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# TAXATION PAPERS



## Corporate income tax and the taxation of income from capital



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# TAXATION PAPERS

## **Corporate income tax and the taxation of income from capital:**

Some evidence from the past reforms and the present debate on corporate income taxation in Belgium.

by

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Working paper n°6 December 2004

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## Short Summary

Any assessment of the effects of a tax reform has to be based on indicators of effective taxation. Various indicators have been developed to measure the effective taxation of income from capital. This paper briefly reviews their properties, before turning to an evaluation of the effects of the corporate income tax reform in Belgium in the nineties. Our analysis concludes that the tax reform had some success in raising more revenue in a more neutral way by repealing tax expenditures provisions so that the gap between the nominal and effective corporate tax rate narrowed. On the methodological side, our analysis concludes that there is no ideal effective tax rate: implicit tax rates based on macro-economic data's and marginal and average effective tax rates are complementary indicators and should be used jointly to assess the effects of tax reforms.

Keywords: Tax policy, effective tax rates, implicit tax rates

*JEL* Classification: H20, H25, H30,

## TABLE OF CONTENTS

<b>INTRODUCTION</b> .....	<b>6</b>
<b>1. METHODOLOGY</b> .....	<b>7</b>
1.1 WHAT SHOULD BE AN IDEAL EFFECTIVE TAX RATE? .....	7
1.2 IMPLICIT TAX RATES.....	7
1.3 MARGINAL EFFECTIVE TAX WEDGE.....	8
1.31 <i>The basic framework</i> .....	8
1.32 <i>Our own methodology</i> .....	9
1.4 AVERAGE EFFECTIVE TAX RATE .....	11
1.5 DO IMPLICIT AND EFFECTIVE TAX RATES MEET THE PROPERTIES OF AN IDEAL ETR ? .....	14
<b>2. CORPORATE INCOME TAXATION IN BELGIUM: MAIN FEATURES AND REFORMS</b> .....	<b>15</b>
<b>3. THE EFFECTS OF THE CORPORATE INCOME TAX REFORM IN BELGIUM</b> .....	<b>17</b>
3.1 IMPLICIT TAX RATES.....	17
3.2 MARGINAL EFFECTIVE TAX WEDGE.....	18
3.3 AVERAGE EFFECTIVE TAX RATES .....	23
3.4 THE UNTOLD PART OF THE STORY .....	25
<b>4. SUMMARY AND CONCLUSIONS</b> .....	<b>26</b>
<b>REFERENCES</b> .....	<b>27</b>

## Introduction

There is a broad consensus that the nominal corporate tax rate is a poor guide to discuss the efficiency of the tax system and of various policy proposals. The consensus is less general as to what should be the relevant indicator. The indicators to be found on the literature can be split in two broad categories: a first set of indicators is based on statistical data (national accounts, tax statistics, accounting data) <sup>(2)</sup> while a second set of indicators is derived from the theory of investment decisions. We refer to the well-known KING-FULLERTON methodology and its recent extension by DEVEREUX and GRIFFITH to discrete investment choices. A large number of studies have been using this methodology to compare effective tax rates across countries and over time and to assess the non-neutrality of taxation by comparing effective tax rates for investments in various assets, by different types of investors or according to the way they are financed (by new equity, debt or retained earnings) <sup>(3)</sup>. Section 1 of the paper sets out criteria for an ideal effective rate. We next develop four main indicators: (a) an implicit tax rate based on the national accounts, (b) an implicit tax rate based on tax statistics; (c) the King-Fullerton tax wedge and (d) the average effective tax rate derived from the DEVEREUX&GRIFFITH methodology and we assess their properties according to the initial criteria for an ideal effective tax rate.

Section 2 briefly describes the main features of corporate income taxation in Belgium and summarises the reforms that were introduced in the early nineties. Corporate income tax was then gradually reformed. The main concerns were the low level of revenue raised despite the relatively high nominal corporate tax rate and a significant number of non-neutralities in the corporate income tax system. The reform aimed at creating a more neutral tax system by broadening the tax base, at least at the earlier stages of the reform, by lowering the nominal tax rate. Section 2 also describes the main provisions of the recent tax reform that came into force in 2003. Section 3 uses the four indicators developed in Section 1 to evaluate the effects of corporate income tax reform. We focus on the tax reform introduced in the early nineties. The main reason for this is that it is not yet possible to use both implicit and effective tax rates to illustrate the effect of the 2003 tax reform. We however highlight some of the effects of the 2003 tax reform on marginal effective tax rates. Section 4 draws conclusions.

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<sup>(2)</sup> See for example BUIJINK (1999), OECD (2001b)

<sup>(3)</sup> International comparisons based on this type of effective tax rates can be found in O.E.C.D (1991), the “Ruding Report”, and the recent E.C study on company taxation. CHENELLS and GRIFFITH (1997) use both methods to compare the taxation of profits in EU countries. BOVENBERG (1998) uses micro-economic indicators to assess the effects of the Dutch tax reform on the taxation of income from capital. VALENDUC (1999) uses both approaches to assess the effects of corporate income tax reform in Belgium.

# 1. Methodology

## 1.1 What should be an ideal effective tax rate?

It is widely considered that the nominal corporate tax rate is a poor guide to assess the effective taxation. Various indicators have been developed to evaluate effective taxation on corporate profits and more broadly on income from capital. Each type of indicator has advantages and disadvantages and any assessment has to be based on clear criteria.

According to GORDON e.a. (2002), we consider that an ideal summary measure should meet four main properties.

- (a) It should be forward-looking.
- (b) It should reflect all the features of the tax system.
- (c) It should reflect, but not be biased by, income shifting and arbitrage.
- (d) It should not be biased by the business cycle conditions in the year of calculation.

We could add a fifth one: it should not be biased by enforcement effort.

This definition will now be used to discuss the merits and drawbacks of various approaches. We use the term “implicit tax rates” for macro-economic indicators that are implicitly derived from national accounts and other macro-economic data, while we use the term “effective tax rates”, for micro-economic measures of effective taxation that are explicitly computed by using parameters taken from the tax system.

## 1.2 Implicit tax rates

A first way to assess the effective taxation of corporate income is to compute implicit tax rates based on national accounts. Such implicit tax rates are usually constructed by dividing corporate income tax revenue by corporate profits before tax or by the gross (or net) operating surplus of incorporated enterprises. We have chosen corporate profits before tax as the denominator, to ensure better comparability with the nominal corporate income tax rates. We thus define

$$[1] \quad t_{i1} = CT / CPBT$$

with  $t_{i1}$  = implicit tax rate

CT = Revenue from corporate income tax

CPBT= corporate profits before tax.

As any macro-economic indicator, such an implicit tax rate is backward-looking. Another problem we face with such implicit tax rates is the fact that they are sensitive to the business cycle. Companies making losses do not pay any corporate income tax, but the losses incurred reduce the denominator of “ $t_{i1}$ ”. The higher the amount of losses would be, the higher would be the implicit tax rate, without any change in tax policy.

Defining another implicit tax rate « $t_{i2}$ » based on statistical data provided by the tax administration can circumvent the sensitivity of « $t_{i1}$ » to the business cycle. This measure relates only to companies with a positive tax base. <sup>(4)</sup>. It also differs from “ $t_{i1}$ ” in the definition of profits: the amount of tax effectively payable by companies is divided by a concept of profit that disregards the effect of the deductions considered to be tax expenditures.

The aim is therefore to relate the effective tax liability to a concept of profits that is as close as possible to a benchmark tax system without any tax expenditures.

$$[2] \quad T_{i2} = (T - NWT) / (NTB + D_{te} - DE)$$

The **numerator** corresponds to the tax effectively assessed, that is the total tax (T) less notional withholding taxes (NWT). It takes into account the effect of reduced rates for SMEs.

Determining the **denominator** is not so straightforward. To do so, we work backwards starting from the net tax base (NTB) to what should be the tax base in a «benchmark system» without tax expenditures. Deductions resulting from tax expenditures ( $D_{te}$ ) are added to the net tax base while disallowed expenses have to be taken off from NTB. In contrast, any «benchmark system» should eliminate double taxation and allow the deduction of losses carried forward so that these two categories of deductions have not to be added to the net tax base to compute the implicit tax rate.

### 1.3 Marginal effective tax wedge

#### 1.31 The basic framework

Marginal effective tax wedges are computed according to the well-known KING-FULLERTON methodology <sup>(5)</sup>. The marginal effective tax wedge is defined by the difference between the gross real rate of return ( $p$ ) of a typical marginal investment and the corresponding net real rate of return ( $s$ ).

$$[3] \quad p = [(1-a)(\rho + d - \pi) / (1-t_s)] - d$$

and the net real rate of return is defined by

$$[4] \quad S = (1-m_2) i - \pi$$

with  $a$  = net present value of tax allowances, investment incentives and grants

$\rho$  = discount rate

$d$  = economic depreciation

$\pi$  = rate of inflation

$t_s$  = corporate income tax rate

$m_2$  = personal income tax rate on interest

$i$  = long term interest rate

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<sup>(4)</sup> These include companies that have made a profit but also loss-making companies with a positive tax base, for instance because of “disallowed expenses” exceeding the negative book result.

<sup>(5)</sup> Cf. KING M.A and FULLERTON D. (1984).



It has been objected that the original methodology was a closed economy one. With open economies and free movements of capital, the full tax wedge can be split in two parts

$$[5] \quad t_{wi} = p - r$$

$$[6] \quad t_{ws} = r - s$$

with  $r$  = world real interest rate.

According to this model, investors face the world interest rate “ $r$ ”. Corporate income taxes raised in a given jurisdiction will result in  $p > r$ , while the taxes raised on savings will result in  $s < r$  without any effect on “ $r$ ” and “ $p$ ”. The rationale behind this model is that when domestic saving is not sufficient, investors can borrow or raise equity in international markets.

### 1.32 *Our own methodology*

The model used in this paper follows neither the “open economy” model nor the “closed economy” one. We consider that the inclusion of personal taxation on income from capital depends on how the relevant enterprises can have access to the capital market. We consider 3 different cases.

- (a) small and medium enterprises,
- (b) a parent-subsidiary approach, without a Belgian co-ordination centre,
- (c) a parent-subsidiary approach, with a Belgian co-ordination centre.

#### **A. Small and medium enterprises**

We consider that small and medium enterprises have no access to the world capital market. Many of them are “closed companies” with a limited number of shareholders who are in many cases actively involved in the business of the company and want to maintain control over it. This explains why such enterprises do not raise equity outside this limited number of shareholders. In such a situation, investors, though price-takers, face the domestic net interest rate and not the world gross interest rate. We therefore include personal taxation in the marginal tax wedge, which is defined by the difference between  $(p)$  and  $(s)$ . The marginal shareholder is subject to personal income tax in Belgium, so that [4] holds.

Investment can be financed by new equity, debt or retained profits. According to the Belgian tax system, dividends are subject to personal income taxation that consists in a final withholding tax “ $m_1$ ” with no tax credit (classical system) and capital gains on shares are tax-free. We thus define

$$[7] \quad \rho_1 = i (1 - m_2) / (1 - m_1)$$

for investments financed by new equity,

$$[8] \quad \rho_2 = (1 - t_s) i$$

for investments financed by debt <sup>(6)</sup>

$$[9] \quad \rho_3 = i(1-m_2)$$

for investments financed by retained profits.

The parameter “a” includes depreciation allowances (double declining balance with a switch to linear depreciation), the investment allowance and the “new equity” tax credit for investment financed by new equity for the period 1996-2001. We do not take into account regional grants.

## B. Large companies

Cases (b) and (c) consider large companies. We use a parent-subsidiary approach. The parent, who faces the world interest rate, finances investments made by the subsidiary. The taxation of the ultimate shareholder has no effect on the gross real rate of return “p” but the taxation of the parent has. We in fact rewrite [5] and [6] and compute the marginal tax wedge “tw” as the difference between the gross real rate of return at the level of the subsidiary ( $p_s$ ) and the net real rate of return at the level of the parent ( $s_p$ ).

$$[10] \quad tw = p_s - s_p$$

with

$$[11] \quad s_p = (1-t_s) i - \pi$$

We also rewrite the equations [8] to [10] to take into account the participation exemption system: dividends received from the subsidiary are tax-exempt up to a percentage “e” <sup>(7)</sup> and capital gains are not subject to tax. We thus have

$$[12] \quad \rho_1 = i(1-t_s) / (1 - t_s(1-e))$$

for investments financed by new equity,

$$[13] \quad \rho_2 = \rho_3 = (1-t_s) i$$

for investments financed by debt or by retained profits.

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<sup>(6)</sup> Any interest paid by a company for loans provided by shareholders who are managers of the company is reclassified as a dividend, so that in such a case formula [8] applies.

<sup>(7)</sup> 95% since 1991.

### C. Belgian co-ordination centres

Belgian co-ordination centres enjoyed a preferential tax regime until 31st December 2002. They were subject to corporate income tax on a cost-plus basis, but interest paid was not included in the base of the cost-plus. Combined with the fact that the tax base did not include interest received and profits (distributed or retained), this means that co-ordination centres were not subject to tax on income from investments. Despite this, the participation exemption system still applied and the Belgian parent was entitled to a 95% exemption of dividends received from a co-ordination centre and to a full exemption of capital gains on the corresponding participation.

This preferential tax regime is “grandfathered” so that it still applies to co-ordination centres that got their agreement under this regime. The new tax regime has been in force since 1<sup>st</sup> January 2003. The tax base is still being calculated by a cost-plus method but any expense or operating cost is included in the base of the cost-plus.

In this third case, we compute METW under the “old regime” and assume that the subsidiary is financed by debt issued by the co-ordination centre, which is financed by new equity or debt provided by the parent, or by retained earnings. We thus have

$$[14] \quad \rho_1 = i (1-t_s)^2 / (1 - t_s(1-e) + m_3)$$

when the co-ordination centre is financed by new equity from the parent,

$$[15] \quad \rho_2 = (1-t_s)^2 i / (1 - t_s + m_4)$$

when the co-ordination centre is financed by debt issued by the parent,

$$[16] \quad \rho_3 = (1-t_s)^2 i$$

when the co-ordination centre is financed by retained profits.

With  $m_3$  = rate of the notional withholding tax on dividends.

$m_4$  = rate of the notional withholding tax on interests.

#### 1.4 Average effective tax rate

The KING-FULLERTON methodology only considers marginal investments (those that just earn the minimum required rate of return after tax) and continuous choice. The average effective tax rate methodology (AETR) has been developed by DEVEREUX and GRIFFITH <sup>(8)</sup> to deal with the taxation of discrete investment choices and to measure the effect of taxes on investment projects that earn some economic rent. According to this methodology, we derived the AETR from the

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<sup>(8)</sup> See CHENNELS and GRIFFITH (1997) for the first developments of the methodology. A final version has been set out in DEVEREUX and GRIFFITH (1998b)

difference between the revenue of an investment having a gross real rate of return “p” in the absence of taxation ( $R^*$ ) and the revenue of the same investment with taxation ( $R_t$ ) using the following definition.

$$[17] \quad AETR = (R^* - R_t) / [p/(1+r)]$$

with  $r$  = real interest rate.

The revenue before tax is defined by

$$[18] \quad R^* = -1 + \frac{1}{1+i} \{(1+\pi)(p+d) + (1+\pi)(1-d)\} \frac{p-r}{1+r}$$

The post-tax revenue of the investment can be split in two parts: the economic rent of an investment financed by retained profits and the additional cost of raising external finance ( $K$ )

$$[19] \quad R_t = -\gamma(1-A) + \frac{\gamma}{1+\rho} \{(1+\pi)(p+d)(1-ts) + (1+\pi)(1-d)(1-A)\} + K$$

which results in

$$[20] \quad R_t = \frac{\gamma}{1+\rho} \{(p+d)(1+\pi)(1-ts) - (1-A)[(1+\rho) - (1-d)(1+\pi)]\} + K$$

with  $\gamma$  = tax discrimination variable, which reflects the additional cost of paying dividends,

$\rho$  = discount rate, equals to interest income net of tax,

In the Belgian tax system, capital gains are not subject to tax so that, in the case of an investment financed by a shareholder subject to personal income tax,

$$[21] \quad \gamma = (1-m_1)$$

and

$$[22] \quad \rho = (1-m_2)$$

According to DEVREUX and GRIFFITH (1998b), the additional cost of raising external finance is given by

$$[23] \quad K1 = -(1-A) \frac{\rho(1-\gamma)}{1+\rho}$$

for an investment financed by new equity and by

$$[24] \quad K2 = \frac{\gamma(1-A)}{1+\rho} \{\rho - (i(1-ts))\}$$

for an investment financed by debt.

We use the same approach as the one used for marginal effective tax rates and consider the same three cases: small and medium enterprises, a parent-subsidiary approach for large companies and the same case with the inclusion of a Belgian co-ordination centre (preferential tax regime in force until 31<sup>st</sup> December 2002).

In the parent-subsidiary case, [21] to [22] have to be changed to take into account that the shareholder is subject to corporate income tax. We then have

$$[25] \quad \gamma = 1 - t_s(1-e)$$

$$[26] \quad \rho = (1-t_s)$$

which substitutes to the former values of  $\gamma$  and  $\rho$  in [23] and [24].

The parent-subsidiary case with the inclusion of the co-ordination centre is more complex, since two financial constraints have to be taken into account to generate the additional cost of external finance  $K$ . The subsidiary is financed by debt issued by the co-ordination centre, which is reflected in  $K_a$ , and the parent finances it by new equity, debt or retained profits, which is reflected in  $K_b$ .

Formulas [23] and [24] have to be split in two parts, as set out in Table 1. They take into account the following characteristics of the Belgian tax system.

- Any financial income received or capital gains realised by a coordination centre is tax-exempt, so that for the computation of  $K_a$ ,  $\gamma = 1$  and  $\rho = i$ .
- Dividends paid by the co-ordination centre are not subject to tax while interests paid do not generate any tax benefit.
- Interests and dividends received by the parent enjoyed (until 1991) a notional withholding tax when the co-ordination centre used the funds provided by the parent to finance a non-financial investment in a subsidiary located in Belgium.

**Table 1**  
**Additional cost of raising external finance**  
**Investment financed with the use of a co-ordination centre.**

	Investment by the subsidiary, financed by the co-ordination centre (in any case, debt)	Investment by the co-ordination centre, financed by the parent
	$K_a$	$K_b$
New equity	$\frac{(1-A)}{(1+\rho)} ts.i$	$-\frac{(1-A)}{(1+\rho)} [(ts(1-e) + m3)(1-ts)i]$
Debt	$\frac{(1-A)}{(1+\rho)} ts.i$	$\frac{(1-A)}{(1+\rho)} [(1-ts(1-e) + m3)(m4-ts)]$
Retained profits	$\frac{(1-A)}{(1+\rho)} ts.i$	0

## 1.5 Do implicit and effective tax rates meet the properties of an ideal ETR ?

Let us turn back to the five key properties an ideal effective tax rate should meet and confront them with the four indicators described in this section.

**Table 2**  
**Various indicators confronted with the four key properties of an ideal ETR**

Key properties	$T_{i1}$	$T_{i2}$	KF	AETR
(a) The indicator is forward -looking	NO	NO	YES	YES
(b) It reflects all the features of the tax system	YES	YES	NO	NO
(c) Reflect, but not biased by, income shifting and arbitrage	YES	YES	Part	Part
(d) Not biased by the business cycle	NO	YES	YES	YES
(e) It reflects enforcement effort	YES	YES	NO	NO

The implicit tax rate “ $t_{i1}$ ” does not satisfy (a) and (d), while we can consider that properties (b), (c) and (e) are met. We overcome the problem of the sensitivity to the business cycle by defining an implicit tax rate “ $t_{i2}$ ” based on data from tax statistics and excluding companies making losses, so that (b) holds. Despite these improvements, implicit tax rates are still backward-looking. Implicit tax rates have however some merits: they take into account the effects of any measure taken in company taxation, including the behavioural responses of the taxpayers and tax planning and they reflect enforcement effort. Another advantage of implicit tax rates is that they can be included in a more general framework including taxation of labour, income from capital and consumption <sup>(9)</sup>.

The “effective tax rate methodology” (King-Fullerton, combined with AETR from DEVEREUX&GRIFFITH) enables us to discuss the effect of tax policy for discrete investment choices as well as for continuous ones. Marginal and effective tax rates have common interesting properties and some drawbacks. They are forward-looking indicators – (a) holds - and are therefore appropriate to assess the efficiency effects of the tax system and of various policy proposals. They are not biased by the business cycle, so that (d) also holds.

However, it is not possible to introduce in their highly formalised framework all the features of the domestic and international corporate income tax system, so that (b) does not hold and that (c) only partly holds. Tax planning and preferential tax regimes are good examples of this drawback. Companies can use the tax treaty network to find the “less taxed way” but it is very difficult, even impossible, to include in the METR-AETR methodology the wide choice they have and the possible effect of the anti-abuse rules prevailing in various countries. Some preferential tax regimes can be included <sup>(10)</sup> but it is impossible for example to take into account the effect of rulings, which are in some countries a major element of tax policy for attracting investment from abroad. Marginal and effective tax rates do not reflect enforcement efforts, since it is assumed that any tax has been paid.

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<sup>(9)</sup> Extensive work has been done in this area over the past few years, mainly at the EU level. The original method used by MENDOZA e.a. (1994) has been revisited (See for example VALENDUC (1996) and (1998) , OECD (2001b)), so the initially rough methodology has been improved. Implicit tax rates are now widely used, mainly by international organisations involved in tax policy analysis. The European Commission uses implicit tax rates in the annual publication *structure of taxation systems*. They are also widely used by the OECD.

<sup>(10)</sup> See below the case of the Belgian Co-ordination centres. See also HESPEL and MIGNOLET (2000).

The outcome of this assessment on merits and drawbacks of various indicators is that there is no ideal effective tax rate. Any of the indicators described above has merits and drawbacks. Implicit and effective tax rates are in fact complementary. That's why we will use three of them ( $i_{12}$ , METW, AETR) to analyse the effects of the corporate income tax reform in Belgium during the nineties.

## 2. Corporate income taxation in Belgium: main features and reforms

Corporate income taxation is often complex. In Belgium, accounting profit is the starting point for the definition of the taxable income. Disallowed expenses are added to distributed and retained profits to determine the gross taxable income (GTI). GTI is then split in three parts according to the source country (domestic income, foreign source income from a branch located in a country with or without a tax treaty with Belgium). The main tax expenditures are the preferential tax regimes (co-ordination centres) and the investment allowance. Dividends received are included in GTI but capital gains on shares are not. Dividends can however qualify for the "participation exemption" and in such cases 95% of the dividend received is deductible from GTI. Losses carried forward are also deducted from GTI. Net taxable income is subject to corporate income tax at the rate of 39% with a crisis surcharge of 3%, so that the nominal tax rate adds up to 40.17%. Small businesses are entitled to reduced rates (for example, 28% for the first bracket of 25 000 EUR) if they meet several criteria <sup>(11)</sup>. New equity raised by small and medium enterprises may qualify for a tax credit.

The corporate income tax system was gradually reformed in the early nineties. The reform was not implemented in a single step, but by successive changes to the main tax expenditures provisions and preferential regimes of the corporate income tax system. These successive changes were not announced as parts of an integrated plan.

The main concern was domestic. During the eighties, the effective taxation of companies lowered while the nominal corporate income tax remained stable. The main reasons for the increasing gap between effective taxation and the nominal tax rate were the expansion of tax expenditures and the poor targeting of some basic provisions of the corporate income tax system, mainly the participation exemption and the deduction for previous losses <sup>(12)</sup>. The drawbacks of these tax expenditures and preferential tax regimes were a large departure from neutral taxation and efficiency losses. There was also a strong concern about the trend of corporate income tax revenue, which did not fit with the trend of corporate profits. During the strong recovery that took place at the end of the eighties, revenue from corporate income tax as a % of GDP remained roughly stable, despite the upward trend of corporate profits expressed as a % of GDP.

Table 3 summarises the main features of the pre-reform corporate income tax system and the corresponding changes introduced in the early nineties.

It is clear from this description that, apart from the budgetary impact, the fundamental orientation of such a reform was to ensure greater neutrality. The repealing of preferential tax regimes and other tax expenditures should result in a more neutral corporate income tax ("level playing field"). This should reduce efficiency losses and create a net welfare gain. The changes made to the participation exemption system enable progress to capital import neutrality while substituting effective

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<sup>(11)</sup> The main criteria are the following: not being 50% or more owned by another company; not being part of a group using the services of a co-ordination centre and paying at least one manager at least BEF 1 000 000 (approximately 25 000 EUR) or more out of the company's earnings.

<sup>(12)</sup> Cf. CONSEIL SUPERIEUR DES FINANCES (1991).

withholding tax paid for a fixed notional tax credit ensures capital export neutrality for the taxation of interest received from abroad.

*Table 3*  
*Corporate income tax reforms in the early nineties*

Provisions in force before reform	Changes introduced
The participation exemption system was generous: dividends received were deducted from the tax base without any upstream taxation requirement	Upstream taxation requirement, anti-abuse rules (1990, 1991, 1996)
Interest received from abroad qualified for a notional withholding tax of 15/85 of border income, whatever the rate of tax withheld at source	Replaced by a credit for foreign withholding tax effectively paid (1991)
Profits of the Co-ordination centres were largely tax-exempt	The preferential tax regime of the Co-ordination centres is still in force,
Resident companies providing new equity or lending were entitled to a notional tax credit	Put in a standstill, and gradually repealed since 1990-91
Investment allowance, with a basic rate of 13% and higher rates for investments in R-D, environment-friendly or energy-saving investments.	Now only applies to small businesses with a basic rate of 4% and higher rates for investments in R-D, environment-friendly or energy-saving investments (1992)
A large number of preferential tax regimes and tax expenditures were in force <sup>(13)</sup>	Most preferential tax regimes and tax expenditures were rolled back or put in standstill (1990).
A large number of unincorporated enterprises incorporated in order to be entitled to reduced corporate tax rates. Moreover, the transition from personal income tax to corporate income tax also generated a wide tax relief <sup>(14)</sup>	Reduced corporate tax rates for small businesses have not been repealed, but the conditions to be met were strengthened (1993). The transition from unincorporated to incorporated business was made less generous (1991).
	Disallowed expenses were expanded and include for example a part of car expenses. A thin capitalisation rule for interest deduction was introduced. (Various measures from 1989 to 1995).

Some changes in the personal income tax had also an effect on the taxation of income from capital. Since 1983, income from domestic savings is subject to a final withholding tax. The rate of the withholding tax on interest was lowered from 25% to 10% in 1990, which exacerbated the discrimination against new equity. The main reason for this was the opening of the capital markets in Europe without any agreement on the taxation of savings. An opposite change took place in

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<sup>(13)</sup> For example, exemption of dividends from equities raised in 1982-83, special allowance for employees recruited by small businesses, preferential tax regimes for innovative companies, for firms set up in targeted employment zones or in parts of the territory facing declining economic activity (reconversion zones).

<sup>(14)</sup> The capital gains on the assets transferred from unincorporated to incorporated businesses were subject to a flat 16.5% tax rate, while the acquisition value of the corresponding assets could be fully depreciated at the corporate tax rate. The incentives for unincorporated businesses to incorporate are described in O.E.C.D (1994)



1994-1996: the final withholding tax on interest was raised from 10% to 15% and the final withholding on dividends from new equity was lowered from 25% to 15%.

A new reform of corporate of corporate income tax was introduced in 2003. The nominal tax rate was reduced from 39 to 33% (from 40.17 to 33.99 including the additional crisis surcharge). Small enterprises benefit from a 50% reduction in corporate income tax for retained profits (up to 37,500€) if these profits are used to finance investments in fixed assets (The “investment reserve”). Base broadening ensures that the reform is budgetary neutral. The main base broadening provisions are (a) a tightening of the upstream taxation requirement in the exemption system, (b) less favourable depreciation rules, (c) the non-deductibility of regional taxes.

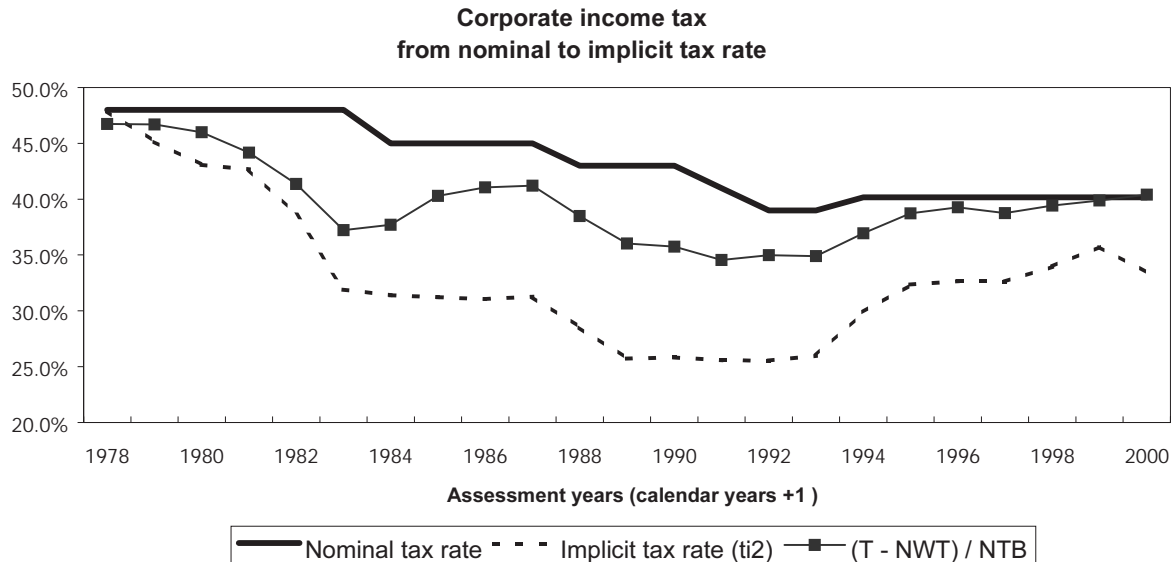
### **3. The effects of the corporate income tax reform in Belgium**

In this section, we use the various indicators described in Section 1 to assess the effect of corporate income tax reform during the nineties. Section 3.1 uses implicit tax rates before we turn to the marginal and average effective tax rates.

#### **3.1 *Implicit tax rates***

Figure 1 compares trends in implicit tax rate “ $i_{t2}$ ” (computed on the basis of the tax statistics) and nominal tax rates for companies overall over the past twenty years. Until the beginning of the 1990s, the gap between nominal tax rates and effective tax rates widened, due to an increasing use of tax expenditures. This trend was reversed at the start of the 1990s. The gradual tax reforms described above brought the implicit tax rate much closer to the nominal tax rate. It can also be seen that, at the end of the period, the rate of tax less notional withholding tax  $[(t-NWT)/NTB]$  was practically the same as the nominal tax rate. This means that the remaining gap between the implicit tax rate and the nominal tax rate is largely due to tax expenditures, which exceed the amount of disallowed expenses. The net effect of these two departures from a benchmark tax system is a smaller tax base. A large part of these tax expenditures consists in exempted profits of the coordination centres.

Figure 1



It is clear from Figure 1 that the tax reform engaged in the early nineties has increased the effective taxation of companies and has consequently succeeded in raising more revenue from corporate income tax: the implicit tax rate rises from 25% in the early nineties to 33-35% at the end of the period. The convergence between implicit and nominal tax rates also indicates progress toward neutrality: the magnitude of tax expenditures has been reduced.

Part of the increase in the implicit tax rate could also be explained by a progress in enforcement: the combined effect of a set of anti-abuse rules is stronger than the sum of the effects of each anti-abuse rule taken separately. A higher yield from audits could also explain the increase in the implicit tax rate.

### 3.2 Marginal effective tax wedge

We now turn to forward-looking indicators of effective taxation. These enable us to illustrate the main non-neutralities in the financing of investment in the early nineties and the effect of tax reform during the past decade. Table 4 summarizes the main results.

**Table 4**  
**Marginal effective tax wedge 1989-2000**

	1989	2000	1989	2000
Interest and inflation rates	Current		Average 1999-00	
Small and medium enterprises – average	2.3	0.5	1.8	1.0
- new equity	4.5	- 0.3	3.6	0.9
- debt	0.3	- 0.1	0.2	0.0
- retained profits	2.0	1.4	1.7	2.0
Parent-subsidiary, no co-ordination centre – average	1.5	1.2	1.2	1.6
- new equity	1.7	1.2	1.3	1.7
- debt	1.4	1.1	1.1	1.6
- retained profits	1.4	1.1	1.1	1.6
Parent-subsidiary, + co-ordination centre (*) – average	- 0.9	0.2	- 0.8	0.3
- new equity	-1.4	-0.3	-1.2	- 0.3
- debt	- 1.1	1.1	- 0.3	1.6
- retained profits	- 1.6	- 0.3	- 0.8	- 0.3

(\*) These three ways of financing refer to the relation between the parent company and the co-ordination centre. The parent is in any case financed by debt issued by the co-ordination centre on behalf of the group.

The main characteristics of the pre-reform situation were the following.

- For small enterprises, the tax system strongly discriminated against new equity and favoured debt <sup>(15)</sup>. Such a situation is common to most OECD countries but the difference between the tax wedge for investments financed by equity and the tax wedge for those financed by debt was higher in Belgium than in other OECD countries <sup>(16)</sup>. The main reasons for this were the double taxation of distributed profits (corporate income and a final withholding tax of 25%) and the low level of taxation of interest at personal income tax <sup>(17)</sup>.
- In the “parent-subsidiary case”, the tax system was nearly neutral. Dividends were taxable in the hands of the subsidiary but 90% of them were exempt by the parent. Interest was deductible from the subsidiary tax base but included in the parent tax base, while the opposite prevailed for retained profits, capital gains being exempt by the parent company.
- The use of a co-ordination centre for the financing of investment resulted in a negative tax wedge for two main reasons. In the cases of new equity and retained earnings, the financial flow going from the subsidiary to the parent company through the co-ordination centre was deductible at the initial stage (interest paid by the subsidiary) but never taxed in a later stage.

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<sup>(15)</sup> Any interest paid for loans made by shareholders who are active managers of the company is reclassified as dividends.

<sup>(16)</sup> See O.E.C.D (1991), pp. 106-107.

<sup>(17)</sup> 10%, while they were deducted from the corporate income tax base at the statutory tax rate of 43% in 1989.

Such a taxation only occurred when the parent company provided funds to the co-ordination centre by lending. Moreover, the parent company was entitled to a notional withholding tax of 25/75 of the net dividend or net interest received from the co-ordination centre.

The two last columns of Table 4 highlight the changes in METW induced by tax policy. The average tax wedge was decreased for small and medium enterprises but was raised for large companies and mainly for those using a co-ordination centre. For small businesses, the discrimination against new equity was substantially reduced and this is the main reason for the decrease of the average tax wedge. At the end of the period, investments financed by retained profits face the highest marginal effective tax wedge. For large companies, the higher tax wedge is due to an increase in the nominal tax rate (the crisis surcharge introduced in 1993) while for those with a co-ordination centre, the rollback of notional withholding taxes has pushed METW up.

The picture is slightly different when we use the current interest and inflation rates to compute the marginal effective tax wedges that effectively prevailed during the 1989-2000 period. The downward trends of interest and inflation rates resulted in lower tax wedges, reinforcing the tax policy stance for small businesses and counter-balancing it for large companies. Figures 2, 3 and 4 illustrate the trends of marginal effective tax wedges computed with current interest and inflation rates.

Figure 2 highlights progress to neutrality in the taxation of small and medium enterprises. The discrimination against new equity has been substantially reduced. A first step occurred in 1994, when personal income taxation was set at the same level for dividends and interests <sup>(18)</sup>. The tax credit for new equity raised by small and medium enterprises, introduced in 1996, strongly reduced the tax wedge.

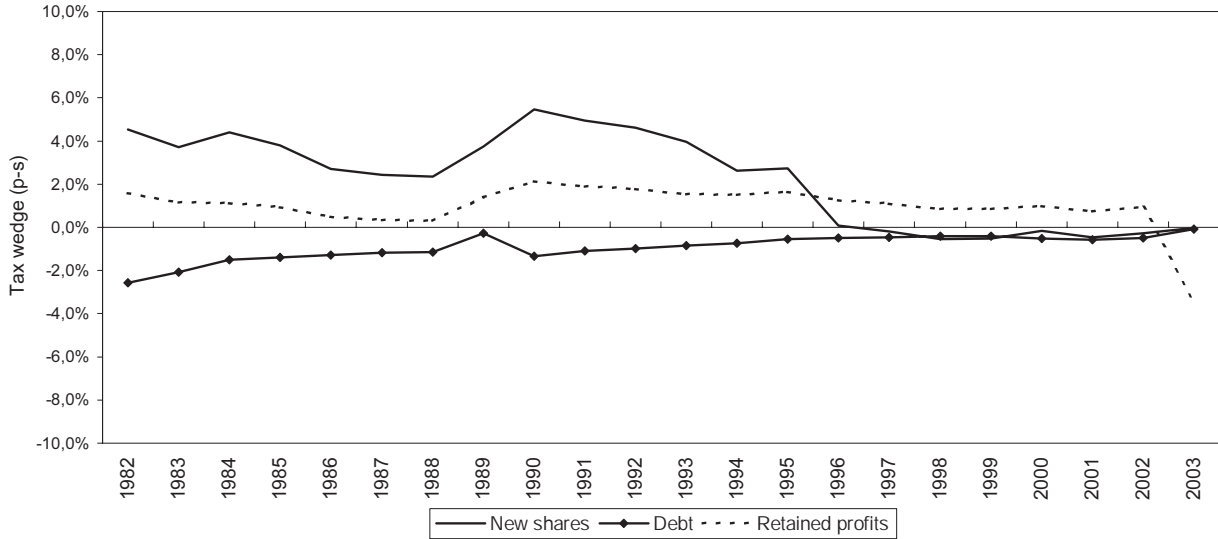
The main consequence of the 2003 tax reform is that the marginal tax wedge on investments financed by retained profits becomes negative, due to the “investment reserve”.

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<sup>(18)</sup> 15%, instead of 25% for dividends and 10% for interests.

Figure 2

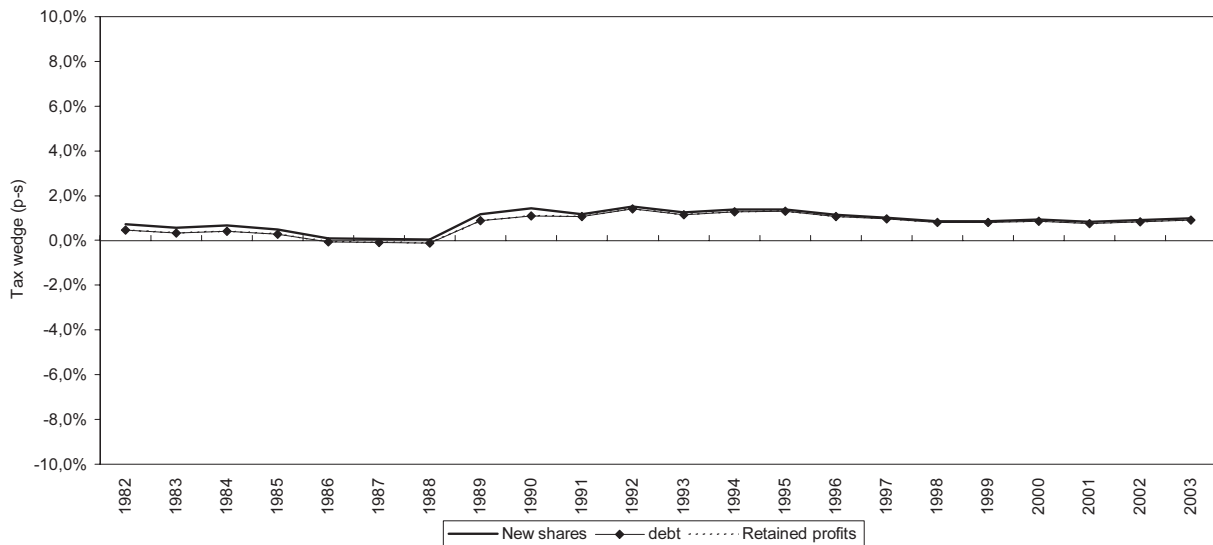
Taxation of income from capital  
Belgium, small businesses



In the « *parent-subsidiary* » case (Figure 3), neutrality was nearly achieved before the reform. Raising the exemption percentage of dividend received from 90 to 95% has allowed further progress.

Figure 3

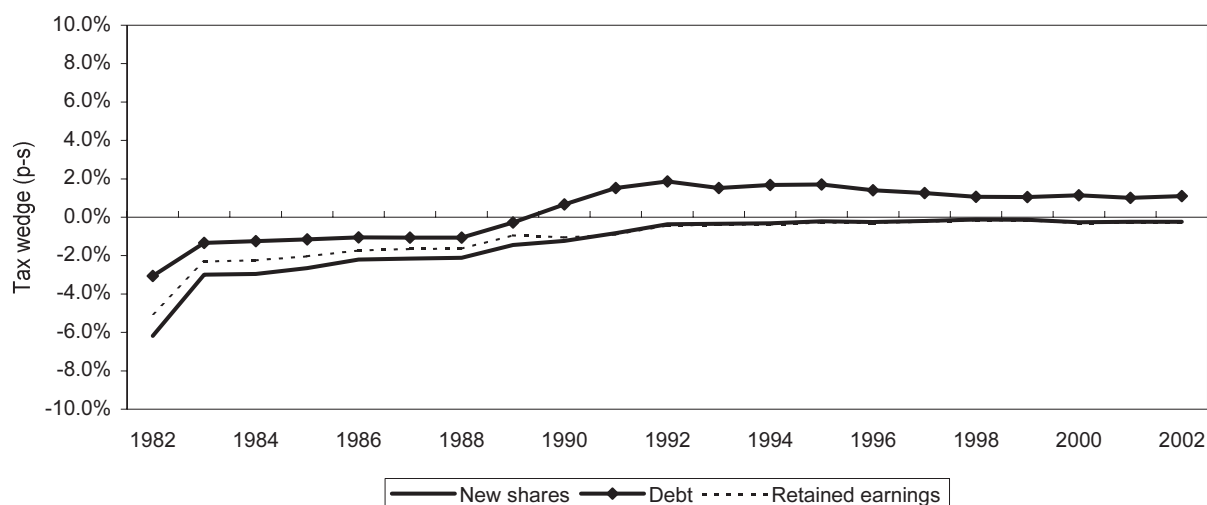
Taxation of income from capital  
Parent-subsidiary, no co-ordination centre



Another area where some neutrality has been achieved is the case of *investment financed through a co-ordination centre*. Notional tax credits have been gradually repealed, so that the parent company did not benefit from them any more when providing debt or new equity to the co-ordination centre. This explains why, in the case of a parent financing the co-ordination centre by debt, the use of a co-ordination centre has no effect any more on the tax wedge.

Figure 4

**Taxation of income from Capital  
Parent - subsidiary, + co-ordination centre**



The use of a co-ordination centre remains interesting however when the parent finances it by new equity or when the co-ordination centre finances the subsidiary through its retained profits. In those cases, the “non-taxation” case described above is still valid: interest paid by the subsidiary is deductible, interest received by the co-ordination centre is not taxable, profits distributed or retained by it are not taxable and the participation exemption regime applies to the parent <sup>(19)</sup>.

This holds in the case of a Belgian parent, which was the case of roughly one-half of the co-ordination centres in the mid-nineties. When the parent is foreign located, the effect on the co-ordination centre regime on the effective taxation of equity-financed investment depends on the existence and effective enforcement of base-protection rules. A “subpart F” legislation, like the one in force in the US, can restrict deferral of residence taxation. CFC rules may also affect the effective taxation of investments routed through co-ordination centres. Residence countries having an exemption system may design their upstream taxation requirement so that a dividend distributed by a Belgian co-ordination centre could not qualify for exemption and should be subject to tax in the residence country. On the other hand, multinationals may use tax planning to route the dividend so that the residence country should face strong difficulties to enforce the above-mentioned rules.

<sup>(19)</sup> The “upstream taxation” requirement introduced by the tax reform does not apply to dividends or capital gains from participation in a co-ordination centre.

### 3.3 Average effective tax rates

Figures 6 and 7 illustrate the changes in average effective tax rate over the 1982-2000 period. We concentrate on the cases where the main changes occurred (small businesses, large companies using a co-ordination centre) and use fixed interest and inflation rates to focus the analysis on the changes in AETR resulting from tax policy. The AETR analysis largely confirms section 3.2 findings.

In the case of SME's, the lowering of the final withholding tax rate on interest, which took place in 1990, resulted in increased disparities between AETR: effective taxation of investment financed by new equity or retained profits was raised, while effective taxation for investments financed by debt was lowered. During the same period, the corporate income tax rate was lowered from 43 to 39%. The AETR for investment financed by new equity was reduced at the end of the period, due to a lower withholding tax on dividends and to the introduction of a tax credit for new equity raised by small enterprises.

Figure 5

Average effective tax rate: small and medium enterprises

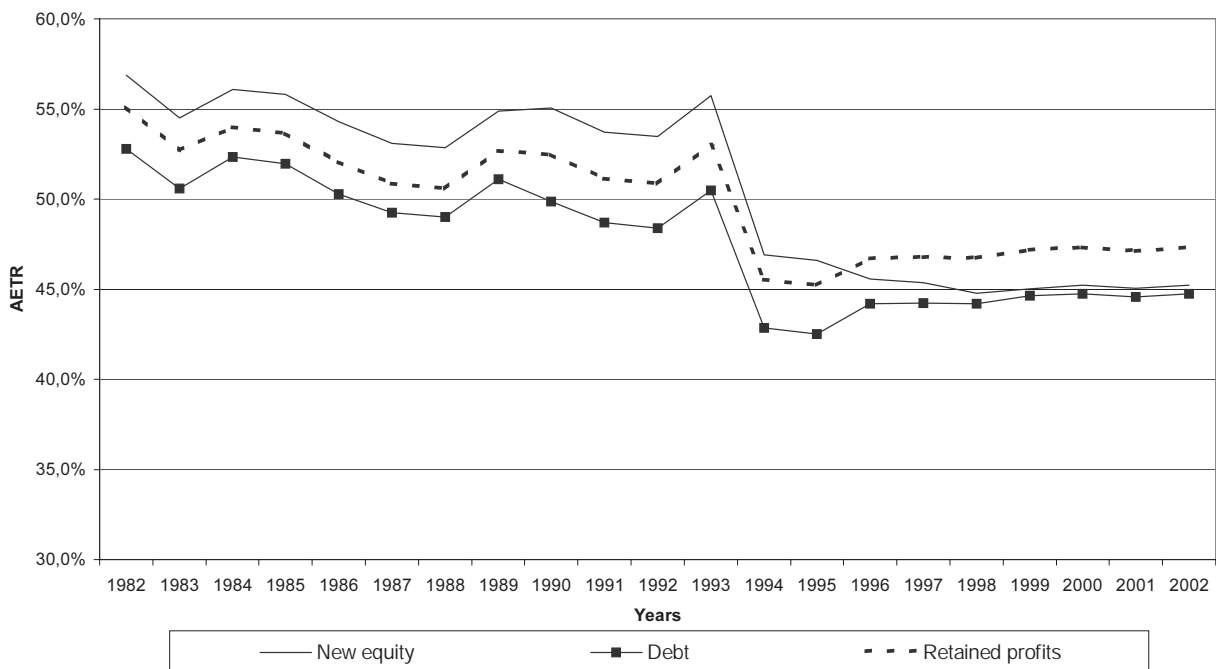
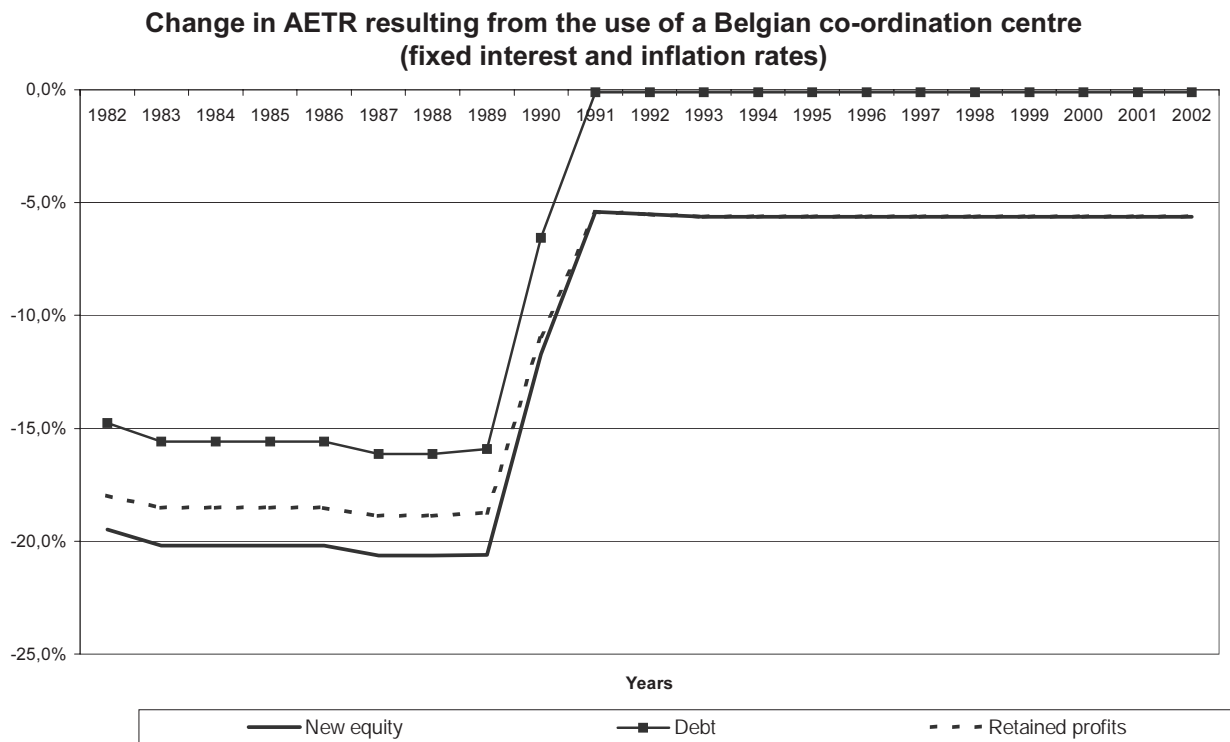


Figure 6



Large companies using a co-ordination centre enjoy reduced AETR. Figure 6 illustrates the change in AETR resulting from this preferential tax regime. As explained above, the cost-plus regime results in an exemption of interest received and of distributed and retained profits of the co-ordination centre. Moreover, the parent company providing new equity or debt to the co-ordination centre was entitled to a notional withholding tax, which was repealed in 1990-91. Since then, using a co-ordination centre for the financing of investment has no interest any more when the parent company lends money to the co-ordination centre. It still remains interesting when the co-ordination centre is financed by a Belgian parent through new equity or retained profits. The case of a foreign located parent company has been discussed earlier in this paper and remarks made above also apply here.



Table 5 provides the corresponding figures computed with current interest and inflation rates for the period 1990-2000.

**Table 5**  
***AETR with current interest and inflation rates – Belgium – 1990-2000***

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>A. Small and medium enterprises</b>											
New equity	55.1%	53.7%	53.5%	55.7%	46.9%	46.6%	45.6%	45.3%	44.8%	45.0%	45.2%
Debt	49.9%	48.7%	48.4%	50.5%	42.9%	42.5%	44.2%	44.2%	44.2%	44.6%	44.8%
Retained profits	52.5%	51.1%	50.9%	53.0%	45.5%	45.2%	46.7%	46.8%	46.7%	47.2%	47.3%
<b>B. Larges companies, no-coordination centre</b>											
New equity	37.7%	34.3%	34.8%	36.9%	36.3%	36.1%	37.0%	37.3%	37.7%	38.2%	38.2%
Debt	37.5%	34.2%	34.7%	36.8%	36.2%	36.0%	36.9%	37.2%	37.6%	38.1%	38.1%
Retained profits	37.5%	34.2%	34.7%	36.8%	36.2%	36.0%	36.9%	37.2%	37.6%	38.1%	38.1%
<b>C. Large companies with a co-ordination centre</b>											
New equity	28.0%	30.9%	31.3%	33.4%	32.8%	32.5%	33.5%	33.8%	34.2%	34.7%	34.8%
Debt	31.0%	34.2%	34.6%	36.7%	36.2%	35.9%	36.8%	37.1%	37.5%	38.0%	38.1%
Retained profits	28.3%	30.8%	31.2%	33.3%	32.7%	32.4%	33.4%	33.7%	34.1%	34.6%	34.7%

### **3.4 The untold part of the story**

There is a contrast between the upward trend of the implicit tax rate (Figure 1) and the trends of marginal effective tax wedges and average effective tax rates. This confirms the point made in section 1.5 that these indicators are complementary. A significant part of the changes introduced by the reform and listed in the right column of Table 3 have no effect on marginal and average effective tax rates, while they have an effect on the implicit tax rate. This is the case for the changes to the participation exemption system, for most of the provisions repealing tax expenditures and preferential tax regimes and for those introducing disallowed expenses.

## 4. Summary and conclusions

Corporate income tax is one of the most debated forms of taxation in OECD economies, despite (or due to?) the relatively low level of revenue raised. It was abundantly debated in Belgium in the early nineties: the main concerns were the low level of revenue raised and a significant number of non-neutralities. A gradual tax reform was introduced to meet these concerns.

Any investigation of the effects of such a reform has to use indicators of the effective taxation of corporate profits. Is there an ideal effective tax rate that could unambiguously reflect the effective taxation of companies ? We investigate this question by setting out the properties of what should be an ideal effective tax rate and confront them with various indicators: an implicit tax rate based on tax statistics and the well-known marginal and average effective tax rates from the King-Fullerton methodology and its extension by DEVREUX and GRIFFITH.

A discussion of the methodology concludes that there is no ideal effective tax rate: on the one side, implicit tax rates based on macro-data have as drawback to be backward-looking, but on the other side the marginal or average effective tax rates are not able to reflect all the features of the tax system.

Our empirical investigation leads to the same conclusion. On the one hand, the implicit tax rate developed in this paper clearly illustrates two major effects of the reform: more revenue was raised and the gap between the nominal tax rate and the effective taxation of profits was narrowed. However, this indicator does not tell us anything about the extent to which non-neutralities were curbed. On the other hand, the marginal and effective tax rate methodology is very useful when examining how far the main non-neutralities between various ways of financing investments have been reduced. However, this methodology does not allow us to take into account a significant part of the changes introduced by the gradual tax reform in the early nineties and consequently underestimates the effect of these measures on the effective taxation of corporate profits.

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