

How do reference values for wage growth and wage-indexing influence the impact of labour tax reductions?

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Abstract

The article investigates the possible labour market and fiscal impacts of labour tax reductions within a macroeconometric model that allows for various wage responses to tax policies and to policy-induced price changes. As such, the model captures different institutional settings of wage formation. We consider reductions in employers' social security contributions and fiscal compensation through value added or production taxes in a typically Belgian setting, i.e. a wage norm regime with automatic price indexing of wages.

The (quarterly) macroeconometric model we use has been developed as part of a larger project within the European System of Central Banks and is essentially Neo-Keynesian in its approach. The equilibrium in the real economy is determined by the supply side, but the short run is determined by demand. Nominal rigidities slow down the adjustment process. One of the key features of the model is its ability to distinguish between 'intrinsic' adjustments (related to delayed responses through costly adjustment processes) and 'expectation' dynamics (related to agents anticipating and incorporating future information into their decision making). Forward-looking behaviour is therefore fairly widespread in the model. The model contains two alternatives for wage formation. In the first, wages are determined endogenously as the result of a bargaining process between unions and firms, following a 'right to manage' model. In the second, a wage norm and price indexing regime is mimicked. Two subroutines, determining the degree of price indexing of wages, are available: a 'nominal rule' that keeps nominal wages equal to a reference value and a 'real rule' that targets the real wage. These rules can both concern labour costs or gross wages, depending on the degree of tax shifting from employers to employees.

To determine the labour market impact of the tax policy, the reaction of wages to the reduction in employers' social security contributions and to the fiscal compensation measures proves crucial. The more the initial reductions in employers' contributions are used to finance higher gross wages, and the more the inflationary effects of fiscal compensation measures are passed on in wages, the less positive the impact on employment will be. This means that little job creation is to be expected without a special co-ordination effort between all labour market players. Labour tax reductions are by no means a substitute for other labour market reforms.

1. INTRODUCTION

This paper analyses labour market and fiscal impacts of labour tax reductions in the Belgian setting of a wage norm regime with automatic price indexing of wages. We try to provide an answer to the question: how do budget-neutral reductions in employers' social security contributions (ESSC) affect job creation in Belgium? The tool we use for analysis is a macroeconomic model of the Belgian economy, featuring the main institutional characteristics of the labour market.

The choice of such a macroeconomic model as our tool implies that we only analyse aggregate effects on 'average' employees. This macroeconomic approach does not allow us to distinguish between the microeconomic effects of specific reductions for certain target groups of workers, e.g. focused reductions for low-wage earners, the young unemployed or the long-term unemployed. The choice of a macroeconomic model also limits the choice of alternative financing mechanisms. As an example, it is not possible to investigate the economic and environmental effects of very specific 'green' taxes (CO₂-tax, energy tax, ...), nor the different effects of a wealth tax. Another drawback of the macroeconomic modelling approach is that nothing can be said about welfare or income distribution effects. We can only analyse general effects on total employment creation, average wages and labour costs, and the government's total budget account. We cannot say what kinds of jobs will be created (or destroyed), and who's income will relatively increase or decline.

Regarding the simulations of ESSC reductions, budget neutrality is obtained through a shift from direct taxation, i.e. the ESSC, to indirect taxation, i.e. value added tax (VAT) and a tax on production (PT) that acts as a rough proxy for environmental taxes affecting firms' production costs. We distinguish the channels through which employers' social security contributions and indirect taxes have an impact on the economy, and try to simulate the effect of the alternative tax shifts on employment and on the government budget.

The remainder of this paper is organised as follows. Section 2 gives a short overview of the relevant international and Belgian literature, and indicate similarities and differences in relation to our own work. Section 3 describes the main institutional features of wage formation in Belgium. Section 4 presents the main building blocks of the model we use. Section 5 explains how simulations are run and section 6 shows the results. Section 7 ends with the conclusions and policy implications that can be drawn from the analysis.

2. REVIEW OF THE LITERATURE

The literature, empirical as well as theoretical, on the impact of labour taxes on both employment and on the government budget is very extensive. In this section we only give a brief overview of the main findings, with a special interest for studies pertaining to the situation in Belgium. We also place this paper in the context of the existing literature and indicate similarities and differences between our work and the work of others.

2.1 Employment effects of labour tax reductions

Net tax pressure on labour as a production factor (employers' contributions to social security and other possible employment taxes or subsidies), as well as taxes on labour as a source of income (employees' contributions to social security, income taxation and possible exemptions and subsidies), has in nearly all theoretical analyses a negative impact on employment (growth) and on labour market participation. This holds for both mainstreams in theoretical labour economics: the (new) classical school assuming perfectly competitive and clearing labour and product markets, and the (new) Keynesian approach that leaves the hypothesis of clearing markets behind and takes into account institutional corrections of market mechanisms¹.

In (new) classical models of the labour market, wage rate and employment level are determined through the interaction of labour demand (by the employers) and labour supply (by the employees) on a perfectly competitive labour market. In such models, employers' labour taxes and contributions cause labour demand to fall for a given gross wage rate, resulting in a new equilibrium with less employment. Employees' taxes and contributions cause labour supply to fall for a given gross wage², also resulting in an equilibrium with less employment.

In (new) Keynesian models of the labour market, the sharing of firms' value added between employers and employees, and the competing claims made by both parties on this value added through their price-setting behaviour and labour demand and through their wage demands, determine the wage rate and the employment level. Employers' taxes and contributions make firms less willing to hire personnel for a given gross wage,

¹ A treatment of both schools of theoretical models is, of course, to be found in any labour economics manual. For a comparison of the impact of labour taxation in both models, see e.g. Van Poeck e.o. (1998).

leading to an equilibrium with less employment. Employees' taxes and contributions increase workers' gross wage demands in order to preserve their purchasing power. These higher wage claims result in an equilibrium with less employment.

Given the negative impact of labour tax pressure on the labour market, a reduction in labour taxes or social security contributions would, according to these models, contribute to employment growth. Empirical research, at both international and Belgian level, confirms these theoretical propositions³. The Belgian Federal Planning Bureau⁴, in particular, has done work in this area using its HERMES model, including several studies that try to estimate the employment impact of actual labour tax reductions in Belgium over the past years. *This paper largely confirms the qualitative results of these studies.*

2.2 The importance of wage formation

The impact of labour tax pressure on employment is determined by the extent to which this pressure weighs on the labour cost for the employer. In a (new) classical model, this extent depends largely on the respective wage elasticities of labour demand and labour supply; in a (new) Keynesian model, it largely depends on partly institutionally determined factors, such as the relative bargaining power of employers and employees, the influence of outsiders on wage negotiations and the degree of co-ordination of the wage formation process. In the end, both models boil down to the same thing. As an example, a reduction in employers' taxes or social security contributions is more likely to give way to higher gross wages and thus to less employment creation in a rigid economy or in a period of rapid economic growth and a tight labour market, characterised by a hard to expand and thus inelastic labour supply (in the classical reasoning) and a relatively strong bargaining position for employees (in the Keynesian way of thinking), unless sufficient co-ordination between government and social partners can lead to another outcome.

When taxes are not passed on in higher labour costs and thus are borne entirely by employees, in the form of a lower net wage, they have little or no direct negative impact on employment. If labour costs remain constant, the relative cost of labour compared to capital and the initial international competitive position are unchanged. This prevents firms' labour demand from falling. In general, the negative impact of labour taxes on employment

² This is the case if contributions are not regarded as postponed income or as an expected return from some kind of insurance.

³ See e.g.: Assouline e.o. (1997), Audric e.o. (2000), Bossier e.o. (1987, 1996), Daveri e.o. (2000), De Bruyne e.o. (1998), Dewatripont (1991), Elmeskov e.o. (1998), Ginsburgh e.o. (1990), Layard e.o. (1991), Omeij e.o. (1998), Pearson e.o. (2000), Tullio (1987), Tyrväinen (1995), Vanderlinden (1991), Van Poeck e.o. (1998).

is bigger the more these taxes are shifted into higher labour costs for employers and the less they are borne by employees' take-home pay. These findings are confirmed by many international and Belgian studies⁵.

In the same line of reasoning, the extent to which wage labour tax reductions stimulate employment depends in theory on the reaction of wages to this tax reduction. If the tax reduction has its full impact on total labour costs, it delays the substitution of capital for labour and it can improve the international competitive position, depending on what happens with wages in competing countries. A tax reduction that merely gives way to higher gross wages misses out on these two effects and can only create some extra employment through the increase in domestic demand, stemming from a rise in household disposable income induced by the wage increase.

This finding is confirmed for Belgium by recent empirical research by the Federal Planning Bureau⁶. *Since institutional settings in Belgium, most importantly the interaction between the wage norm and the automatic indexing mechanism, largely determine the reaction of wages to labour tax reductions, this will be a crucial part of the analysis in this paper.*

2.3 Specific labour tax reductions aimed at low-wage earners

The tax wedge between total labour costs and net wages has an especially negative impact on job creation at the lower end of the labour market comprising less productive and lower-paid labour. In as much as tax pressure on that kind of labour weighs on labour costs, it makes it too expensive to employ such labour in production. As a consequence, this less productive labour is expelled from the production process. In as much as the tax pressure reduces the net income from labour, it increases the probability of financial unemployment traps for certain groups of people, which will decrease their labour supply. Therefore, specific tax reductions geared towards the low-paid are often regarded as very effective for the creation of jobs for people with a low educational attainment level or for the creation of less productive jobs in general⁷.

In spite of the fact that such specific measures not only promote job creation for certain problem groups, but sometimes also slow down job creation for others (a crowding-out

⁴ See e.g.: Bossier e.o. (1987, 1995, 1996) and Stockman (2001).

⁵ See e.g. Bossier e.o. (1987, 1996), De Bruyne e.o. (1998), Elmeskov e.o. (1998), Knoester e.o. (1987), Leibfritz (1997), Pearson e.o. (2000), Pissarides (1998), Scarpetta (1996), Summers e.o. (1993), Tyrväinen (1995), OECD (1994, 1997b), Van Poeck e.o. (1998).

⁶ See Stockman (2001).

effect), in international and Belgian research they often appear to perform better than generalised linear measures. Where the labour market is characterised by relatively high unemployment rates among such target groups, specific policy measures can be effective⁸.

For recent results of research on Belgium, we refer to studies by the Federal Planning Bureau⁹. *The Bank's macroeconomic model used in this paper cannot distinguish between differentiated tax reductions for specific target groups. Therefore, this aspect is not treated in this paper.*

2.4 Compensating fiscal measures and alternative financing of social security

The tax reduction's direct fiscal cost for the government budget consists of the actual rebates paid to employers or employees, or the decrease in the tax rates multiplied by the taxable base, i.e. the gross wage bill. However, this direct cost does not equal the ex post net fiscal cost for the government. The eventual fiscal cost of the policy measures differs from the direct or initial cost to the extent that the taxable base itself changes as a consequence of these measures. Tax reductions lead to changes in the gross wage bill because they cause changes in wages and/or employment.

In this way, a labour tax reduction partially finances itself through feedback effects: it leads to an increase in employment and/or wages and thereby a rise in the taxable base. These feedback effects, however, almost never fully compensate for the initial revenue loss. In part, this is due to the fact that the wage elasticity of labour demand (in absolute value) is less than one, which is confirmed by almost any macroeconomic study on that subject. This implies that a labour cost reduction does indeed lead to an increase in employment, but also that the employment increase is proportionally smaller than the labour cost reduction that caused it. The exact magnitude of the feedback effects is a purely empirical question that can only be answered by econometric research specific to each measure.

If the government decides to keep its expenditure (e.g. for social security benefits) at the same level as before, the initial revenue loss of tax reductions must be compensated for by other revenues. Indeed, like all taxes, labour taxes are meant to finance government expenditure. Such alternative government revenues (for social security) are often sought,

⁷ See e.g. OECD (1994, 1999b, 1999c, 2001), and Snower (1995).

⁸ For research on this topic, see e.g.: Assouline e.o. (1997), Audric (2000), Bossier e.o. (1995), De Lathouwer e.o. (2001), Fitoussi (2000), L'Horty (2000), Phelps (2000), Vanderlinden (1991).

both in the literature and in practice, in different forms of indirect taxation, such as value added taxes or other taxes related to production (e.g. energy taxes or CO₂-levies).

These alternative financing mechanisms themselves have an impact on employment, i.e. they destroy a part of the employment effects stemming from the initial labour tax reductions. Indeed, they increase firms' costs and/or selling prices, causing a higher wage and a loss of competitiveness. The degree to which this occurs depends very much on what specific fiscal measure is implemented as an alternative financing mechanism. However, in general, the overall employment effect of a shift from labour taxes to other revenue sources remains positive.

Empirical research, both at international level and specifically for Belgium, shows positive employment effects of labour tax reductions, even if these initial tax reductions are fully compensated for by one form or another of indirect taxation¹⁰. *This paper also confirms these conclusions, making them dependent, however, on the reaction of wages to the package of fiscal policy measures.*

2.5 The impact on income inequality

Up to now, we have only paid attention to the economic efficiency aspects of labour taxes, and the possibility of creating government revenues with these or with alternative taxes. However, one should look from a broader perspective at these macroeconomic analyses of labour tax reductions, and possible accompanying alternative financing mechanisms.

Taxes and social security contributions do not only function as a means of financing government expenditure, and reductions in taxes and contributions do not only impact on employment and on the government budget. Taxes and contributions also fulfil an important role in redistributing income. Because labour taxes are proportionally or (more often) progressively related to wages, in absolute terms they weigh more on higher incomes. This makes the dispersion of net wages smaller than that of gross wages. This characteristic of direct taxation is not shared by indirect taxes, such as VAT.

A shift from direct to indirect taxation may therefore well be neutral for the government budget, but is not without consequences for the distribution of incomes and purchasing

⁹ See e.g.: Bossier (1996).

¹⁰ See e.g.: Bogaert (1996), Bossier e.o. (1987, 1996), De Bruyne e.o. (1998), Goubert e.o. (1995), OECD (2001), Valenduc (1996b), Van Poeck e.o. (1998).

power. Such a shift to more government revenues from indirect taxation, which has a smaller redistribution effect, could thus increase income inequality in society. Recent research (especially on Belgium), often based on theoretical simulation models, shows that this aspect must indeed be taken into account in fully evaluating such tax shifts¹¹. *This paper, however, does not consider this issue, as an analysis of such welfare effects is beyond the scope of the Bank's macroeconomic model we use.*

3. INSTITUTIONAL CHARACTERISTICS OF WAGE FORMATION IN BELGIUM

Before turning to a description of the model used, it is useful to pay attention to the specific Belgian institutional settings that shaped the model.

Wages paid by Belgian companies result from negotiations held successively at three levels: national, sector and firm level, sector level negotiations in so-called joint committees being of overriding importance. These negotiations take place within a characteristic institutional framework with an overall guaranteed minimum wage, with automatic indexing of employees' gross wages to a so-called 'health index' of consumer prices and with a wage norm determined at national level, according to the law of July 1996 for the promotion of employment and the preventive safeguarding of firms' competitiveness.

3.1 The wage negotiations in the joint committees

In Belgian companies, gross wages are mainly determined through agreements concluded in joint committees¹² organised per sector of economic activity (whereby the notion of economic sector is sometimes very narrowly defined, the number of joint committees exceeding 100). The outcome of these sector negotiations cannot undershoot the legally determined guaranteed minimum wage¹³. However, it may be complemented with agreements concluded at the level of the firms, which are bound by the sector agreements.

Although firm level agreements have gained considerably in importance over the last few years, Belgium is traditionally regarded as a country where wages are predominantly

¹¹ See e.g.: Boadway e.o. (2001), Cantillon e.o. (1999a, 1999b, 2000), Cremer e.o. (1999), Davies e.o. (2000), Decoster e.o. (2000), Gentry (1997), Ooghe e.o. (2000).

¹² They are called joint committees ('comités paritaires'), because employers and employees have equal representation in them.

¹³ The minimum wage scale in almost every joint committee exceeds the legally guaranteed minimum.

determined at the intermediate (sector) level, as opposed to countries with more centralised or decentralised wage formation.

Two institutional characteristics, putting into perspective this cataloguing of Belgium as a country where intermediate level wage bargaining predominates, have an important impact on the movement in labour costs in Belgian enterprises, namely the indexing mechanism and the wage norm.

3.2 The indexing mechanism

The indexing mechanism implies that nominal gross wages of Belgian employees are automatically indexed according to the movement in the health index (HI) of consumer prices, i.e. the national index of consumer prices (NICP) with the exclusion of alcoholic beverages, tobacco and motor fuels. The way this automatic price indexing of wages is implemented is agreed by the joint committees. In some committees, wages are indexed at fixed points in time (e.g. every two, three or four months), in others wages are indexed each time the HI exceeds a certain threshold (often the threshold value is defined as the previous value plus two percent). Whatever the method applied, each indexing system incorporates lags between the movement in the HI and the adaptation of nominal wages. This results in wage indexing lagging on average one quarter behind the HI.

As a consequence of this institutional setting, inflation according to NICP, HI and wage indexing can sometimes follow quite different time paths. Moreover, the automatic price indexing mechanism of wages interacts with that other important institutional characteristic of Belgian wage formation: the wage norm.

3.3 The wage norm

The wage norm constitutes an overall maximum margin for the growth of nominal hourly labour costs in Belgian enterprises. According to the law of July 1996 for the promotion of employment and the safeguarding of firms' competitiveness, the social partners¹⁴ should fix such a norm every two years (in principle before October 31 of each even-numbered year, e.g. in the autumn of 2002) for a two-year period, taking into account a report written by

¹⁴ Failing an agreement between the social partners, the government can fix a wage norm that contains at least the automatic indexing and scale adjustments.

the Central Economic Council (CEC)¹⁵ (which, in principle, is published no later than September 30).

In this report, the CEC estimates the maximum room for a rise in firms' hourly labour costs as a weighted average of the expected nominal increase in labour costs in Belgium's three main neighbouring countries (Germany, France and the Netherlands) over the coming two years (e.g. 2003-2004). These expectations are based on projections, published by the OECD in its Economic Outlook, for the growth of compensation per employee in the business sector. These projections are corrected for possible changes in the working time per employee, which may be seen from the results of the Labour Force Survey published by Eurostat or extrapolated from it.

This margin, estimated by the CEC on the basis of the expected labour cost growth in the neighbouring countries, can be decreased¹⁶ by differences in labour costs that stem from higher growth of labour costs in Belgium compared to these reference states over the past two years (e.g. 2001-2002), as far as such a derailment is assessed by the CEC.

Estimations of expected automatic indexing of nominal wages, based on inflation projections, and estimations of labour cost growth through scale adjustments¹⁷, are subtracted from the nominal wage norm, thus determining the room for real wage increases. The indexing mechanism thus plays a crucial role in the functioning of the wage norm: projected indexing codetermines the ex ante margin for real wage increases, and actual indexing explains partly whether or not the wage norm is respected ex post. Real wage increases are negotiated in the joint committees (at the beginning of odd-numbered years, e.g. 2003, and with an agreement concluded in principle before March 31), possibly followed by firm level agreements (in principle concluded no later than May 31).

The specific institutional characteristics of wage formation in Belgian enterprises explained above are reflected in the design of the labour market section of the Belgian block of the Eurosystem's multi-country econometric model, which is explained in the following section.

¹⁵ This is the 'Conseil central de l'économie (CCE)' in which the social partners are also represented.

¹⁶ The margin for labour cost growth must, however, encompass at least the automatic indexing and scale adjustments.

¹⁷ Resulting from seniority, age, normal promotions or individual changes of category.

4. THE BELGIAN BLOCK OF THE EUROSISTEM'S MULTICOUNTRY MODEL

The (quarterly) econometric model we use for the simulations in this paper has been developed as part of a larger project within the European System of Central Banks. Different but comparable national models, augmented with an interest rate reaction function and an exchange rate equation, are linked to an aggregate multi-country model. Details concerning the Belgian model can be found in working paper N°4 from this series¹⁸.

The relatively compact model is essentially Neo-Keynesian in its approach. The equilibrium in the real economy is determined by the supply side, but the short run is determined by demand. Nominal rigidities (sluggish adjustment of prices) slow down the adjustment process. One of the key features of the model is its ability to distinguish between 'intrinsic' adjustments (related to delayed responses through costly adjustment processes) and 'expectation' dynamics (related to agents trying to anticipate and incorporate future information into their actual decision making). Forward-looking behaviour is therefore fairly widespread in the model: consumption, investment, labour demand and the pricing decision can all be (at least partly) determined in a forward-looking way. The model distinguishes the economy's main sectors such as households, firms, government and external transactions, but does not break them down further into sub-sectors such as industry and services. Moreover, it can be shown that in the long run the model converges to its steady state, defined by the underlying economic theory.

The model contains two alternative subroutines for wage formation. In the most general one, wages are determined endogenously as the result of a bargaining process between unions and firms. Following a 'right to manage' model, unions and firms bargain over the wage level, taking into account the labour demand curve. Only thereafter do firms set goods prices and employment. In this context, wage setting ultimately depends on the tax wedge, the relative output price in terms of the consumption price level, the unemployment rate and trend labour productivity. Or, more formally, the equilibrium nominal wage cost per hour can be estimated as

$$(1) \quad \ln(W) = 0.258 \ln(1+TW1) - 0.258 \ln(1-TW2-TW3) \\ - 0.0045 u + 0.258 \ln(P_Y) + (1-0.258) \ln(P_C) \\ + 0.003828 \text{ Trend} - 7.546$$

with	W	nominal labour cost per hour
	TW1	tax wedge: implicit rate of employers' social security contributions
	TW2	tax wedge: implicit rate of employees' social security contributions
	TW3	tax wedge: implicit rate of direct tax on earned labour income
	u	unemployment rate
	P _Y	private value added deflator
	P _C	private consumption deflator

In the short run, the actual wage cost will differ from this long run target, and is embedded in an error correction mechanism with the same set of variables augmented with apparent productivity changes and with an automatic indexing mechanism through a so-called health index.

In an alternative subroutine, used for short and medium term policy analysis (and as such in the rest of this paper), the wage norm, as outlined above, has been mimicked. Two sub-alternatives are available and they will both be used throughout this paper. It is therefore important to make a clear distinction between those two alternatives from the outset.

In the first option, one starts with the observation that, even though a **nominal** (ceiling for) labour cost per hour increase is extracted from our main trade partners' wage negotiation outcomes, it is re-expressed in a **real** increase using a prediction for the wage indexing. If positive or negative price surprises take place once the real increases are fixed, employees are completely immunised through the automatic indexing mechanism (if we disregard very temporary adjustment lags from actual price surprises to the wage index). All simulations that take place under a regime where the trajectory of the real wages is fixed exogenously will carry the label '**real rule**'. Ultimately, one likes to see a convergence in the pattern of the real wage increases. The simulated nominal labour cost per hour in such a scenario is calculated as

$$(2) \quad W = W_R \times [1/12 P_{HI} + 8/12 P_{HI} (-1) + 3/12 P_{HI} (-2)]$$

with:	W	nominal labour cost per hour
	W _R	real labour cost per hour, exogenously given
	P _{HI}	health index

¹⁸ See Jeanfils (2000).

The term in brackets is the estimated/calibrated model of the average wage indexing in Belgium. Two-thirds of the adjustment of wages to new price information happens in the next quarter. Due to lots of contracts using a threshold indexing mechanism, such an approximation overestimates nominal wages in periods of very low inflation and underestimates them in high inflation periods, but it can be shown that such an approximation leads to fairly accurate results.

In the second option of the alternative subroutine, one exploits the fact that, ultimately, the wage norm has to make a comparison between the pattern of the Belgian **nominal** wage increases and a weighted average of our main trade partners' equivalent. Under converging price movements, this makes no difference in relation to the previous option, but things change when, for some reason or other, prices react and adjust differently in Belgium than in Germany, France or the Netherlands. Depending on the kind of price discrepancy that takes place, employees may be better or worse off in real terms. In this kind of scenario, employees carry the risk of price surprises through a higher or lower than expected real wage increase. All simulations that take place under a regime where the trajectory of the nominal wages is fixed exogenously will carry the label '**nominal rule**'. Ultimately, one likes to see a convergence in the pattern of nominal wage increases. Using the same symbols as above, the implied real wage can be extracted from the now exogenously given nominal wage trajectory (rather than the real wage trajectory as was the case above) by inverting the previous equation:

$$(3) \quad W_R = W / (1/12 P_{HI} + 8/12 P_{HI} (-1) + 3/12 P_{HI} (-2))$$

Throughout this paper it will become clear that the option one takes can lead to appreciable differences in the simulation results, though mainly of course in those simulations that integrate fiscal policy reactions to maintain budget neutrality through changes in indirect taxation. Those reactions can have a substantial effect on consumption prices and, through the automatic indexing, on wages.

As we will focus on how a reduction in social security contributions affects employment, we can examine the mechanisms at work, in the context of the model outlined above, in greater detail.

Broadly speaking, ESSC reductions affect employment through two channels: a relative cost effect and an output or demand effect. As pointed out before, the theoretical reasoning has to take place in a world with exogenous nominal interest rates and exchange rates as they are decided upon (or endogenously driven) at supra-national level only.

In the first place, there is a direct relative cost effect: the same level of output can be produced at a lower cost through the reduced cost of the production factor labour. The total cost can be reduced even further through rescheduling the optimal combination of the factors labour and capital: as labour has become relatively cheaper, more of it will be used in the production process, thereby slowing down the substitution of labour for capital. This re-optimising on the supply side will lead to indirect changes in demand, changing the actual level of output. Domestic demand increases through a rise in disposable income, generated by higher employment and higher real labour income, as products should have become cheaper. This latter factor, which is nothing other than an improved competitive position, is also the driving force behind the rise in net export demand (under the assumption of unchanged labour costs in competing foreign firms). The total demand effect will, of course, lead to a larger output, creating an increase in the firm's demand for both labour and capital.

While the second output or demand effect is endogenous to the model, the first direct cost or substitution effect depends on the initial impact of the ESSC reductions on labour costs. It is all too easy to assume that such reductions have an equivalent impact on the labour cost. However, standard theory on wage bargaining between trade unions and employers' organisations shows that part of employers' taxes and contributions is shifted backward to employees via the negotiated gross wage. This also means that ESSC reductions will not reduce labour costs by the same amount: trade unions will be able to claim some part of the ESSC reductions for higher gross wages. The extent to which this is the case depends on the relative bargaining power of trade unions in the negotiating process and on the labour market situation in general¹⁹.

Normally, these shifting backward effects can be estimated in an econometric wage equation. However, the particular characteristics of wage formation in Belgium make things trickier. The nominal hourly labour cost increase in the business sector, resulting

¹⁹ For example, in the case of relatively strong trade unions and a tight labour market, a bigger part of the ESSC reductions will feed into higher gross wages, leading to a smaller reduction in labour costs, compared to the case of relatively weak unions and a labour market characterised by high unemployment.

from the negotiated pay increases, should not exceed the weighted average of projected business sector labour cost increases in Germany, France and the Netherlands. Often, both employers and employees know in advance the magnitude of (new) ESSC reductions the government is going to grant. Since, finally, the total labour cost is compared to the equivalent concept of our main trade partners (that is: a concept in which ESSC reductions are actually taken into account), expected/anticipated future reductions will affect the ceiling on gross wage increases that is implied by the norm for total labour cost rises²⁰.

It is therefore possible that these ESSC reductions are not only used to lower the (employers') labour cost, but are used by the negotiating social partners as a subsidy to go part of the way to meet employees' wage claims. It is actually the existence of a wage norm expressed in terms of 'labour cost per hour' that could exacerbate this effect: under the quoted restrictions, a budgeted social security contribution reduction implies an increased margin for gross wage increases, and as such it will be used during the process of breaking down the nominal allowed (one could say 'predetermined') hourly wage increase into a real collective increase and an expected price indexing component. In the extreme case, such a scenario would imply an unchanged labour cost for the employers: the social security contribution reductions will be exactly offset by employees' gross wage increases. As the employers will observe an unchanged labour cost, it is to be expected that there will be almost no direct reaction in their demand for labour.

In a real limiting case, such a clause could encourage both employers and employees to expect that if their talks should come to a dead end, negotiations can always be saved by new social security contribution reductions. Such a scenario would shift the responsibility of respecting the wage norm from social partners to government.

In most cases, where ESSC reductions go hand in hand with a negotiated labour cost that lies on or close to the wage norm frontier (implicitly hiding gross wage increases), their 'contribution' will come closer to a government subsidy to the employed than to a government employment subsidy.

²⁰ Hourly wage increases by our main trade partners only constitute a ceiling during the bargaining process, and should not necessarily be seen as an inevitable outcome.

5. SCENARIOS AND ALTERNATIVES

From the previous section it becomes clear that there might be a large variety of simulation outcomes after an ESSC reduction shock, depending on the magnitude of the shifting backwards effect. For the sake of the simplicity and clarity of the exposition, we consider two limiting possibilities for the design of our simulations: scenarios in which all reductions are effectively used for labour cost reductions (scenario a), and scenarios in which all reductions are entirely offset by increased gross wages (scenario b). The former is neutral for the employee at the gross wage per hour level, the latter is neutral for the employer at the level of the labour cost per hour. Both scenarios will determine the span of possible simulation outcomes. But given a wage norm for labour costs per hour, outcomes closer to scenario b are perhaps the more realistic.

In both limiting scenarios, part of the initial fiscal cost of the reduction of ESSC will be recovered by the government (endogenously) through fiscal feedback effects. On the one hand, higher employment and/or higher wages, resulting from the policy measure, broaden the labour tax base, which leads to higher fiscal and para-fiscal receipts. Lower unemployment, on the other hand, leads to lower expenditure for unemployment benefits. However, these feedback effects will never fully compensate for the initial fiscal cost. Therefore, if the government wants to maintain the same status regarding 'fiscal solvency' as before the shock, and in the long run there is no real alternative, it has to find alternatives to finance the ESSC reductions.

For each of the limiting scenarios, we will therefore analyse three sub-cases at the level of the fiscal compensation. In the first one, the shock is applied without any new government measures (no fiscal compensation). As noted before, one should be careful interpreting the resulting shock outcomes, as, at least during the period on which we focus, one does not return to an equilibrium growth path²¹. In sub-case two and three we will consider two financing alternatives that keep the government budget balance in place almost immediately: an increase in the rate of value added tax (VAT) and the introduction of a tax on production (PT). We see the latter as a (very rough) proxy for some types of environmental taxes. Some of these taxes, e.g. a CO₂ tax on firms, are directly linked to firms' production and production costs. In this we have to make the strong assumption that

²¹ However, a fiscal solvency rule has been switched on after a period of 10 years, bringing the deficit and debt to GDP ratio gradually back to baseline levels through an adjustment of government transfers to households. The resulting effects of this adjustment process on household income will, via a discount factor, impact on the actual permanent income now through the forward looking nature of the model used. However, some feedback effects, such as an increase in the long rates due to a higher debt ratio, are not present in the model.

firms are not able to change their production method in order to produce in a 'cleaner' way and pay less taxes. One could see such a production tax as having full financing capacity, because firms can only avoid it by producing less and not by producing differently, and having almost no beneficial environmental impact. In reality, green taxes should have less financing capacity and more environmental impact than in our set-up. Other financing alternatives, though conceivable, are not considered.

Both the fiscal compensation measures and alternative financing measures have an impact on employment. The VAT measure increases consumer prices and hence nominal wages, with a negative impact on employment. The tax base of the PT measure is broader than that of the VAT measure. It increases firms' production costs and thereby reduces production in itself, and hence labour demand.

There is quite a difference in the way VAT rate shocks or the introduction of a PT impact on the economy. A VAT rate increase directly impacts on the price level of private consumption. This will not only lead to a reduction in demand, but will also generate a price-wage spiral through the automatic wage indexing regime. This latter effect makes labour less attractive as compared to capital (short term interest rates are held fixed in the model). Both factors, i.e. the decrease in output demand and the increase in relative labour costs, will impact negatively on labour demand by firms. On top of that come second-round competitiveness effects through the price-wage spiral that makes output more expensive for export purposes as well, leading to a further final demand reduction. As opposed to a VAT rate increase that impacts on private consumption only, the negative effects of the adoption of a PT are spread over all final demand items alike (private and government consumption, export and investment), and consequently, all sectors will be hit (and not mainly households as in the previous case). A considerable share of the increase in the output price will therefore be exported (at the expense of decreased competitiveness), the government budget will worsen through an increase in nominal government consumption, firms' profits will decrease as a result of lower demand and lower profit margins, and households will be hit through higher consumption prices and through the reduced labour demand by firms.

As outlined above (these fiscal compensation measures have an impact on the price level), it is important whether one specifies the ceiling on the labour cost per hour increase, determined by the wage norm, in real terms or in nominal terms. This means that, for all of the three sub-cases in both limiting scenarios, we have to come up with results under a

real rule and a nominal rule. One could look at these rules in another way as well. In a limiting case where ESSC reductions can fully impact on the labour cost, 'nothing' should change from the point of view of an employee. But (given the effect of these reductions, and possibly fiscal measures, on prices) this 'nothing' still has to be defined in either real or nominal terms. Thus, depending on the scenario, a real rule means that either the real gross wage per hour (reductions entirely used for labour cost reduction) or the real labour cost per hour (reductions entirely used for gross wage increases) is fixed between baseline and shock. A nominal rule keeps the nominal gross wage per hour or the nominal labour cost per hour fixed throughout the simulation.

Two limiting cases, three subclasses and two rules determine a grid of 12 simulation outcomes. Throughout the remainder of this paper, references will be made to the different scenarios as they are organised in table 1.

Table 1 - Comprehensive overview of ESSC reduction simulation scenarios

a. ESSC reduction entirely used for labour cost reduction

	I. Real rule: <i>real gross wage unchanged</i>	II. Nominal rule: <i>nominal gross wage unchanged</i>
1. No fiscal compensation	scenario a.1.I	scenario a.1.II
2. Increase in VAT rate	scenario a.2.I	scenario a.2.II
3. Introduction of PT rate	scenario a.3.I	scenario a.3.II

b. ESSC reduction entirely offset by gross wage increase

	I. Real rule: <i>real labour cost unchanged</i>	II. Nominal rule: <i>nominal labour cost unchanged</i>
1. No fiscal compensation	scenario b.1.I	scenario b.1.II
2. Increase in VAT rate	scenario b.2.I	scenario b.2.II
3. Introduction of PT rate	scenario b.3.I	scenario b.3.II

6. SIMULATIONS AND RESULTS

The overview of the results of the simulations below follows the structure of the presentation of the scenarios in the previous chapter.

This section presents the results of the series of simulations of ESSC reductions. In each of these shocks the level of the implicit rate of ESSC (on gross wages) is permanently decreased by 5 p.c. Using the actual implicit rate, this corresponds to a decrease of some 1.3 percentage points. We first analyse the possible effects of such reductions in cases where they impact fully on labour costs (subsection 6.1), and after that we treat the case where these reductions lead to an equivalent rise in gross wages (subsection 6.2). As already stated, alternative financing options are considered in each of these sub-cases.

6.1 *Scenarios with labour cost reduction*

In the first set of simulations, we assume that co-ordination between government and social partners, in order to stimulate employment by fiscal measures, guarantees that the ESSC reductions lead to an equivalent reduction in firms' labour costs. Tables 2 to 5 illustrate the effects over time on employment (expressed in number of jobs) and on the government deficit, with the wage setters adopting either a real rule or a nominal rule.

Table 2 - Employment effects for three fiscal compensation scenarios, under a real rule, for an ESSC tax rate cut of 5 p.c.

(yearly averages of number of jobs, compared to baseline)

	T ₀	T ₁	T ₂	T ₃	T ₄		T ₉
Scenario a.1.l labour cost reduction no fiscal compensation	+2100	+6200	+10400	+13800	+16600		+23500
Scenario a.2.l labour cost reduction increased VAT rate	+600	+1700	+2300	+2800	+3300		+4400
Scenario a.3.l labour cost reduction PT rate introduced	+1000	+3200	+5400	+7400	+9000		+12800

Table 3 - Employment effects for three fiscal compensation scenarios, under a nominal rule²² for an ESSC tax rate cut of 5 p.c.

(yearly averages of number of jobs, compared to baseline)

	T ₀	T ₁	T ₂	T ₃	T ₄		T ₉
Scenario a.1.II labour cost reduction no fiscal compensation	+1700	+4900	+7700	+9600	+11200		+15400
Scenario a.2.II labour cost reduction increased VAT rate	+1200	+3800	+5800	+7300	+8500		+11400
Scenario a.3.II labour cost reduction PT rate introduced	+1000	+3100	+4800	+6000	+7000		+9600

In scenarios a.1.I and a.1.II, **no fiscal measure to obtain budget neutrality** is imposed. In these cases, employment creation is shown to be quite substantial. The labour cost reduction puts downward pressure on prices. Combining an exogenous path for a nominal labour cost per hour (given by the expected wage movements among our main trade partners) with an automatic indexing mechanism based on those lower prices, leads implicitly to real gross wage increases. As the firm ultimately considers real wages in its factor demand, it should be no surprise that the scenario under a real rule will show somewhat better results for employment. According to tables 2 and 3, private employment (in number of persons) would gradually increase to reach some 17,000 or 11,000 additional jobs after 5 years, under a real rule and a nominal rule respectively.

Tables 4 and 5 show, in their first sub-case, that fiscal feedback effects increase over time but never fully compensate for the initial fiscal cost of the ESSC reduction. Under both rules, and after 5 years, the government budget shows an additional deficit in the order of magnitude of 500 to 600 million euro after 5 years (as compared to an initial cost of 1,000 million euro. As pointed out earlier, the alternative financing mechanisms necessary to keep this operation (largely) budget neutral can take the form of higher VAT receipts (through an increase in the VAT rate) or the introduction of a production tax. We have introduced just **one** shock to the level of the taxation rate. Its magnitude has been calibrated so as to offset the cost of the ESSC reduction, at least over the first years.

²² Remember that, under a nominal rule, employers try to pass on all shock-induced price effects to the employees, thereby effectively changing their real gross wage. This can be positive for the employees in a deflationary environment (pure ESSC reduction, no fiscal compensation), or negative in an inflationary environment (fiscal compensation of ESSC reduction).

Table 4 - Budget balance for three fiscal compensation scenarios, under a real rule for an ESSC tax rate cut of 5 p.c.

(yearly averages in millions of euros, compared to baseline)

	T ₀	T ₁	T ₂	T ₃	T ₄		T ₉
Scenario a.1.I labour cost reduction no fiscal compensation	-1000	-900	-900	-700	-600		-500
Scenario a.2.I labour cost reduction increased VAT rate	-100	0	+0	+0	+0		+0
Scenario a.3.I labour cost reduction PT rate introduced	-100	-100	-100	0	+100		+400

Table 5 - Budget balance for three fiscal compensation scenarios, under a nominal rule, for an ESSC tax rate cut of 5 p.c.

(yearly averages in millions of euros, compared to baseline)

	T ₀	T ₁	T ₂	T ₃	T ₄		T ₉
Scenario a.1.II labour cost reduction no fiscal compensation	-1000	-800	-700	-600	-500		-500
Scenario a.2.II labour cost reduction increased VAT rate	-200	-200	-100	+0	+0		+100
Scenario a.3.II labour cost reduction PT rate introduced	-200	-100	+0	+100	+200		+400

In the second sub-case, the negative fiscal effects of the ESSC reduction are compensated for by an **increase in the VAT rate**. The MCM model works with an implicit VAT rate (share of VAT revenue in private consumption less VAT revenue). The calibrated shock applied increases this VAT rate by some 6.5 p.c., bringing its level almost a full percentage point higher. VAT increases places the whole cost of this measure on the sector of households: price rises will decrease their real disposable income and thus their savings ratio. The latter will only be able to return to its former level by some combination of a higher disposable income (obtained through automatic wage indexing) and a reduction in real consumption. This decrease in demand leads, of course, directly to less employment. Through the strong feedback effects of increased prices on nominal gross wages, the input factor labour will become more costly for the employer. The change in this relative cost structure will result in a substitution of capital for labour. The government, on the other hand, gains not only directly through higher VAT receipts, but also through the

higher inflation²³. When gross wages are allowed to rise nominally (i.e. under a real rule), the tax base increases, leading to higher social contributions and direct taxes. These can then offset decreases in revenues resulting from less employment and higher unemployment expenditure.

The price effects of the VAT rate increase (with heavy inflationary effects on private consumption prices, though not on export prices), more than outweigh the deflationary effects from the initial ESSC reduction, creating a net inflationary environment. A nominal ceiling will thus decrease real wages and be more favourable for job creation. Under a quasi unchanged government budget balance, and when real gross wages have to remain at their baseline level (i.e. under a real rule), a gradual increase in employment of up to about 3,000 extra people after 5 years can be observed, as compared to some 8,000 extra jobs under a nominal rule regime (see tables 2 and 3).

Alternatively, the negative fiscal effects of the ESSC reduction can also be compensated for by the **introduction of a production tax** on the nominal value added. This tax can be seen as an indirect tax at the firm level: it increases the normal output according to the products' value added content. As the firms in the MCM model are, to a significant extent, price-setters²⁴, they will try to increase their output price after the introduction of a PT-tax to restore some of the negative effects on their profit margin. These negative effects will thus be passed on to their customers: the latter belong to three groups: (1) households and government through their consumption, (2) the rest of the world through exports and (3) other firms and government through investment demand. We start from the assumption that firms will try to increase their prices in the same way as they have been taxed: in accordance with the value added content of the product (and not just an equal percentage increase for each and every product alike). As this content, on average, is a lot higher for goods destined for domestic private consumption than it is for export goods, the price of the former will suffer more. As it so happens, the same holds true in largely comparable proportions for the energy content of the average consumption and export goods. The results obtained are thus useful in an 'energy tax' approach, where producers would pass on production tax generated price increases proportionally to the energy content in the final goods.

²³ All government revenues are endogenously determined in the model. Most government expenses are exogenously determined in real terms, with the notable exception of unemployment benefits (that do, of course, vary with the number of unemployed) and interest payments. The deflator for government expenses is endogenously determined and is a function of underlying prices, depending on the category of expenses (consumption, investment, transfers).

²⁴ The MCM model has estimated that, on average, Belgian firms are for 70 p.c. price-setters, and for the remaining 30 p.c. they are constrained by the prices of their competitors.

It is important to notice that price increases are now shared between prices for private consumption goods and prices for goods that will be exported. Given the high level of Belgian exports, a significant share of the shock-induced price rise will be exported, albeit at the expense of a loss in competitiveness (itself resulting from the improvement of the terms of trade). But these exported price increases will not have any feedback effects on domestic prices or, ultimately, on wages through the automatic indexing mechanism, as is the case for price rises on the domestic market (and for the full 100 p.c. in the VAT rate increase scenario).

If the price increases occurred mainly in products that are excluded from the health index basket (as might, under certain circumstances, be expected if an 'energy tax' were introduced), price-wage increases could further be kept under control. But the same holds true if the indirect tax increase were targeted through a rise in the VAT rate on energy products only (or an increase in the excise rate due on alcohol and tobacco). Wage increases would then be correspondingly lower. This would in turn lead to a lower real disposable income and further slow down demand.

As was the case for the VAT rate increase, an equivalent, but unique, production tax rate has been calibrated so that it largely compensates for the cost of the ESSC reduction, at least over the first years²⁵. A production tax of about 0.45 p.c. on nominal value added from private sector firms is shown to be able to offset the costs related to a 5 p.c. reduction in the implicit level of the ESSC rate (reducing the level of the ESSC rate by some 1.3 percentage points).

As already mentioned in the scenarios used, the inflationary effects after the introduction of a production tax are more muted, largely because price increases can be recouped by firms on a larger base than private consumption alone, and, most notably, because part of the inflationary effects can be exported. Therefore, and unlike the previous case, the deflationary effects of the ESSC reduction outweigh the effects of the highern consumption deflator. More jobs are therefore created under a real rule than under a nominal one. And also, under a real rule, the effects on employment of the introduction of a production tax are slightly more positive than the ones obtained under a VAT rate increase.

²⁵ It is not the neutrality as such that is really important, rather the fact that the remaining impact on the government budget is comparable to that in the previous case, so as not to bias the employment effects through an implicit higher or lower degree of compensation.

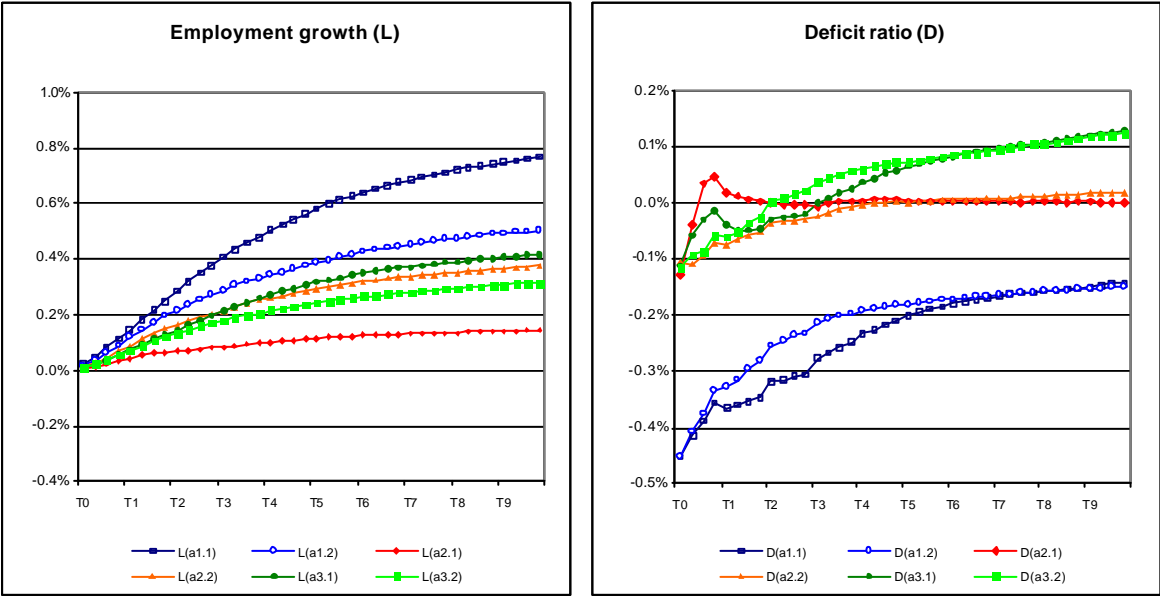
The results for the three scenarios above are summarised in graph 1. It is clear that the greatest impact on employment is seen in scenarios a.1.I and a.1.II, where budget neutrality is not imposed and there is no fiscal compensation. Alternative financing of government expenditure would partly destroy some of the positive employment impact of the initial ESSC reduction measure.

In this, fiscal compensation with a production tax is slightly more effective in terms of job creation than an increase in value added tax, because a part of the inflationary effects can be exported. The negative price elasticity of output leads to less demand and fewer jobs, but there is no supplementary negative effect through the price-wage spiral.

When comparing results within a fiscal compensation scenario but switching between a real rule and a nominal rule, one can see that, if a net inflationary effect results from the shock (as in the VAT scenarios a.2._), a nominal rule leads to larger employment effects than a real rule keeping the real gross wages unchanged. In the latter case, employees are immunised against these price effects and thus see their nominal gross wage rise as the consumer index rises. The opposite is true if net deflationary effects arise from the shock (as in the scenarios a.1._ and a.3._).

Graph 1 - Employment growth and deficit ratio for three fiscal compensation scenarios, in the case of an effective labour cost reduction (ESSC tax rate cut of 5 p.c.)

(percentage points, compared to baseline)



6.2 Scenarios with gross wage increase

In the next set of scenarios, we assume that there is not enough co-ordination between government and social partners to guarantee that the ESSC reductions lead to an equivalent reduction in firms' labour costs. Instead, the social partners agree to use the reductions to finance higher gross wages. We assume the extreme case where this gross wage increase amounts to the full ESSC reduction and labour costs are unaffected. Tables 6 to 9 illustrate the effects on employment and on the deficit for this case.

Due to the positive net inflation effects (either direct effects from the increased indirect taxation or second-round price effects resulting from higher real disposable income), simulations under a real rule (tables 6 and 8) actually never respect the wage norm (that tries to put a ceiling on increases in nominal labour cost per hour), always leaving employers with higher nominal labour costs than before the shocks. Unsurprisingly, these will produce a worse employment creation outcome than the results in tables 7 and 9, where we are working on the wage norm frontier (nominal rule).

Table 6 - Employment for three fiscal compensation scenarios, under a real rule, for an ESSC tax rate cut of 5 p.c.

(yearly averages of number of jobs, compared to baseline)

	T ₀	T ₁	T ₂	T ₃	T ₄		T ₉
Scenario b.1.I gross wage increase no fiscal compensation	+600	+1400	+1700	+2000	+2200		+3300
Scenario b.2.I labour cost reduction increased VAT rate	-300	-1400	-3300	-4900	-6100		-8600
Scenario b.3.I labour cost reduction PT rate introduced	0	-300	-1100	-1600	-2000		-2600

Table 7 - Employment for three fiscal compensation scenarios, under a nominal rule, for an ESSC tax rate cut of 5 p.c.

(yearly averages of number of jobs, compared to baseline)

	T ₀	T ₁	T ₂	T ₃	T ₄		T ₉
Scenario b.1.II gross wage increase no fiscal compensation	+700	+1700	+2500	+3000	+3600		+5300
Scenario b.2.II labour cost reduction increased VAT rate	+400	+900	+1000	+1300	+1600		+2300
Scenario b.3.II labour cost reduction PT rate introduced	+300	+700	+800	+1000	+1200		+2100

In scenarios b.1.I and b.1.II, no fiscal measure to obtain budget neutrality is imposed. Even in this case, employment creation is shown to be rather poor. According to tables 6 and 7, private employment (in number of persons) would increase by only 2,000 to 4,000 jobs over the course of five years under a real and nominal rule respectively. There is little to no relative labour cost effect on employment. Employment only grows through an increase in domestic demand, stemming from the gross wage increase. The ESSC reductions can thus largely be seen as a transfer from the government to the working population. Almost no extra employment is generated, at great cost.

Tables 8 and 9 show that, even if the feedback effects are a lot larger than in the previous simulations (mainly through increased revenues from direct taxes and employees' social security contributions on the increased gross wages), they far from compensate for the initial fiscal cost of the ESSC reduction. After taking second-round effects into account, a negative effect of about 400 to 500 million euro will remain after 5 years, or half the impact of the initial cost. If the level of social expenditure previously financed by the ESSC is to be maintained, alternative financing mechanisms are again necessary. Due to the larger feedback effects on the government budget, this alternative financing will be less substantial than in the previous scenarios.

Given that there are almost no employment effects even when no budget neutrality is imposed, it is clear that the outcome could rapidly turn into job destruction if fiscal compensation measures are imposed, especially if, due to increased inflation, they push the nominal labour cost per hour beyond the wage norm frontier, as will be the case under a real rule. Table 6 shows that this is indeed the case, as the total would gradually build up to some 6,000 or 2,000 job losses after 5 years, depending on whether compensation took place through a VAT rate increase or the introduction of a production tax.

Under a nominal rule, the nominal hourly labour cost constitutes a ceiling. Initially, the nominal labour cost per hour declines as a consequence of the ESSC reduction; in the next stage, gross wage claims (taking into account the creation of additional inflationary effects) can only be expressed in so far as they push the nominal gross labour cost per hour back to its original level. Real wage increases will be smaller the higher the extra inflation, and by now we know that more inflation is created through the VAT scenario than through its PT counterpart. For this reason, the former scenario is expected to show a somewhat better employment outcome.

In the PT scenario, domestic demand will be higher than when compared to a VAT scenario, because real disposable income is better safeguarded. But as firms try to gain back a part of the imposed PT by increasing their export prices, they will see their export demand decrease through a worsened competitive position, leading to a decrease in export demand. This, together with the higher real labour costs (when compared to a VAT scenario), will actually lead to destruction of employment, as can be seen from table 7.

Table 8 - Budget balance for three fiscal compensation scenarios, under a real rule, for an ESSC tax rate cut of 5 p.c.

(yearly averages in millions of euros, compared to baseline)

	T ₀	T ₁	T ₂	T ₃	T ₄		T ₉
Scenario b.1.I gross wage increase no fiscal compensation	-500	-400	-400	-400	-400		-600
Scenario b.2.I labour cost reduction increased VAT rate	+100	+200	+100	+100	0		-200
Scenario b.3.I labour cost reduction PT rate introduced	0	0	0	0	0		0

Table 9 - Budget balance for three fiscal compensation scenarios, under a nominal rule, for an ESSC tax rate cut of 5 p.c.

(yearly averages in millions of euros, compared to baseline)

	T ₀	T ₁	T ₂	T ₃	T ₄		T ₉
Scenario b.1.II gross wage increase no fiscal compensation	-500	-500	-500	-500	-500		-500
Scenario b.2.II labour cost reduction increased VAT rate	0	0	0	0	-100		-100
Scenario b.3.II labour cost reduction PT rate introduced	-100	-100	-100	0	0		0

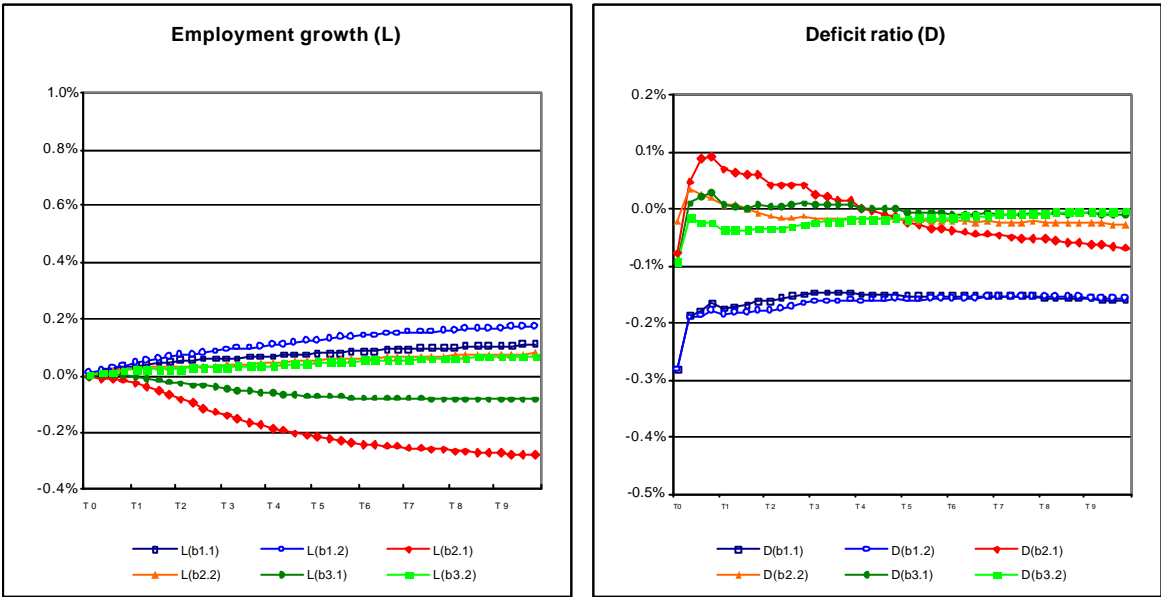
The results for the above scenarios are now summarised in graph 2. It is clear that the greatest, but still rather small, employment impact is seen in scenarios b.1.I and b.1.II, where budget neutrality is not imposed and there is no fiscal compensation. Of course, this scenario would again call for alternative mechanisms for financing social expenditure. In this case, they would almost always completely destroy the positive employment impact of the initial ESSC reduction measure. A real rule is more harmful for employment than a nominal rule, because the former accepts that the nominal labour cost increases beyond

the level fixed as wage norm. Under a real rule, budget-neutral tax shifts now destroy employment.

Under a nominal rule, compensation through a VAT rate increase has a slightly positive effect on employment, whereas a PT destroys employment. The latter produces stronger negative demand effects from export markets as a PT-induced price increase is passed on in export prices, in combination with higher real labour costs. In general, we can say that if ESSC reductions are allowed to be entirely used to finance higher gross wages and if they are fiscally neutralised in one way or another, they do not lead to employment creation, but in many cases actually destroy jobs.

Graph 2 - Employment growth and deficit ratio for three fiscal compensation scenarios, in the case of no effective labour cost reduction, but gross wage increase (ESSC tax rate cut of 5 p.c.)

(percentage points, compared to baseline)



7. CONCLUSION

The wage formation process and the need for budget-neutral fiscal policy measures play an important role in the evaluation of the impact on employment that can be expected from labour tax reductions. In this article, we used a macroeconomic model that captures two important institutional characteristics of wage formation in Belgium, i.e. the automatic indexing mechanism and the wage norm, to analyse the possible employment effects of a budget-neutral reduction in employers' social security contributions (ESSC).

The conclusions of our analysis can be summarised as follows. The employment impact of ESSC reductions is not clear-cut. We showed that this impact depends on the outcome of the wage formation process. The institution of the wage norm in Belgium plays an important role here. The job creation generated by ESSC reductions can only be significant if the reductions lead to an equivalent decrease in labour costs and an equivalent decrease in the relative growth of labour costs compared to our competitors. If the ESSC reductions are completely offset by an equivalent rise in employees' gross wages, which is not entirely unrealistic given a wage norm for overall labour costs (not gross wages), job creation is very limited because there is no favourable relative cost effect in that case.

In any case, the ESSC reductions are only partly self-financing, and the cost per job created is relatively high. So, if the initial level of government expenditure is to be maintained, alternative financing mechanisms are needed. Indeed, a worsening of the government budget is not sustainable. Indirect taxation, in the form of value added tax or a tax on production (e.g. some environmental taxes) can, among other measures not considered in the paper, achieve budget neutrality. Since these indirect taxes are inflationary, the way they impact on wages and labour costs is also crucial. Here, the institution of automatic price indexing of wages plays a crucial role. Although fiscal compensation measures of this kind are in themselves detrimental for job creation, the net employment effect of budget-neutral combinations of tax shifts can still be positive under certain conditions. In general, the alternative financing mechanisms will destroy less of the initial positive employment impact of the ESSC reductions the less their inflationary effects are passed on to wages. In a full and automatic indexing regime, it may be difficult to prevent these effects from being passed on.

The policy conclusion of this analysis is that budget-neutral ESSC reductions can only be an instrument to stimulate job creation in as much as they effectively reduce labour costs, preferably also compared to our competitors. In the best situation, these reductions create as large a gap as possible between the labour cost and the exogenously given wage norm. That is not easy to achieve within the framework of wage formation in Belgium, without a special co-ordination effort between all labour market players.

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