a direct counterpart.

The article is structured as follows. Section 1 defines the concept of interregional transfers adopted in the study. Section 2 briefly describes the socioeconomic situation in each of the three regions. Section 3 offers a detailed assessment of the scale and determinants of interregional transfers in Belgium. Next, section 4 presents projections of the future pattern of these transfers, taking account of the impact of expected demographic developments and of various employment scenarios. Section 5 considers Belgium's interregional transfers in an international perspective, their relative scale being measured against that of interregional transfers recorded in other EU countries. The final section sums up the main findings of the study.

1. The concept of interregional transfers

Almost all public revenue and a large proportion of public expenditure consist of transfers, i.e. payments with no direct counterpart. On the revenue side, that applies to taxes and social contributions. Although the government uses these revenues to finance public facilities and social benefits, among other things, those are indirect counterparts. On the expenditure side, it applies to social benefits – such as pensions, child benefits, invalidity benefits and unemployment benefits, and public health care expenditure – and other transfers of income and capital as subsidies granted to enterprises, households or NPIs. Other transactions, such as dividends and proceeds of sales accruing to the government, and salaries, purchases of goods and services, investment expenditure and interest

(1) Cf. in particular Van Rompuy and Bilsen (1988), and De Boeck and Van Gompel (1998).

(2) Commissioned by the Flemish government, the most recent study on the subject was conducted by Abafim, the Flemish authority for finance and the budget, and was published in October 2004. It concluded that net financial transfers of around 6.6 billion euro were effected from the Flemish Region to the Walloon Region (5.4 billion) and the Brussels-Capital Region (1.2 billion) in 2003. The methodology of the study was subsequently examined by a committee of experts, which made a number of comments.

charges, have a direct counterpart and are therefore excluded from the study.

These transfers are the primary means by which the government performs its role of redistribution and by which social solidarity is organised, as taxation takes account of the economic capability of each taxpayer, and in particular the level of his income, the extent of his assets and his family situation. In addition, social benefits offer partial protection against the loss of income resulting from a number of social risks which may impede participation in the world of work, such as ageing, invalidity or unemployment.

Transfers from or to the government can be broken down by region[1]. Transfers between the government and households are based on the place of residence, whereas transfers between the government and businesses are based on the place where the business is conducted or value is created.

It is possible to conduct a regional comparison of the relative scale of the public transfers thus broken down. A region is considered as a contributor of interregional transfers in terms of public revenues if, per head of population, the transfers by that region's residents to the federal government or social security – e.g. in the form of personal income tax, social contributions or corporation tax – are higher than the per capita national average. Conversely, a region is regarded as a recipient of such transfers if its contribution is proportionately lower than would be expected on the basis of its percentage of the population. A similar reasoning also applies to transfers received by households from the government, and especially social benefits. Assessment of the interregional transfers on the basis of both public revenue and public expenditure reveals the net position of each region in terms of interregional transfers. By definition, the total of interregional transfers is zero.

Since the calculations were done in the current Belgian institutional context, the interregional transfer results presented are only valid in that context. If the Belgian institutional context were to change, altering the government subsectors or entities collecting certain taxes and social contributions or granting certain social benefits, that could lead to different – perhaps even very different – results.

Finally, it was necessary to use allocation formulas, which were sometimes relatively rudimentary, in order to break down public transfers among the various regions. The interregional transfers deduced from those data therefore offer only an approximate idea of the real financial flows between the regions.

(1) Only public authority transfers effected by the federal government and social security are examined. Regional and local taxes are excluded from the analysis since they do not, in principle, imply any interregional transfer. Social benefits and other transfers, such as the subsidies which the communities, regions or local authorities pay to enterprises, households or NPIs, are also disregarded.

Box – Place of residence versus place of work criterion for the calculation of interregional transfers

This article analyses the transfers between the government and households on the basis of the household's place of residence. This accords with the economic logic applied for the purpose of compiling the regional household accounts.

Sometimes an alternative approach is advocated whereby the interregional transfers are calculated on the basis of the place of work of the individuals and, in principle, of the persons covered by social insurance.[1] The argument most commonly put forward here is that this approach allows commuting to be taken into account. It is then often suggested that the position of the Brussels-Capital Region in regard to interregional transfers would be much more favourable if the place of work criterion were used rather than the place of residence criterion.

The degree to which, according to this alternative approach, the place of work criterion should be applied to the various transfers between the government and households is interpreted in various ways. For instance, there are interpretations whereby all these transfers are allocated according to the place of work, as opposed to

interpretations whereby that applies only to certain transfers. In both cases, however, conceptual and practical problems arise.

According to the approach in the broad sense, the place of work criterion is used to allocate all transfers between the government and households. Consequently, according to that approach, it is not only personal income tax and social contributions that are allocated according to the place of work criterion but also social benefits, for example, which are financed partly by those social contributions. However, in conceptual terms it is unclear how pensions, child benefit, unemployment benefit etc, should be attributed to the various regions. Such an approach would therefore only be possible if a number of assumptions – debatable by definition – are applied. But even in that case the available statistical data do not permit the allocation of social benefits according to the place of work criterion. Moreover, such an approach does not accord with the current Belgian institutional context, and that goes against the approach adopted in this article.

According to the approach in the strict sense, the application of the place of work criterion is generally confined to the allocation of social contributions.(2) However, this approach cannot be applied consistently, as it does not present any link between the regional allocation of social contributions on the one hand, and the related social benefits on the other. In practice, this means for example that these studies make the assumption that residents of the Flemish or Walloon Region who work in the Brussels-Capital Region pay social contributions there but receive their pensions from the Flemish or Walloon Region, causing significant distortion in the transfers. This approach would also imply that if, for example, more residents of the Walloon Region were to go and work in the Flemish Region and the social contributions were attributed to the latter region according to the place of work criterion, then all other things being equal that would increase the interregional transfers from the Flemish to the Walloon Region; that can hardly be called a sensible conclusion. This example shows that the interpretation of the results obtained according to this approach is problematic.

This article therefore refrains from using the place of work criterion.

(1) E.g. the report by the committee studying the methodology used in the analysis of interregional transfers (2006) – this committee examined the methodology of the 2004 Abafim study – advocates use of the place of work criterion alongside the place of residence criterion.

(2) Sometimes it is confined solely to employers' social security contributions, on the grounds that these are transfers paid by enterprises. This approach conflicts with that adopted in the national accounts, whereby labour costs are all viewed as compensation for the work performed by the employees (and households paying the total amount of social contributions).

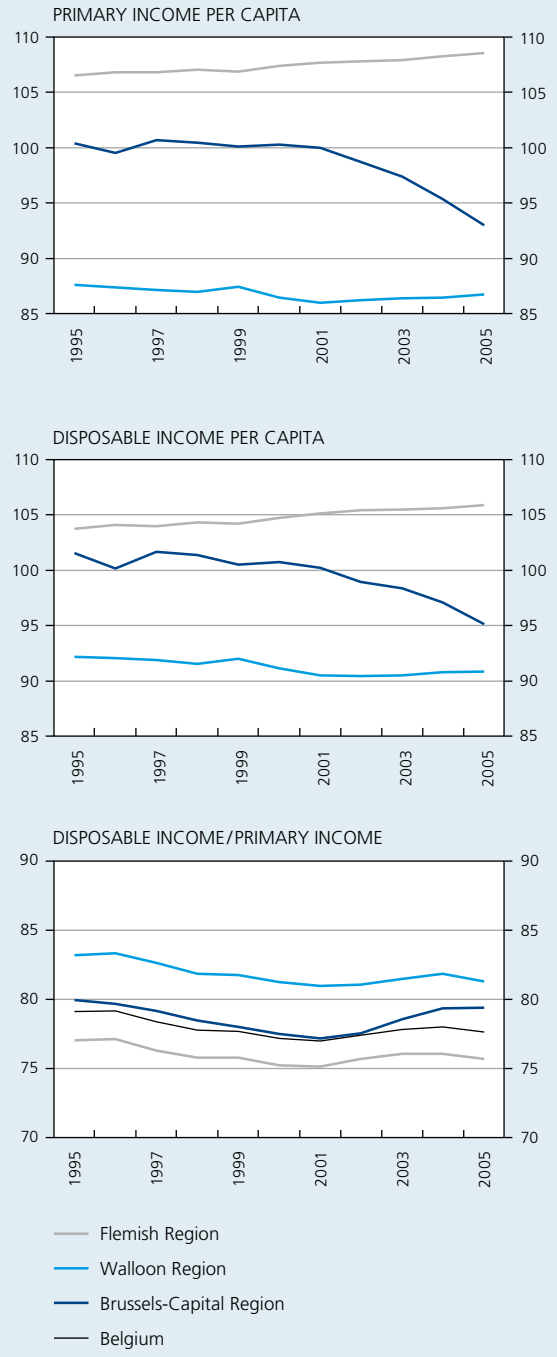
2. The socioeconomic situation of the three Belgian regions

The three Belgian regions feature significant socio-economic disparities. For instance, the primary income of households per capita is considerably higher in the Flemish Region than in the other two regions, and hence in the country as a whole. More specifically, in 2005 – i.e. the year to which the calculations in this study relate, since that is the latest year for which all the necessary data were available – the primary income of households per capita was 8.5 p.c. above the national average in the Flemish Region. Conversely, in the Walloon Region, the primary income of households per capita was 13.3 p.c. below the national average, and in the Brussels-Capital Region the negative gap was 7 p.c. In this last region, however, the gross value added per capita is around twice the national average. Commuters are part of the reason for the divergence in the Brussels-Capital Region between the gross value added per capita and the primary income per capita.

The variations in the primary income of households per capita between the regions are due mainly to differences in the labour market situation, as the employment rate in the Flemish Region is around 9 percentage points higher than in the Walloon Region and over 11 percentage points above the rate in the Brussels-Capital Region. The Flemish Region has a considerably higher activity rate and much lower unemployment rate than the other two regions.

CHART 1 PRIMARY INCOME AND DISPOSABLE INCOME OF HOUSEHOLDS

(Belgium = 100, unless otherwise stated)



Sources : NAI, NBB.

Since the Flemish Region is the one with the highest primary income of households per capita, the taxes and social contributions paid there by households to the government are higher in relative terms – i.e. as an average per capita – than in the other two regions. In view of its higher primary income of households per capita and a lower unemployment rate, the Flemish Region should logically be a net contributor to interregional transfers. Conversely, the socioeconomic context specific to the Walloon Region implies that the region is a net recipient of these transfers. The same applies to the Brussels-Capital Region, at least in regard to transfers between the government and households. The effect exerted on household incomes by the secondary income distribution – via taxes and social contributions, on the one hand, and via social benefits, on the other hand, – is therefore relatively more favourable in those two regions than in the Flemish Region. In fact, although the disposable income of households per capita in the latter was still 5.9 p.c. above the national average in 2005, that is less than the difference in primary income of households per capita. The opposite situation applies in the Walloon Region and the Brussels-Capital Region, since the negative gaps between disposable income of households per capita and the national average are only 9.1 and 4.9 p.c. respectively.

3. Scale and determinants of interregional transfers in Belgium

The analysis of interregional transfers via the government budget in Belgium is based largely on the data from the household regional accounts, published since 2003 by the National Accounts Institute. The latest statistics, which are used for the calculations presented below, relate to the year 2005. To make it possible to measure the total interregional transfers, these data were supplemented with other information and with the results of our own calculations, particularly in regard to corporation tax, indirect taxes and public expenditure on health care.

3.1 Transfers via public revenues

The main fiscal and parafiscal revenues of the federal government and social security come from personal income tax, the withholding tax on income from movable property, social contributions, corporation tax, VAT and excise duty. This section examines the aspects relating to the allocation of these revenues among the regions. The taxes collected by the federal government on behalf of the regions and local authorities and the taxes which the latter entities collect themselves are outside the scope of the analysis, since these taxes do not imply any interregional transfers. That is why the revenues generated by personal income tax and VAT are adjusted for the portion transferred to the communities and regions in accordance with the Special Finances Act of 16 January 1989.

TABLE 1 SOCIOECONOMIC CONTEXT OF THE THREE BELGIAN REGIONS

(2005; Belgium = 100, unless otherwise stated)

	Flemish Region	Walloon Region	Brussels-Capital Region	
Gross value added per capita	99.1	72.2	198.4	
	↓	↓	↓	Influence of commuters in particular
Primary income of households per capita	108.5	86.7	93.0	
	↓	↓	↓	Impact of the distribution of secondary income (via public transfers)
Disposable income of households per capita	105.9	90.9	95.1	
Employment rate (1)	66.1	57.0	54.8	
Unemployment rate (2)	4.4	10.5	17.2	

Sources: EC; NAI; FPS Economy, SMEs, Self-employed and Energy (DGSEI); NBB.
(1) Percentage of the population of working age (persons aged 15 to 64), in 2007.
(2) Percentage of the labour force of working age, in 2007.

DIRECT LEVIES ON INCOMES

The regional breakdown of the levies on household incomes, such as personal income tax, the withholding tax on incomes from movable property, and social contributions, is based on the method of allocating secondary household incomes adopted in the regional accounts. It therefore operates according to the place of residence of the households, in the same way as that which applies to other transfers between households and the government. In contrast, the regional allocation of corporation tax is effected in this study on the basis of the value added of the companies per region.

In 1995, the per capita revenues generated by personal income tax and the withholding tax on income from movable property paid in the Flemish Region were already well above the national average. That positive gap widened further during the next decade owing to the relatively more favourable movement in incomes in that region. In contrast, the opposite picture is seen in the Walloon Region: per head of population, personal income tax and withholding tax on income from movable property were well below the national average there in 1995, and that negative gap widened further in the ensuing years. Nevertheless, there has been a turnaround since 2002, narrowing the gap to some extent. However, the most striking development occurred in the Brussels-Capital Region. While the per capita average there was close to the national figure in 1995, it has since dropped well below it.

The social contributions paid per capita display a similar trend, although it is less pronounced. This is due in part to the fact that the social contributions are, in principle, levied as a fixed percentage of gross pay, whereas personal income tax is progressive.

Reflecting the fact that incomes are relatively higher in the Flemish Region, the latter's total contribution by way of personal income tax, withholding tax on income from movable property and social contributions was around 4.1 billion euro higher, in 2005, than might be expected purely on the basis of its share of the population. Where these revenues are concerned, that region can therefore be considered as an interregional transfer contributor. Conversely, contributions from the Walloon Region and the Brussels-Capital Region were respectively around 3.3 billion euro and 900 million euro lower than would be expected, so that in this respect they are interregional transfer recipients.

In the case of corporation tax, the situation is totally different. The largest contribution comes from the Brussels-Capital Region, whose central geographical location and capital status attract many businesses pursuing a wide range of economic activities. In per capita terms, the corporation tax revenues collected in that region are twice

TABLE 2 INTERREGIONAL TRANSFERS VIA PUBLIC REVENUES[1]

(2005, millions of euro)

	Flemish Region	Walloon Region	Brussels-Capital Region
Public revenues	**5,052**	**–5,136**	**83**
Direct taxes			
Personal income tax[2] and withholding tax on income from movable property	1,978	–1,524	–455
Actual social contributions	2,147	–1,737	–409
Corporation tax	175	–1,241	1,066
Indirect taxes			
VAT	504	–381	–123
Excise duty	26	31	–56
Special Finances Act and other federal allocations			
Resources generated by VAT and personal income tax	111	–193	82
Other federal allocations[3]	112	–90	–22

Sources: NAI; FPS Economy, SMEs, the Self-employed and Energy (DGSEI); FPS Finance; NBB.

(1) A positive figure indicates a transfer from the region concerned, whereas a negative figure indicates a transfer to that region.

(2) Excluding the average local additional percentages on personal income tax per region.

(3) The other federal allocations concern the allocation to the German-speaking Community, the drawing rights of the regions in regard to getting unemployed persons back into work, and the allocation for investments in the Brussels-Capital Region (Beliris). The allocation for foreign students is excluded from the calculations since it does not go to residents of the regions.

the national average. Thus, in the case of corporation tax, the Brussels-Capital Region made a contribution to interregional transfers of 1.1 billion euro in 2005. The Flemish Region also contributes to interregional transfers via corporation tax, but to a much smaller degree than the Brussels-Capital Region. The Walloon Region, conversely, is a major recipient of these transfers.

VAT AND EXCISE DUTY

The regional accounts do not supply data on the regional breakdown of VAT and excise duty. In the present study, it was therefore decided to use other sources of information, such as the household budget surveys, in order to permit such a breakdown[1]. Application of the current VAT and excise rates to the various expenditure categories identified by these surveys provides an indication of the indirect taxes paid by residents of a particular region, wherever their expenditure took place. The VAT allocated on that basis comprises only the VAT on household consumption expenditure. Households also pay VAT on new housing and home renovations. The VAT payable on new housing was allocated according to the newly built habitable area in each region, while the VAT charged on renovation was allocated according to the number of applications for renovation permits submitted in each region. The non-deductible VAT paid by public enterprises and by companies could not be broken down owing to the absence of any reliable formula[2].

In the case of VAT revenues, according to the method of calculation described above, the Flemish Region contributed 504 million euro to interregional transfers in 2005, whereas the Walloon Region and the Brussels-Capital Region received 381 and 123 million euro respectively by way of interregional transfers in this tax category.

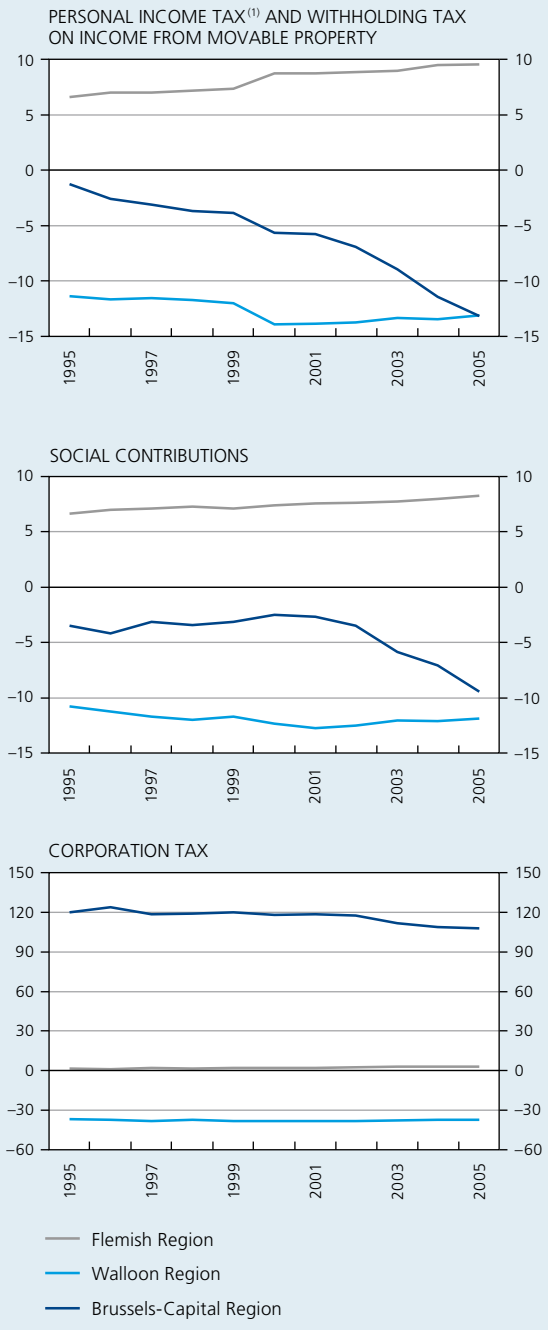
These transfers are not really due to differences between the regions in the average VAT rates applied to household expenditure: those rates are equivalent overall in the Flemish Region and in the Walloon Region, while the rate applied in the Brussels-Capital Region is slightly lower owing to the larger proportion of expenditure on housing which attracts a lower rate of VAT. The transfers are due primarily to the differences in incomes between the regions, since those differences are reflected in variations in consumption and investment expenditure from one region to another.

(1) Conducted by the Directorate General of Statistics and Economic Information of FPS Economy, SMEs, Self-employed and Energy, the household budget surveys aim to determine the average annual expenditure and income of households.

(2) In all, around 70 p.c. of total available VAT revenues are broken down per region, whereas there is no reliable formula available for allocating the remaining 30 p.c.

CHART 2 INTERREGIONAL TRANSFERS VIA DIRECT TAXES ON INCOMES

(percentage difference between the average taxes per capita and the national average, in percentages)



Sources: FPS Economy, SMEs, Self-employed and Energy (DGSEI); NAI; NBB.

(1) Excluding the average local additional percentages on personal income tax per region.

The regional breakdown of excise duties was also based on information obtained from the household budget surveys. The breakdown is therefore confined to the excise duties payable on products for which those surveys offer detailed data, namely the excise duties which households pay on tobacco and mineral oil[1].

The interregional transfers via excise revenues are much smaller than those via VAT revenues. The Flemish Region and the Walloon Region thus contributed 26 and 31 million euro respectively to interregional transfers in 2005. In contrast, the Brussels-Capital Region received 56 million euro, essentially as a result of lower expenditure on mineral oil in that region.

IMPACT OF THE SPECIAL FINANCES ACT

Pursuant to the Special Act of 16 January 1989 on the financing of the communities and regions, the federal government transfers to the communities and regions a considerable percentage of the revenues generated by personal income tax and VAT. As the revenue share which each region receives does not correspond to the share which it could claim according to its percentage of the population, the Special Act influences interregional transfers. It is therefore necessary to make a supplementary adjustment. In practice, this means that the analysis only examines the aspects relating to the regional allocation of the share of personal income tax and VAT revenues not transferred to the communities and regions, which thus accrues to the federal government and social security.

The method of calculation used to assess the redistributive effects of the Special Finances Act calls for two technical comments.

First, in this study the resources transferred to the communities were imputed to the regions on the basis of their share of the population and, for the Brussels-Capital Region, taking account of the 20/80 allocation formula stipulated by the Special Finances Act[2].

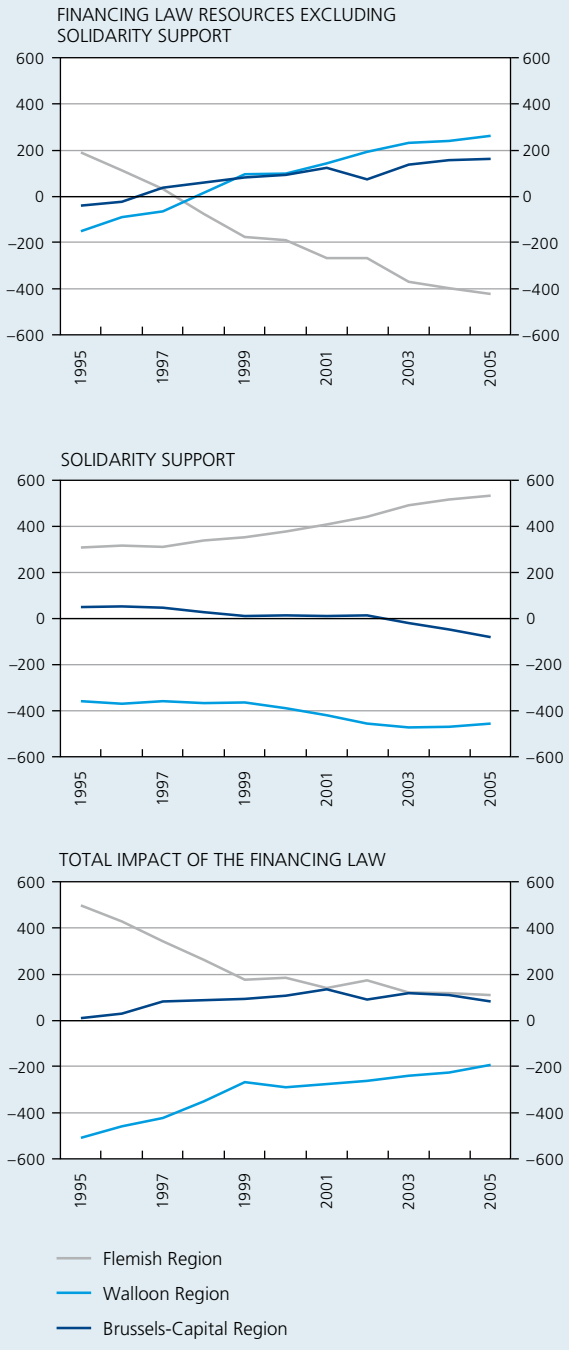
The second comment concerns the reform of the Special Finances Act introduced by the Lambermont agreements in 2001. That reform gave the regions greater fiscal autonomy by regionalising the revenues generated by various taxes and the associated powers, such as registration fees, gift taxes and motor vehicle duties. By way of compensation, a "negative term" was deducted from the personal

(1) These excise duties make up around 60 p.c. of total revenues collected in the form of excise duties.

(2) This formula is implicitly based on the assumption that 20 p.c. of the residents of the Brussels-Capital Region belong to the Flemish Community and 80 p.c. to the French Community.

CHART 3 IMPACT OF THE SPECIAL FINANCES ACT ON THE INTERREGIONAL TRANSFERS (1)

(millions of euro)



Sources: FPS Finance, NAI, NBB.

(1) A positive figure indicates a transfer from the region concerned, whereas a negative figure indicates a transfer to that region.

income tax revenues transferred. This negative term was retropolated in order to identify the interregional transfers via the resources resulting from the Special Finances Act in the period 1995-2005 (1). This avoids the need to calculate the regional breakdown prior to 2002, when taxation was still a federal responsibility.

The interregional transfers resulting from the Special Finances Act can be divided into interregional transfers excluding the solidarity support and those effected via that mechanism.

Since its entry into force, the trend in interregional transfers via the resources covered by the Special Finances Act, excluding the solidarity support, has always been favourable to the Flemish Region and unfavourable to the other two regions. The reason is that, during the transitional period of the Special Act between 1989 and 1999 and during the period following the Lambermont agreements, growing importance was attached to personal income tax revenues in each region for the allocation of these transfers. At present, the Flemish Region is therefore a net recipient of the said interregional transfers while the Walloon Region and the Brussels-Capital Region are contributors.

However, the influence of the regional breakdown of the personal income tax revenues as a formula for the allocation of the resources transferred to the communities and regions is tempered by the solidarity support provided for by the Special Finances Act. This support is paid to a region as soon as the gap between the level of personal income tax revenues per capita in that region and the corresponding national figure becomes negative. In the case of the Walloon Region, that was already the case when the Special Finances Act came into force, so that Wallonia has always received interregional transfers by way of the solidarity support payment. In the Brussels-Capital Region, per capita personal income tax revenues have fallen sharply in relation to the national average: at the beginning of the 1990s, those revenues had been well above the national average, but the positive gap systematically declined, becoming negative from 1997. Since that year, the Brussels-Capital Region has therefore claimed the solidarity support. However, it is only since 2003 that this support has resulted in a transfer to that region; between 1997 and 2003, the region's share in the solidarity support was in fact less than that corresponding to its percentage of the population. The Flemish Region has never received this support, so that it has always contributed towards these interregional transfers.

(1) The negative term is calculated on the basis of the regional breakdown of the taxes which were regionalised under the Lambermont agreements between 1999 and 2001.

Taking account of the total impact of the transfers of resources triggered by the Special Finances Act, both the Flemish Region and the Brussels-Capital Region contributed to the interregional transfers in 2005, in the sum of 111 and 82 million euro respectively[1]. In that same year, the Walloon Region received 193 million euro by way of interregional transfers. The total impact of the said resources on the interregional transfers is clearly declining, as it is currently much less pronounced than at the time of entry into force of the Special Act.

3.2 Transfers via public expenditure

Interregional transfers via public expenditure operate mainly via social benefits. This section examines in turn the aspects relating to the regional breakdown of expenditure in the form of pensions, pre-pensions, unemployment benefits, child benefits, health care, invalidity benefits and compensation for occupational diseases, allowances for career breaks and time credit, subsistence allowance and other social benefits. Finally, it describes the regional breakdown of subsidies to enterprises.

(1) In the case of the Brussels-Capital Region, the negative term – which is relatively large since the taxes regionalised under the Lambermont agreements are quite high – plays a significant role.

PENSIONS

The three regions of Belgium vary greatly in their demographic structure. In comparison with the other two regions, the Flemish Region has a relatively elderly population, as the population of the Walloon Region is slightly younger and that of the Brussels-Capital Region is considerably younger. In 2005, the proportion of persons aged over 65 years in the total population was 17.8 p.c. in the Flemish Region, or around 1 percentage point higher than in the Walloon Region and almost 3 percentage points higher than in the Brussels-Capital Region. The demographic disparities between the regions are the main factor accounting for the interregional transfers by way of pension benefits.

Interregional transfers via pensions are also determined by the average pension paid to each person aged over 65, although the influence of that factor is far more tenuous, since the average pension does not vary greatly between the regions. In the Flemish Region and in the Brussels-Capital Region, that figure is below the national average, whereas it is slightly above it in the Walloon Region. This is due mainly to the relatively large proportion of public sector pensions in the Walloon Region, which are generally higher than the pensions of private sector employees and the self-employed.

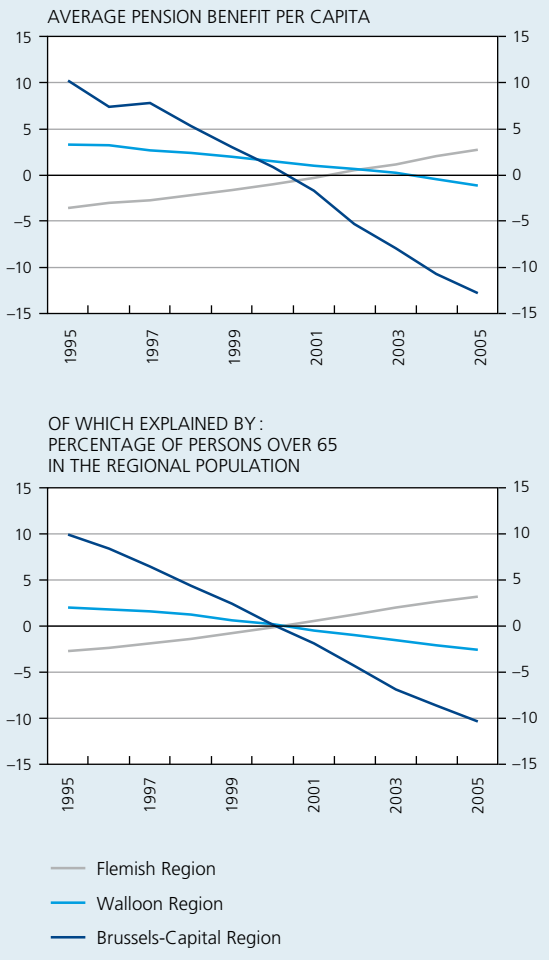
TABLE 3 INTERREGIONAL TRANSFERS VIA PUBLIC EXPENDITURE[1]
(2005, millions of euro)

	Flemish Region	Walloon Region	Brussels-Capital Region
Public expenditure	**790**	**–920**	**130**
Pensions	–417	95	322
Pensions of employees and self-employed	–421	177	244
Public sector pensions	4	–82	78
Pre-pensions	–122	52	70
Unemployment benefits	864	–619	–245
Child benefits	121	–74	–47
Health care expenditure	2	–57	55
Invalidity benefits	86	–100	14
Compensation for occupational diseases	66	–92	26
Career breaks and time credit	–66	39	27
Subsistence allowances	148	–66	–82
Other social benefits	132	–118	–14
Subsidies to enterprises (service vouchers)	–24	20	4

Sources: FPS Economy, SMEs, Self-employed and Energy (DGSEI); NSDII; NAI; NEO; NBB.
(1) A positive figure indicates a transfer from the region concerned, whereas a negative figure indicates a transfer to that region.

CHART 4 INTERREGIONAL TRANSFERS VIA PENSIONS

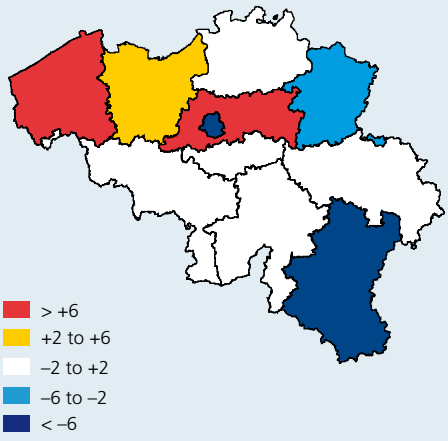
(difference from the national average, in percentages)



Sources : FPS Economy, SMEs, Self-employed and Energy (DGSEI) ; NAI ; NBB.

CHART 5 INTERPROVINCIAL TRANSFERS VIA PENSIONS

(2005, differences in percentages between the average benefit per capita and the national average)



Sources : FPS Economy, SMEs, Self-employed and Energy (DGSEI) ; NAI ; NBB.

Consequently, the Flemish Region received 417 million euro in 2005 in the form of interregional transfers via pensions. The Walloon Region and the Brussels-Capital Region, in contrast, made respective contributions of 95 and 322 million euro by way of pensions.

However, the demographic disparities have not always displayed the same pattern. Thus, in 1995, the Brussels-Capital Region still had a relatively elderly population while the Flemish Region's population was considerably younger than that of the other regions, a situation which has since been reversed, as already mentioned.

These demographic changes are naturally reflected in the pattern of interregional transfers via pensions. The Brussels-Capital Region saw the most striking development : whereas in 1995 the average per capita pension there was still well above the national average, a decade later it was well below that figure. The Walloon Region also recorded a downward trend though it was much less pronounced. Conversely, the opposite happened in the Flemish Region, since the average per capita pension there rose faster than the national average. While the Walloon Region, and especially the Brussels-Capital Region, became contributors to interregional pension transfers between 1995 and 2005, having previously been recipients, the Flemish Region became a pension transfer recipient instead of a contributor.

The total pensions can be divided between private sector pensions – namely those paid by the social security schemes for employees and self-employed workers – and public sector pensions. This distinction shows that interregional transfers going to the Flemish Region essentially concern private sector pensions. In contrast, the Walloon Region receives interregional transfers by way of public sector pensions. The Brussels-Capital Region contributed towards the transfers in 2005, in the case of both private sector and public sector pensions.

In the case of pensions, the scale of the interprovincial transfers is also relatively large. Thus, in 2005, the average pension per capita in Brussels-Capital [1] and in the provinces of Luxembourg and Limbourg was well below the

(1) The Brussels-Capital Region is included in the exercise even though, in principle, it is no province.

national average. West Flanders, Flemish Brabant and East Flanders were at the opposite end of the spectrum. In the other provinces, the average pension per capita broadly corresponded to the national average.

PRE-PENSIONS

In 2005, the average pre-pension paid per capita in the Flemish Region was 16.8 p.c. higher than the national average, whereas in Wallonia and Brussels the per capita benefits were lower by 12.7 and 58.1 p.c. respectively.

Public expenditure on pre-pensions therefore led to a transfer of 122 million euro to the Flemish Region in that year. The Walloon Region and the Brussels-Capital Region contributed 52 and 70 million euro respectively to the interregional transfers.

UNEMPLOYMENT BENEFITS

As already pointed out, the relative level of unemployment varies greatly from one region to another. Differences in unemployment rates are one of the main factors explaining the interregional transfers via unemployment benefits. In addition, the average periods of unemployment vary considerably between the regions, which in turn leads to higher average amounts of unemployment benefit per claimant. Thus, in 2005, the average benefit in the Flemish Region was considerably higher than the average in the Walloon Region and higher still than the benefit paid in the Brussels-Capital Region. This last factor is also behind the interregional transfers via unemployment benefits.

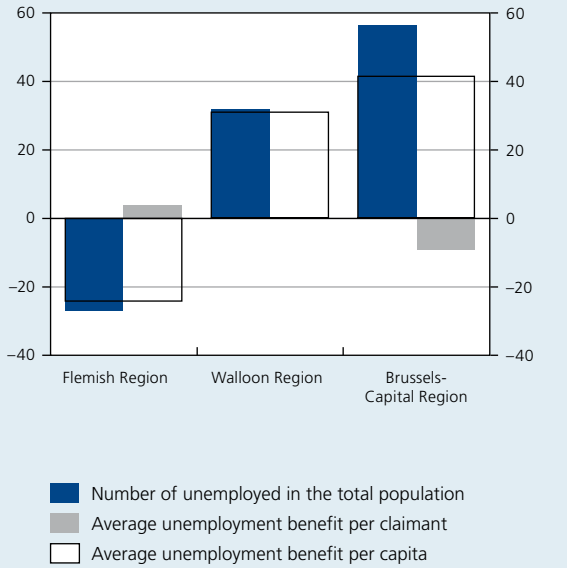
In 2005, the average unemployment benefit paid per capita in the Walloon Region was 31.1 p.c. above the national average, and the positive differential was actually 41.4 p.c. in the Brussels-Capital Region. In contrast, in the Flemish Region the average unemployment benefit per capita was 24.4 p.c. below the national average.

Comparison of the regional breakdown of the unemployment benefits paid in 2005 with the regional breakdown of public expenditure that would correspond to each region's share of the country's population reveals that the Walloon Region and the Brussels-Capital Region respectively received an extra 619 and 245 million euro. In that year, the Flemish Region contributed 864 million euro to the interregional transfers via unemployment benefits.

The interregional transfers via unemployment benefits increased between 1995 and 2005. More specifically, the Flemish Region contributed more, while the other two regions received larger transfers.

CHART 6 INTERREGIONAL TRANSFERS VIA UNEMPLOYMENT BENEFITS : EXPLANATORY FACTORS

(2005, differences from the national average, in percentages)

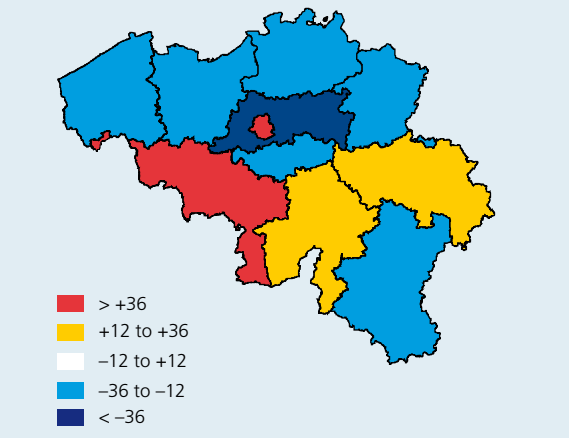


Sources : FPS Economy, SMEs, Self-employed and Energy (DGSEI) ; NAI ; NEO ; NBB.

Unemployment benefit transfers were again very substantial between the provinces. This time, the leading recipients were Hainaut and Brussels-Capital. In the provinces of Liège and Namur, the average unemployment benefit

CHART 7 INTERPROVINCIAL TRANSFERS VIA UNEMPLOYMENT BENEFITS

(2005, differences in percentages between the average benefit per capita and the national average)



Sources : FPS Economy, SMEs, Self-employed and Energy (DGSEI) ; NAI ; NEO ; NBB.

per capita was also above the national average in 2005. Like Walloon Brabant and Luxembourg, all the Flemish provinces contributed to the interprovincial transfers. The highest per capita contribution was recorded in Flemish Brabant, followed by West Flanders, Luxembourg, East Flanders, Antwerp, Walloon Brabant and Limbourg.

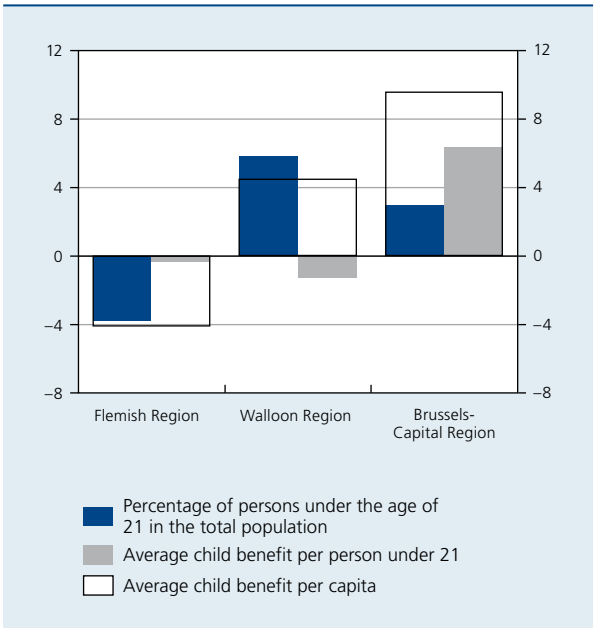
CHILD BENEFITS

As already mentioned, the Flemish Region's population is relatively elderly in comparison with that of the other two regions. The percentage of persons under 21 years old in the total population is below the national average, in contrast to the position in the Walloon Region and the Brussels-Capital Region. Moreover, the latter comprises the largest families, on average. Since the amount of child benefit increases according to the child's ranking within the family, the average benefits per child under the age of 21 are higher there.

The percentage of persons under 21 and the average amount of child benefit per child under 21 are both factors explaining the interregional transfers via child benefits.

CHART 8 INTERREGIONAL TRANSFERS VIA CHILD BENEFITS : EXPLANATORY FACTORS

(2005, differences in percentages compared to the national average)



Sources : FPS Economy, SMEs, Self-employed and Energy (DGSEI) ; NAI ; NBB.

In the Flemish Region, the average child benefits per capita were around 4.1 p.c. below the national average in 2005, while in the Walloon Region and the Brussels-Capital Region, they exceeded the national average by 4.5 and 9.6 p.c. respectively.

In 2005, the Flemish Region therefore contributed 121 million euro to interregional transfers via child benefits. The Walloon Region and the Brussels-Capital Region respectively received 74 and 47 million euro in that year.

HEALTH CARE

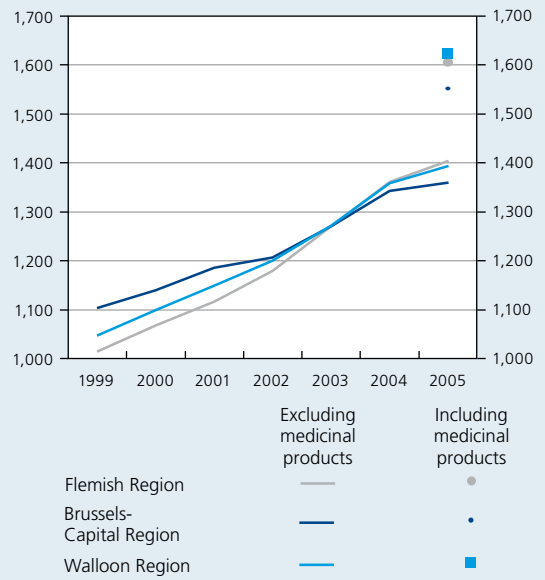
Interregional transfers by way of public health care expenditure are very small, the contribution from the Flemish Region amounting to just 2 million euro in 2005. Although the contribution from the Brussels-Capital Region was larger, at 55 million euro that year, it was still relatively modest. These transfers went to the Walloon Region, which received 57 million euro via public health care expenditure.

The average public health care expenditure per capita in the three regions is therefore fairly similar to the national average. In 2005, the Flemish Region's expenditure was broadly equivalent to the national average. In the Walloon Region, it was only 1 p.c. higher than the average. In contrast, the Brussels-Capital Region recorded a negative gap of around 3 p.c. However, these are averages which take no account of the population's characteristics, in particular the demographic structure and any additional health care allowances, if applicable.

The electronic monitoring system, Pharmanet, supplying data on the regional breakdown of purchases of medicinal products in pharmacies, was not introduced until 2004. These recent data were used to calculate the interregional transfers via public health care expenditure in 2005. More specifically, the largest difference in terms of health care expenditure per capita – namely the difference between the Walloon Region and the Brussels-Capital Region – is estimated at 71 euro in 2005. However, in order to obtain an idea of how these differences have changed in previous years, it is necessary to calculate the current differences in health care expenditure per capita excluding the amount spent on the purchase of medicinal products in pharmacies. It thus appears that the differences between the regions in terms of public health care expenditure declined between 1999 and 2005. One reason for that fall is the modest growth of public health care expenditure in the Brussels-Capital Region where, in per capita terms, that expenditure was lower than in the other two regions at the end of the period whereas it had initially been higher.

CHART 9 AVERAGE PUBLIC HEALTH CARE EXPENDITURE PER CAPITA (1)

(euro)



Sources : FPS Economy, SMEs, Self-employed and Energy (DGSEI) ; NSDII ; NBB.

(1) The differences between the regions in average public health care expenditure per capita are due to variations between the regions in the average amount of expenditure per person insured and the percentage of insured persons in the total population. In the Flemish Region, that proportion is 99 p.c., whereas it is 97 p.c. in the other two regions.

Health care expenditure comprises numerous expenditure categories, such as doctors' fees, purchases of medicinal products, hospitalisation costs, residential home and nursing home fees and the costs of day care and home care. The disparities between the regions in terms of these expenditure categories per capita are again small and appear to cancel one another out to some extent.

In per capita terms, expenditure on purchases of medicinal products from pharmacies and on almost all types of doctors' fees is higher in the Walloon Region than in the other two regions. Conversely, expenditure relating to hospitalisation costs is lower there than in the other two regions.

In contrast, in the Flemish Region, expenditure on purchases of medicinal products and doctors' fees is lower than in the other two regions. Expenditure on care homes and nursing homes and on day care and home care is higher there. In all probability, that is due to the region's demographic structure, with its relatively large number of elderly persons.

Finally, in the Brussels-Capital Region, expenditure on purchases of medicinal products, and even more so on residential homes and nursing homes, is relatively insignificant. That is due to the relatively small percentage of elderly persons in the Brussels-Capital Region, and to the residents' tendency to move to one of the other two regions if they wish to enter such homes. Nonetheless, it is also possible that , thanks to the proximity of many medical services, people are able to delay moving into that type of institution.

INVALIDITY BENEFITS

In 2005, invalidity benefits paid out per capita in the Flemish Region and the Brussels-Capital Region were 3.9 p.c. below the national average. In the Walloon Region, they exceeded the national average by 8.2 p.c.

In the case of these benefits, the Flemish Region and the Brussels-Capital Region contributed 86 and 14 million euro respectively to the interregional transfers in 2005. The Walloon Region received a transfer of 100 million euro.

COMPENSATION FOR OCCUPATIONAL DISEASES

Compensation for occupational diseases shows a very marked geographical concentration in Belgium. Thus, the compensation per capita in the Walloon Region was no less than 81 p.c. above the national average in 2005. In the Flemish Region and the Brussels-Capital Region, the figures were respectively 32 and 77 p.c. below the national average. These large differences between the regions are due essentially to the compensation for occupational diseases paid out in three provinces, namely Hainaut, Liège and Limbourg. In these provinces – which used to depend on mining – per capita compensation is in fact particularly high, whereas in all the other provinces except Namur it is below the national average.

However, since this is a relatively minor expenditure category, the interregional transfers for occupational disease compensation are relatively small. The total contributions of the Flemish Region and the Brussels-Capital Region came to 66 and 26 million euro respectively in 2005. In that year, the Walloon Region received 92 million euro by way of these interregional transfers.

ALLOWANCES FOR CAREER BREAKS AND TIME CREDIT

Via the allowances for career breaks and time credit, the Flemish Region received interregional transfers totalling 66 million euro in 2005, while the Walloon Region and the Brussels-Capital Region contributed 39 and 27 million euro respectively.

SUBSISTENCE ALLOWANCE

In 2005, the Flemish Region contributed 148 million euro to interregional transfers via the subsistence allowance. These transfers went to the Walloon Region and the Brussels-Capital Region, which received 66 and 82 million euro respectively.

OTHER SOCIAL BENEFITS

Altogether, other social benefits generated transfers from the Flemish Region to the Walloon Region and to the Brussels-Capital Region, amounting to 118 and 14 million euro respectively. This mainly concerned allowances paid by the social security fund, the business closure fund, allowances to disabled persons, war pensions, the guaranteed income for elderly persons and the guaranteed child benefits.

SUBSIDIES TO ENTERPRISES

Apart from interregional transfers paid via social security, there are also transfers in the form of subsidies to enterprises. In practice, this study deals only with aspects concerning the regional allocation of service vouchers. The other corporate subsidies mainly concern subsidies to public enterprises such as the BNRC and the Post Office. Since they are allocated per region according to the respective percentage of the population, they do not imply any interregional transfer. Since expenditure relating to the service vouchers was still relatively modest in 2005, the resulting interregional transfers are also small. They went to the Flemish Region, the main user of these vouchers.

3.3 Overview of the interregional transfers

On the basis of an overview of the situation prevailing in 2005, the Flemish Region evidently contributed around 5.8 billion euro to the interregional transfers. The Brussels-Capital Region also contributed just over 200 million euro to these transfers. These subsidies have benefited the Walloon Region, which received almost 6.1 billion euro in that year.

In per capita terms, the Flemish contribution came to 967 euro and that of the Brussels-Capital Region to 211 euro, while the Walloon Region received 1,783 euro per capita.

The bulk of these transfers – 80 p.c. in the case of the Flemish Region and the Walloon region – concern public revenues. In the Flemish Region, that is due largely to the fact that the average primary income per household, and hence also the associated taxes and social contributions, are relatively high. The opposite applies in the Walloon Region and in the Brussels-Capital Region. Nonetheless, the latter does contribute to interregional transfers of public revenues since it makes a relatively large contribution via corporation tax.

In the case of public expenditure, the interregional transfers are much smaller. In 2005, these transfers mainly passed from the Flemish Region to the Walloon Region. They resulted from both unemployment benefits and other social benefits, although they were moderated somewhat by the transfers effected via pensions. The Brussels-Capital Region was a recipient of interregional transfers via unemployment benefits, subsistence allowances and child benefits, but was a contributor to interregional transfers in the case of pensions, pre-pensions and health care expenditure. In 2005, that region made a net contribution to interregional transfers via public expenditure.

TABLE 4 OVERVIEW OF THE INTERREGIONAL TRANSFERS[1]
(2005; millions of euro, unless otherwise stated)

	Flemish Region	Walloon Region	Brussels-Capital Region
Public revenues	5,052	–5,136	83
Public expenditure	790	–920	130
Total	**5,843**	**–6,056**	**212**
p.m. Idem, per capita, in euro	*967*	*–1,783*	*211*

Sources: FPS Economy, SMEs, Self-employed and Energy (DGSEI); FPS Finance; NSDII; NAI; NEO; NBB.
(1) A positive figure indicates a transfer from the region concerned, whereas a negative figure indicates a transfer to that region.

Finally, the analysis reveals that most of the public expenditure categories also display marked differences between the provinces. That bears out the assumption that there are also substantial intraregional transfers as well as interregional transfers.

TREND IN INTERREGIONAL TRANSFERS

Expressed as a percentage of GDP, the total contribution of the Flemish Region to the interregional transfers declined slightly between 1995 and 2005, despite its growing contribution in terms of revenues and unemployment benefits. That increase was in fact more than offset by the decline in its contribution via pensions and other social benefits. In 2002, the Flemish Region exchanged its position as a contributor for that of a recipient in regard to pensions.

Throughout the period 1995-2005, the Walloon Region received interregional transfers. However, there was a slight reduction in the scale of these transfers, notably because that region has been contributing towards transfers via pensions since 2004.

Finally, the Brussels-Capital Region contributed to the interregional transfers throughout the period from 1995 to 2005. Its contribution increased fairly sharply between 1995 and 2000 before subsiding as a result of relatively adverse changes in the primary incomes of households per capita and the resulting changes in personal income tax and social contributions. Since the population of the Brussels-Capital Region is relatively young, that region has been contributing to interregional transfers via pensions since 2001.

4. Projections of future interregional transfers in Belgium

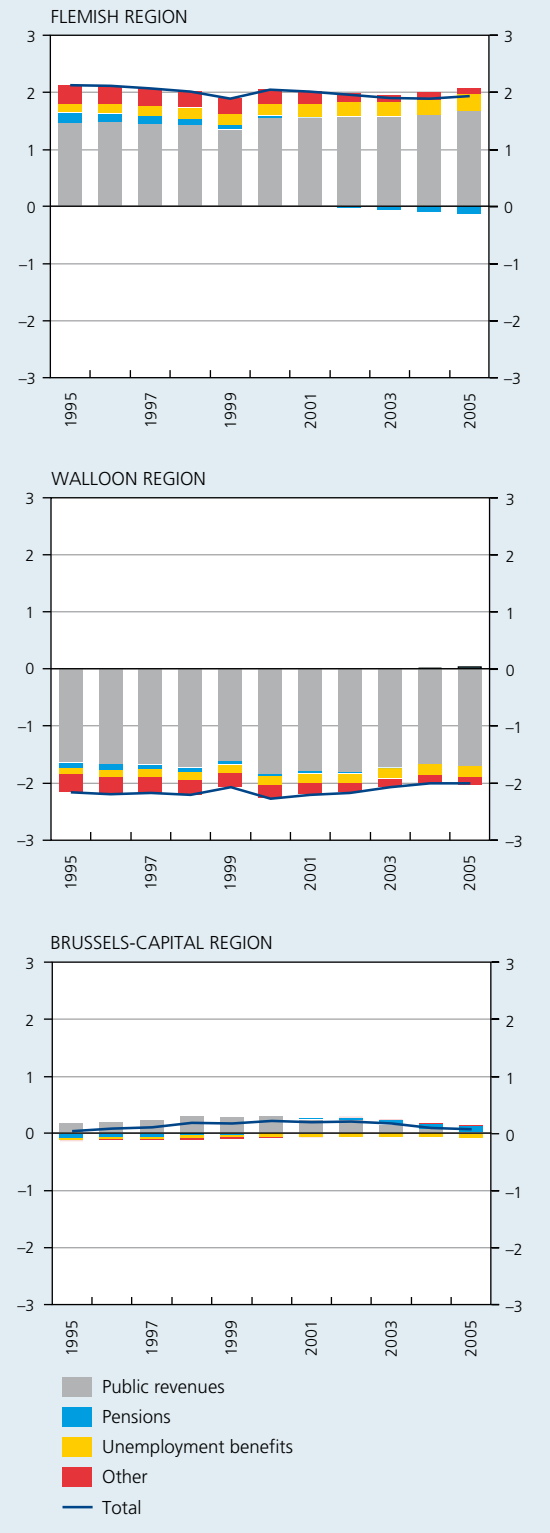
This section examines the possible future pattern of interregional transfers via the government budget. Naturally, the results of these projections depend on the underlying assumptions.

4.1 Assumptions underlying the projections

The macroeconomic context applicable to the projections is based on the assumptions set out by the Study Group on Ageing in its June 2008 report. The Study Group's findings were also used to examine the trend in the various social benefits. Taxes and social contributions are assumed to remain constant as a percentage of GDP, at least at the national level.

CHART 10 TOTAL INTERREGIONAL TRANSFERS (1)

(percentages of GDP)

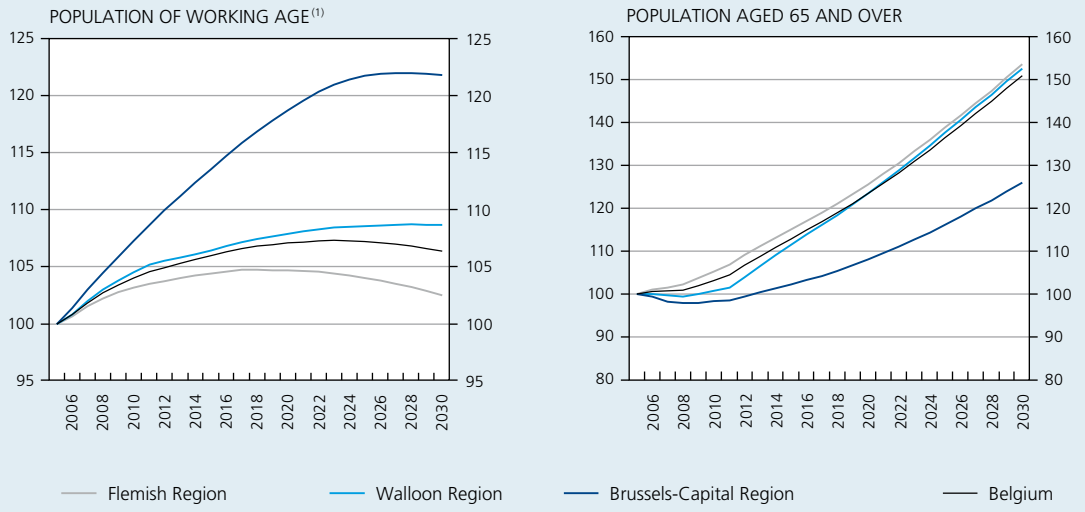


Sources : FPS Economy, SMEs, Self-employed and Energy (DGSEI) ; FPS Finance ; NSDII ; NAI ; NEO ; NBB.

(1) A positive figure indicates a transfer from the region concerned, whereas a negative figure indicates a transfer to that region.

CHART 11 EXPECTED DEMOGRAPHIC TRENDS PER REGION UP TO 2030

(index 2005 = 100)



Sources : FPB ; FPS Economy, SMEs, Self-employed and Energy (DGSEI).

(1) The population of working age is defined as the population aged from 15 to 64 years.

The assumptions which have the greatest impact on the future pattern of interregional transfers are those concerning the expected demographic changes and those relating to the trend in employment in the various regions.

Thus, the future pattern of transfers between regions depends very much on the population forecast for each region. On the one hand, changes in the labour force are a major factor determining the growth of employment and hence of the primary incomes underlying the interregional transfers via taxes and social contributions. On the other hand, population ageing has a considerable influence on interregional transfers via social benefits, and more particularly pensions and health care expenditure.

The projections are based on the population forecasts published in May 2008 by the Federal Planning Bureau and the Directorate General of Statistics and Economic Information of FPS Economy, SMEs, Self-employed and Energy. According to those forecasts, the 15-64 age group, namely the potential labour force which currently totals almost 7 million persons in Belgium, will increase by around 300,000 persons over the next fifteen years before declining during the seven years from 2023 by just over 70,000 persons.

However, there are considerable variations between the three regions in the forecasts for the population of working age. In the Flemish Region, the population of working age is set to continue growing somewhat in the coming years, though the trend will reverse from 2018, causing a decline in the size of this population group, restoring it to roughly its 2005 level by 2030. In the Walloon Region, the population of working age is projected to continue growing for a longer period since the trend is not expected to reverse until 2029. At the end of the projection period, this population group is likely to be 9 p.c. bigger than it was in 2005. The forecast for the Brussels-Capital Region is totally different. There, the population of working age is expected to grow steadily in the coming years, reaching a level almost 22 p.c. above its 2005 figure by 2030.

In 2030, the number of persons aged 65 and over is projected to be more than 50 p.c. above the 2005 figure in both the Walloon Region and the Flemish Region. Conversely, in the Brussels-Capital Region, population ageing is expected to be far less pronounced, although the over 65 age group is also likely to expand considerably in that region, too, namely by more or less a quarter during the period 2005-2030.

On the employment front, three scenarios are envisaged. The first is based on the assumption that the current divergences in employment rates between the regions

will persist. In this scenario, it is also assumed that the differences between unemployment rates and average amounts of unemployment benefit will be halved[1]. The second scenario is based on the assumption that employment rates in the three regions will converge, reaching 68.1 p.c. by 2030, the level presumed for the country as a whole in the baseline scenario of the Study Group on Ageing. It also assumes that unemployment rates and average amounts of unemployment benefit will converge in the various regions. The third scenario, which is a compromise between the other two, is based on the assumption that the current disparities in employment rates will be halved by 2030.

Finally, the projections are based on the assumption that the influence of the other factors will remain unchanged in the future. In practice, this means that the interregional transfers resulting from transfers paid by the government other than pensions, health care expenditure, unemployment benefits and child benefits, will remain constant as a percentage of GDP. It is also assumed that the small differences in average pensions per capita will persist at their latest recorded level, although they will probably also be affected by employment trends. These assumptions are justifiable since the influence of these other factors on interregional transfers is very weak overall.

Obviously, the projection results are merely a guide since they are inevitably based on a series of assumptions. However, such projections are very useful as they provide a clear illustration of the effect of the demographic outlook on interregional transfers, while highlighting the significance of the trend in employment in the various regions.

4.2 Projection results

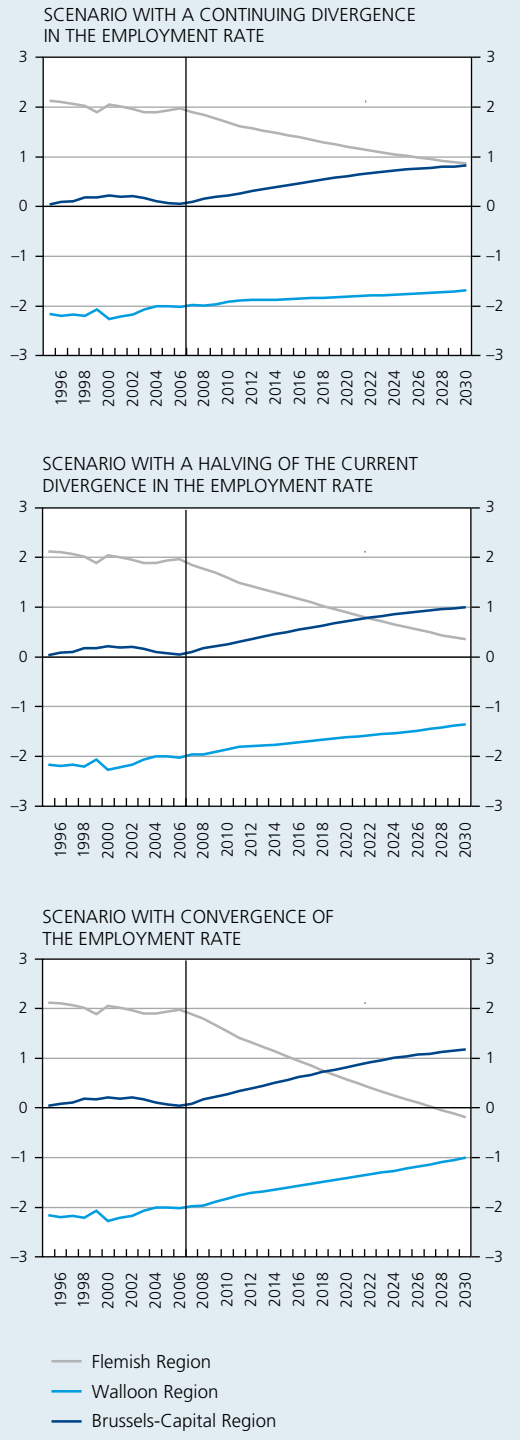
In the three scenarios envisaged, demography and the employment trend exert a considerable influence on the transfers.

In the scenario assuming persistence of the current divergences, in which the present labour market disparities are largely unchanged, the Flemish Region continues to make a net contribution to interregional transfers. However, that contribution falls from around 2 p.c. of GDP in 2005 to 0.8 p.c. of GDP in 2030. According to that scenario, the contribution of the Brussels-Capital Region to interregional transfers will increase considerably by 2030 from 0.1 to reach 0.7 p.c. of GDP. The Walloon Region is likely

(1) Considering the Study Group on Ageing's assumption that the unemployment rate will decline systematically in the future, it is unrealistic to assume that the current divergences in unemployment rates can persist.

CHART 12 PROJECTIONS OF INTERREGIONAL TRANSFERS IN BELGIUM UP TO 2030

(percentages of GDP)



Sources : ANMC / LCM (Association of Christian Mutual Societies) ; FPB ; FPS Economy, SMEs, Self-employed and Energy (DGSEI) ; FPS Finance ; NSDII ; NAI ; NEO ; Study Group on Ageing ; NBB.

to continue receiving interregional transfers, but they will decline from around 2 p.c. of GDP at present to 1.6 p.c. of GDP by the end of the projection period. These developments will be due mainly to the differential growth rates of primary incomes of households per capita in the three regions owing to divergent demographic trends. In 2030, as a result of those trends, the Flemish Region is expected to receive a transfer of 0.5 p.c. of GDP by way of pensions and health care, the main source being the Brussels-Capital Region.

In the convergence scenario, the changes are much more marked. The Flemish Region would thus switch from a situation in which it is a net contributor to interregional transfers, as it is at present, to become a net recipient in 2030. The interregional transfers destined for the Walloon Region would diminish significantly, dropping to around 0.9 p.c. of GDP. It is mainly the Brussels-Capital Region that would see a substantial increase in its contribution to interregional transfers in this scenario, since that contribution would rise from around 0.1 p.c. of GDP in 2005 to 1.1 p.c. of GDP in 2030. However, the conditions on which this last scenario is based, namely convergence of employment rates in the three regions, could not be met without a major intensification of the efforts to stimulate labour market participation and employment expansion in the Walloon Region and in the Brussels-Capital Region.

The scenario in which the current regional variations in employment rates are halved by 2030 occupies an intermediate position between the two more extreme scenarios. In this scenario, the Walloon Region would be the sole recipient of interregional transfers in 2030. The Flemish Region would still be a contributor, but to a much lesser extent than at present, while the Brussels-Capital Region would make the largest contribution to these transfers.

5. International comparison

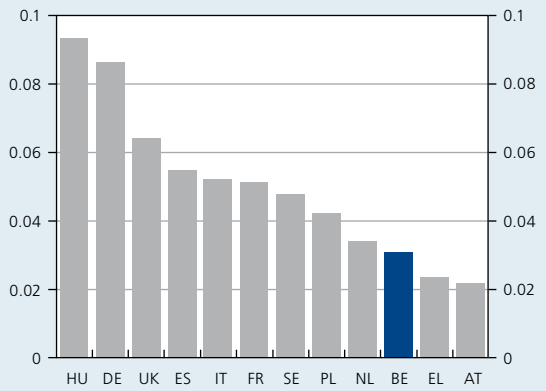
In order to assess the scale of the interregional transfers in Belgium effected via the government budget, it is useful to measure them against those prevailing in the other European Union countries. For that purpose, it is possible to use the household regional accounts compiled on the basis of the ESA 95 methodology: those accounts permit comparison of the scale of the interregional transfers between the government and households in general for those countries.

In the regional accounts, the Belgian regions correspond to the NUTS1 aggregation level. According to Eurostat, this is in principle a classification comprising regions which, on average, have a population of between 3 and 7 million. There is therefore no NUTS1 aggregate for relatively small countries. Another point worth noting is that for some countries, in contrast to Belgium, this classification does not correspond to any domestic administrative subdivision. That is the case, for example, in the Netherlands, Italy, Spain and France, where the NUTS1 aggregate is above the level of the "domestic" regions or provinces. Conversely, in Germany this level corresponds to that of the federal states (Länder).

The redistribution between regions thus defined in the various countries can be assessed via the dispersion of the ratio between disposable and primary incomes[1]. That ratio measures the size of the difference between the transfers paid to governments in the form of taxes on household incomes, social contributions and other current transfers, on the one hand, and the transfers paid by governments in the form of social benefits and other

CHART 13 RELATIVE SCALE OF INTERREGIONAL TRANSFERS IN THE EU MEMBER STATES

(coefficient of variation (1); based on the ratio between the disposable and primary incomes of households per region (2) in 2004 (3))



Source: Eurostat.

(1) The coefficient of variation is a statistical measure of the relative dispersion. It is calculated as the ratio of the standard deviation to the mean.

(2) The regions are defined at NUTS1 level; for Belgium, there are three regions.

(3) This is the latest year for which complete and final figures are available.

(1) The analysis of the differences in the ratio between disposable and primary incomes at NUTS1 region level in a given country was conducted for the EU Member States for which regional NUTS1 data were available. That is not true for small countries such as Luxembourg, Malta, Cyprus, Lithuania, Estonia, Latvia, Slovakia, the Czech Republic, Slovenia, Ireland and Denmark. Bulgaria and Romania are also absent from the data series as the latest figures do not relate to 2004. Finally, Finland and Portugal are also excluded from the analysis, because the NUTS1 classification in those countries creates regions which are too unequal: in Portugal, only the Azores and Madeira are distinguished from the mainland, while in Finland the only region considered separately by the NUTS1 classification is the Aaland islands (which account for only around 0.5 p.c. of the Finnish population).

current transfers, on the other hand. It is important to note that this analysis of redistribution via the government budget is less complete than the one in the preceding sections, since it concerns only the household account and disregards corporation tax, indirect taxes and health care expenditure.

It is clear from this analysis that the rate of regional redistribution via transfers between the government and households is relatively low overall in Belgium: measured both by the difference between the maximum and minimum values and by the coefficient of variation, the dispersion of the difference between disposable and primary incomes seems to be much smaller in Belgium than in most other EU Member States. The redistribution rate is therefore considerably higher in Hungary and in some neighbouring countries, such as Germany, the United Kingdom and France. In Germany, the ratio between disposable and primary incomes is just over 83 p.c. in Bavaria, Hesse and Baden-Wurttemberg, while that ratio is no less than 23 percentage points higher in Saxony and Saxony-Anhalt, Länder forming part of the former East Germany. In the United Kingdom, the difference between London and Wales is also over 20 percentage points. In contrast, in Belgium, the maximum difference – namely that between the Flemish Region and the Walloon Region – is only 6 percentage points.

6. Conclusion

This study by the Bank on interregional transfers and solidarity mechanisms via the government budget shows that the Flemish Region is currently a net contributor to interregional transfers, while the Walloon Region is a net recipient. The Brussels-Capital Region is also a net contributor for the moment, but only to a relatively small extent.

The interregional transfers are due largely to differences in each region's capability to contribute. Thus, the contribution capability of households in the Flemish Region is considerably greater than that of households in the other two regions in Belgium because primary household incomes per capita are higher in Flanders. Such differences are due in particular to the fact that the employment rate in the Flemish Region is considerably higher than in the other two regions. In the Brussels-Capital Region, the relatively low contribution capability of households is more than offset by the high contribution capability of enterprises which conduct their business there.

The interregional transfers effected via the government budget also originate partly from the regional breakdown of social benefits. That applies in particular to the transfers from the Flemish Region to the Walloon Region and the Brussels-Capital Region resulting from unemployment benefits. Conversely, in the past decade the number of pensioners has risen faster in the Flemish Region than in the other regions, which explains why this first region currently receives interregional transfers by way of pensions. In regard to health care expenditure, there are currently few transfers between the regions.

The projections show that demographic developments will have a considerable influence on interregional transfers. Here, the demographic trend is most favourable for the Brussels-Capital Region which has a relatively young population and which, according to the forecasts, should see a further significant expansion in its population of working age. In contrast, the Flemish Region faces the sharpest increase in the number of elderly persons, while its population of working age is already about to begin falling.

The influence of employment on the expected pattern of interregional transfers is also clear from the projections.

If the regions which currently have a relatively low employment rate, namely the Walloon Region and the Brussels-Capital Region, do not manage to catch up, and if the differences in employment rates between the various regions persist, the interregional transfers paid by the Flemish Region will decline but without disappearing altogether, while the Walloon Region will remain a net recipient. The Brussels-Capital Region would be an increasingly large net contributor to interregional transfers in this scenario.

Conversely, if the regions which have a relatively low employment rate do catch up, and if employment rates converge by 2030, the interregional transfer situation would be totally different from what it is today. In that scenario, although the Walloon Region would still be a net recipient of interregional transfers, the Flemish Region would also eventually become a net recipient. The Brussels-Capital Region would then be the only region contributing to interregional transfers and its net contribution would constantly increase.

Finally, an international comparison reveals that interregional transfers in Belgium are relatively small compared to transfers between regions in most of the other EU Member States considered.

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Summaries of articles

Macroeconomic and fiscal impact of the risk capital allowance

The study, produced in response to a request made by the federal government, examines the economic impact of the risk capital allowance. More particularly, it assesses the extent to which the objectives of the law of 22 June 2005 introducing an allowance for risk capital in the Belgian corporation tax system have been achieved. The study gives a brief presentation of the measures introduced by this law. It analyses the influence of these measures on the financial structure of corporations, their effect on the Belgian coordination centres – whose beneficial tax regime will soon be abolished – and their macroeconomic impact particularly investment and employment. Their budgetary implications on the basis of both macroeconomic and microeconomic data is then examined.

JEL Code: H25

Key words: corporation tax in Belgium, tax allowance, risk capital, coordination centres

Results of the Bank's survey of wage-setting in Belgian firms

The analysis presented is the outcome of a survey conducted by the Bank and forming the Belgian component of an initiative launched by the Wage Dynamics Network (WDN), in order to accompany the empirical analysis based on individual employees' wage data obtained, for instance, from administrative data banks. The survey contains questions on the wage-setting process, the existence of downward rigidity and the reasons for it, the reaction of firms to shocks, and the frequency and timing of wage and price adjustments.

The survey reveals that almost all firms in Belgium are covered by a sector agreement, and just over a quarter apply an additional collective wage agreement at the firm level. Such firm-level collective agreements are more common in large firms. The results also show that just over half of firms apply a wage indexation mechanism with a threshold index, while just under half operate in an environment where indexation takes place at fixed intervals. The latter system is more common in large firms, so that the weighted results indicate that this mechanism applies to the majority of employees. The level of wages of new employees depends mainly on what is specified in collective agreements and on the wage level of comparable employees in the firm. However, the wages which the firm actually pays to its staff may deviate from the pay scales specified in the sectoral agreements. In a significant number of firms, especially for white-collar workers and skilled staff, actual wages paid exceed the sectoral pay scales. Such a wage cushion, forming a buffer between the actual wages and the collectively agreed lower limits, is more common in large firms.

Overall, firms seldom respond to adverse shocks by cutting basic wages or using alternative ways of reducing labour costs per employee. Certainly in large firms, costs are reduced mainly via the employment channel, i.e. by reducing the number of primarily permanent staff, and to a lesser extent temporary workers. Reductions in non-wage costs are also important, while variable pay components are only cut in a small number of cases.

Only a quarter of firms state that they adjust their prices more than once a year. Time-dependent price adjustments, in which the time of the adjustment does not depend on economic conditions (as opposed to state-dependent adjustments), occur in 22 p.c. of firms and are noticeably common in the business service sector. Combined with the low frequency of price adjustments, this indicates price rigidity in that sector. The frequency and timing of wage adjustments are closely linked to the indexation mechanism applied. Most firms adjust their wages no more than once a year. Time-dependent wage adjustments in a specific month apply to 61 p.c. of firms, and – like price adjustments – wage adjustments are concentrated in the month of January. Another peak occurs in July, and there is some concentration at the beginning of the second and fourth quarters, particularly in the case of wage adjustments.

JEL Codes : D21, E31, J31

Key words : Survey, wages, prices, employment

Transfers between regions and solidarity mechanisms via the central government budget

The article examines transfers between regions via the central government budget, referring essentially to the regional household accounts published by the National Accounts Institute. It examines only the aspects concerning allocation between the regions of that part of government revenue and expenditure for which there is no direct counter-consideration.

The Flemish Region is currently a net contributor to transfers between regions via the central government budget, whereas the Walloon Region is a net recipient. The Brussels Capital Region also makes a net contribution, though only a small one.

These transfers between regions are due largely to variations in the contributions of each region to government revenues. In the case of households, the contribution of the Flemish Region exceeds that of the other two regions; for businesses, it is the Brussels Capital Region that makes the largest contribution.

In addition, these transfers originate from the regional allocation of social benefits. Thus, unemployment benefits entail transfers from the Flemish Region to the Walloon Region and the Brussels Capital Region. In contrast, transfers between the regions via pensions currently favour the Flemish Region. In regard to health care expenditure, there are hardly any transfers between the regions at present.

Projections also show the importance of both the expected demographic trends and labour market developments for the future pattern of transfers between regions. The influence of demographic trends is most favourable for the Brussels Capital Region and least favourable for the Flemish Region. This is likely to increase the net contribution from the former while the latter's net contribution will decline, even if the current labour market divergences largely persist in the future. In contrast, in the event of full convergence of employment levels, the inter-regional transfers paid by the Flemish Region would actually disappear altogether, and the Brussels Capital Region would become the sole net contributor, though in that case the inter-regional transfers received by the Walloon Region would decline sharply.

Finally, international comparison shows that transfers between regions are relatively small in Belgium, compared to what is seen in other EU Member States.

JEL Codes: H0, H1, H2, H5, H7, J1

Key words: regions, transfers, solidarity mechanisms

The incomes and financing balance of individuals and companies

The article begins by establishing that the share of wages in GDP has declined quite sharply in Belgium over the past five years. The fall in the wage share in 2003-2005 was due partly to the deteriorating economic conditions at the beginning of this century. It can also be seen as a continuation of the decline which started in the early 1980s, attributable to structural developments such as globalisation, technological progress and the growing importance of the services sector.

However, the downward trend in the total disposable income of individuals as a percentage of GDP is due mainly to the reduction in their net interest income, which is in turn attributable to falling interest rates. In absolute terms, however, the disposable income of individuals has risen, even if inflation is taken into account. The main effect of the reduction in the gross disposable income of individuals in relation to GDP has been to cut the savings ratio, as consumption expenditure has only fallen slightly as a percentage of GDP. Moreover, since 2004 individuals' investment spending has surged, reducing their financing balance to less than 1 p.c. of GDP.

The primary counterpart of the recent contraction of the wage share has been the strong rise in the gross operating surplus of companies. On the other hand, companies have also paid more taxes on income and wealth, made higher net dividend payments to other sectors, and invested more in fixed assets. Nonetheless, the financing balance of companies has risen steadily, reaching an average of 2.4 p.c. of GDP in the past three years, so that they have been able to move gradually towards financing more of their investment out of internal resources, thus further consolidating their balance sheets.

JEL Codes: E24, E25, J3

Key words: wage share, operating surplus, disposable income, financing balance

Abstracts of the working papers series

133. Short-term forecasting of GDP using large monthly datasets – A pseudo real-time forecast evaluation exercise, by K. Barhoumi, S. Benk, R. Cristadoro, A. Den Reijer, A. Jakaitiene, P. Jelonek, A. Rua, G. Rünstler, K. Ruth, C. Van Nieuwenhuyze, June 2008

The paper evaluates different models for the short-term forecasting of real GDP growth in ten selected European countries and the euro area as a whole. Purely quarterly models are compared with models designed to exploit early releases of monthly indicators for the nowcast and forecast of quarterly GDP growth. Amongst the latter, the authors consider small bridge equations and forecast equations in which the bridging between monthly and quarterly data is achieved through a regression on factors extracted from large monthly datasets. The forecasting exercise is performed in a simulated real-time context, which takes account of publication lags in the individual series. In general, models that exploit monthly information seems to outperform models that use purely quarterly data and, amongst the former, factor models perform best.

134. Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels – Report 2006, by Saskia Vennix, June 2008

The National Bank of Belgium publishes an annual update of the study of the economic importance of the Flemish maritime ports – Antwerp, Ghent, Ostend and Zeebrugge – and the Liège port complex. In this edition, a chapter on the port of Brussels is added for the first time.

Each port's contribution to the national economy is estimated on the basis of the analysis of its economic, social and financial situation over the period from 2001 to 2006. The three variables concerned in the main developments are value added, employment and investment. This study also highlights the port sector's indirect effects in terms of value added and employment. The social balance sheet is summarised in two sections: one covering the Flemish maritime ports and the other the Liège port complex. The analysis of the financial results is based on the study of the return on equity, liquidity and solvency ratios, and a synthetic indicator of financial health.

135. Imperfect exchange rate pass-through: the role of distribution services and variable demand elasticity, by Ph. Jeanfils, August 2008

The paper examines which mechanisms are likely to dampen the price pressures in the wake of exchange rate movements. In addition to nominal frictions frequently used in sticky-price models, it jointly introduces two features that have hitherto been considered separately in the existing literature, i.e. a variable demand elasticity à la Kimball (1995) and distribution services in the form of non-traded goods as in Corsetti and Dedola (2005). The paper explores the respective role of each feature and assesses the quantitative importance of these theoretical explanations for the exchange rate pass-through to a broad range of prices as well as for the real exchange rate and for the trade balance. Segmentation of national markets through distribution services and imperfect competition with variable mark-ups are important for accounting for the observed stability of import prices "at the border". Hence, these mechanisms help to explain the observed stability of import prices in local currency with realistic durations of price contracts.

136. Multivariate structural time series models with dual cycles. Implications for measurement of output gap and potential growth, by Ph. Moës, August 2008

Structural time series models applied to the factor inputs of a production function often lead to small output gaps and consequently to erratic measures of potential growth. The author introduces a dual cycle model which is an extension to the multivariate trend plus cycle model with phase shifts à la Rünstler. The dual cycle model is a combination of two types of models: the trend plus cycle model and the cyclical trend model, where the cycle appears in the growth rate of a variable. This property enables hysteresis to be taken into account. Hysteresis is likely to show up in unemployment but it can also affect the capital stock due to the existence of long investment cycles. In the proposed model, hysteresis may affect all the factor inputs of the production function and phase shifts are extended to the dual cycles. Genuine measures of potential growth can be computed that are hysteresis-free and less prone to volatility. A complementary measure of the output gap that takes hysteresis into account can be derived.

137. Agency problems in structured finance – a case study of European CLOs, by J. Keller, August 2008

The paper is a case study that focuses on possible incentive problems in the management of Collateralized Loan Obligations (CLOs). CLOs are the most important type of special purpose vehicles in the leveraged loan market, and their managers appear to have a considerable impact on performance. Specifically, the article identifies the potential incentive, or agency, problems facing CLO managers, and the mechanisms that have been put in place to mitigate these problems. These mechanisms, including structural provisions, financial incentives and reputational concerns, should work fairly effectively. However, the analysis reveals some gaps which may allow managers to engage in certain adverse strategies. Specifically, the article raises concerns about the reliability of constraints on overall portfolio risk, the so-called portfolio tests, and about the effectiveness of reputation as a disciplining device. Both concerns are related to the benign market conditions until the summer of 2007 which – at least until now – prevented, any "stress-testing" of CLOs and differentiation between managers. The paper analyzes also evidence on CLO transactions in which managers buy/hold a portion of the equity tranche. Although retention of the equity tranche is only one of several incentive aligning mechanisms and not a general requirement, the analysis reveals that factors related to the agency problems can explain why in certain cases managers buy/hold a portion of the equity tranche. Specifically, first time managers and managers of a risky transaction buy/hold more frequently a portion of the equity tranche. Furthermore, buy/hold patterns change over time, which suggest that competitive effects and market trends play a role in the question whether to retain a portion of the equity tranche.

Conventional signs

–	the datum does not exist or is meaningless
e	estimate by the Bank
n.	not available
p.c.	per cent
p.m.	pro memoria

List of abbreviations

Countries

BE	Belgium
DE	Germany
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LU	Luxembourg
MT	Malta
NL	Netherlands
AT	Austria
PT	Portugal
SI	Slovenia
FI	Finland
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
EE	Estonia
LV	Latvia
LT	Lithuania
HU	Hungaria
PL	Poland
RO	Romania
SK	Slovakia
SE	Sweden
UK	United Kingdom
EA13	Eurozone excluding Cyprus and Malta
EU15	European Union excluding the countries which joined in 2004 and 2007
EU25	European Union excluding Bulgaria and Romania

Others

Abafim	Administratie Budgettering, Accounting and Financial Management of the ex-Ministry of the Flemish Community
ANMC/LCM	Association of Christian Mutual Societies
BNRC	Belgian National Railway Company
CBFA	Commissie voor het Bank- Financie- en Assurantiewezen, Commission bancaire, financière et des assurances (Banking, Finance and Insurance Commission)
DGSIE	Directorate-general Statistic and Economic Information Belgium
EC	European Commission
ECB	European Central Bank
ESA	European System of Accounts
ESCB	European System of Central Banks
EU	European Union
FPB	Federal Planning Bureau
FPS	Federal Public Service
GDP	Gross Domestic Product
HICP	Harmonised Index of Consumer Prices
ICT	Information and Communication Technology
IMF	International Monetary Fund
IPN	Inflation Persistence Network
IWFP	International Wage Flexibility Project
NAI	National Accounts Institute
NBB	National Bank of Belgium
NEO	National Employment Office
NPI	Non-profit institution
NSSO	National Social Security Office
NSDII	National Sickness and Disability Insurance Institute
NUTS	Common Classification of Territorial Units for Statistics
OECD	Organisation for Economic Cooperation and Development
R&D	Research and Development
SME	Small and Medium-sized Enterprises
UE	European Union
VAT	Value Added Tax
WDN	Wage Dynamics Network

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