



# 'Klin'-ing up: Effects of Polish tax reforms on those in and on those out<sup>☆</sup>

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## ABSTRACT

In 2007 and 2008 Polish governments introduced a series of reforms which led to a substantial reduction in the tax “wedge” (in Polish: “klin”) on labour. These consisted of reductions in the disability rate of social security contributions (SSCs) and an introduction of an income tax credit for families with children. We show that the SSCs reforms on their own brought much greater reductions in the tax burden compared to a widely discussed 15% “flat tax”, despite a very similar simulated cost. When considered together the package of introduced reforms reduced the mean ATR on total labour cost from 41.6% to 35.7%. This compares to the mean ATR of 39.6% which would result from the introduction of the “flat tax”. In the analysis we present the effects of the reforms both for the employed and for the non-employed populations. The latter analysis is done in such a way as to account for the entire (simulated) distribution of wages of the non-employed and shows interesting differences between the effects of reforms on employed and non-employed individuals. We argue that to fully appreciate the effect of reductions in labour taxation it is important to bear in mind that one of the reasons for introducing them is to make employment more likely for those who currently do not work, and demonstrate that the introduced package has had a particularly important effect on non-employed second earners. Given the extent of the reductions in the “klin” it is somewhat surprising that so far so little attention has been given to the recent Polish reforms.

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## 1. Introduction

Compared to the attention received by the “flat tax” reforms in countries such as Estonia, Lithuania or Russia, the coverage of the recent reforms of the labour costs in Poland has been modest to say the least. This may be puzzling given the significant extent of these reforms and demonstrates that it is often not the content but the form that matters for drawing attention. The high tax “wedge” (in Polish: “klin”) on labour has been long identified as one of the major concerns of economic policy in Poland but until recently reducing it was either a low priority for governments or could not get through the full legislative process because of the presidential veto. It is therefore to some extent surprising that the most significant reduction in the “klin” in Poland since the economic transition begun has been proposed and largely implemented by the J. Kaczyński government,

an administration which could hardly be described as one with a market-oriented economic agenda.

The tax wedge on labour is a potentially important determinant of economic activity. It has been found to be one of the significant factors behind the rapidly growing unemployment levels in Europe since the 1960s, and one of the important reasons why reducing unemployment has proved so difficult.<sup>1</sup> At the same time reduction in taxes on labour has been found to be an important element of recent successful reform packages in Europe (see Nickell, 2001; Annett, 2007). Somewhat surprisingly, given the role assigned to the tax wedge, there is not much detailed analysis of the level and distribution of the tax burden on labour in the countries of Central and Eastern Europe. The issue of the tax wedge is often discussed in the context of an aggregate tax burden and an overall mix of government revenues from different sources. More recent analysis focuses on the implications of introducing the “flat tax”, but also in this strand of the literature it is difficult to find detailed analysis of changes in the distribution of the tax rates

<sup>☆</sup> This paper uses microsimulation tools developed in a project realised for the Polish Ministry of Labour and Social Affairs entitled “Micro-simulation model as a tool in the analysis of the labour market” funded by the European Social Fund (see: [www.cenea.org.pl](http://www.cenea.org.pl) and [www.simpl.pl](http://www.simpl.pl) for details). Data from the Polish Household Budgets' Survey have been provided by the Polish Central Statistical Office. We are grateful to seminar participants at the Department of Economics at the University of Warsaw for helpful comments. We would also like to thank an anonymous referee for very useful suggestions. The usual disclaimer applies.

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<sup>1</sup> See for example the discussions in Layard and Nickell (1986), Lockwood and Manning (1993), Nickell (1997), Sieberst (1997), Nickell (1998) Fiorito and Padrini (2001), and Saint-Paull (2004). In Nickell et al. (2005) the authors estimate that institutional changes contributed to about half of the increase in unemployment in Europe between 1960s and 1990s. Of this half about a fifth has been estimated to relate to taxes on labour. For an interesting analysis of changes in marginal tax rates in Canada see Davies and Zhang (1996).

following the reforms, and even more so some comparative analysis of consequences of potential counterfactual policy options.<sup>2</sup> One of the important roles assigned to the reforms reducing the tax burden on labour is their potential effect of stimulating employment demand and increasing incentives to take up jobs. However, to the best of our knowledge there are no studies which would attempt to demonstrate the difference in the tax wedge between those in and out of employment, and analyse implications of tax reforms on those out of work.

In this paper we demonstrate the extent of the change in the cost of labour which resulted from two sets of reforms announced by the J. Kaczyński government in 2007, and introduced in July 2007 and January 2008 (already by the next government who confirmed the pre-announced changes). These reforms on the one hand reduced the employee and employer rate of disability social insurance, and on the other introduced an income tax credit for families with children. We contrast the extent of these two reforms with the reduction in labour costs which would result from an introduction of a single rate income tax proposed at the time by the liberal “Civic Platform” party (Platforma Obywatelska, PO). The analysis is implemented using the Polish micro-simulation model, SIMPL, applied on the data of the Household Budgets’ Survey from 2005. The SIMPL model allows us to take account of the distribution of labour incomes and to combine this with households’ demographic characteristics.

The package of reforms introduced in 2007/2008 proves to reduce the tax burden on those observed as working significantly more than the simulated version of the “flat tax” and we find very interesting differences in the effects of the reforms between the employed and the non-employed populations. The latter effects of tax reforms usually go unnoticed and as such are in our view insufficiently appreciated. As we demonstrate, different wage distributions and demographics of those out of the labour market imply very different distributions of the tax burden and significantly different consequences of the reforms in comparison to the employed population. In particular we show that the introduction of the tax credit for families with children has had a very strong effect on non-employed partners in one-earner couples. The exercise is conducted in such a way so as to be able to account for the entire (simulated) wage distribution of the non-employed population, and to the best of our knowledge it is the first such application. As a result of the introduced reforms the mean ATR on total labour cost fell from 41.6% to 35.7% among the employed population. The reforms reduced the mean ATR among the non-employed from 38.5% to 33.5% among potential first earners and from 44.2% to 36.7% among the potential second earners.

The paper is structured as follows. In Section 2 we present a discussion of the different elements of the tax wedge in Poland in the baseline scenario and discuss the implemented reforms. Four broad components of labour costs constitute this tax wedge: employer social security contributions (SSCs), employee SSCs, health insurance and income tax.<sup>3</sup> In Section 3 we present the details of the computation of the marginal and average rates of the “klin”, and describe our approach to the analysis of the non-employed. The data used in the analysis from the Polish Household Budgets’ Survey (2005) and the

<sup>2</sup> An early interesting survey of tax policy and unemployment with policy implications for transition countries can be found in Zee (1996). For a recent paper on the comparison of sources of government revenue between different groups of countries see for example Mitra and Stern (2003). For interesting discussion of the “flat tax” reforms in Central and Eastern Europe see for example Stepanyan (2003) and Keen et al. (2007).

<sup>3</sup> In the analysis we consider the entire difference between the total labour cost and net earnings to constitute the tax wedge, which is the most common definition in the literature. Note, however, that as rightly pointed out by Disney (2004) the matter is more complicated than that with some elements of the wedge representing future rights to benefits of the contributors in the form of PAYG or funded pensions. Moreover, in some studies at the aggregate level the tax wedge is considered to be the difference between the total labour cost and real consumption, i.e. accounts also for indirect taxation (see for example Nunziata (2005)).

**Table 1**  
Social security contributions in Poland, 2005.

Employee SSCs	
– Retirement insurance	9.76%
– Disability insurance	6.50%
– Sickness insurance	2.45%
Employer SSCs	
– Retirement insurance	9.76%
– Disability insurance	6.50%
– Work accident insurance	1.93%
– Labour Fund	2.45%
– FGEB	0.15%
Annual threshold for retirement and disability SSCs	72,690 PLN

Notes: FGEB stands for the Fund of Guaranteed Employee Benefits.

subsets of the data we use are presented in detail in Section 4. In Section 5 we put the systemic elements together with wage distributions and demographic characteristics and present the distributions of the average and marginal taxes on labour in Poland under the baseline scenario and under the reformed systems. On top of that we compute the distribution of tax rates under the hypothetical 15% “flat tax” scenario, the introduction of which has been proposed in Poland in 2005. Our analysis is first conducted for the sample of employed individuals (5.1) and subsequently on the sample of the non-employed (5.2). Section 6 concludes.

## 2. Taxes on labour in Poland

Let's consider the simplest case of a single individual whose only source of income is income from employee work. Then under the Polish system the net income from work  $\Psi$  of individual  $i$  can be expressed as:

$$\Psi_i = \Omega_i - SSC_{1i} - SSC_{2i} - HI_i^{NFZ} - IT_i^f. \quad (1)$$

Net earnings,  $\Psi_i$ , is a function of the individual total labour cost  $\Omega_i$  reduced by the amounts of employer's SSCs ( $SSC_{1i}$ ), employee's SSCs ( $SSC_{2i}$ ), health insurance ( $HI_i^{NFZ}$ ) paid to the National Health Fund (NFZ) and income tax paid to the fiscal authorities ( $IT_i^f$ ). All these elements are a function of the total labour cost, although the rates and schedules are applied to its different components. The rates of the SSCs (both employer and employee) apply to the “gross earnings” defined as:  $\Omega_i - SSC_{1i}$  and labelled as  $\pi$ . The Health Insurance and the Income Tax schedules are applied on the so-called taxable income (labelled as  $\omega$ ), defined as  $(\Omega_i - SSC_{1i} - SSC_{2i})$ .

In Tables 1 and 2 we present a summary of the rates respectively of the social security contributions and income taxes which applied in Poland in 2005. The 2005 system, i.e. the system that was in place in the year the data was collected, is taken to be the baseline scenario for our analysis. The SSCs are divided into the employer and employee components and the rates are presented with reference to gross earnings,  $\pi$ . The SSCs retirement and disability rates applied to all employee earnings up to an annual threshold of 72,690 PLN (€18,060).<sup>4</sup> In 2005 the retirement and disability pension insurance was divided equally between the employer and the employee, but some other elements of the insurance were paid entirely by the employer (Work Accident Insurance, Labour Fund contributions, and the Fund of Guaranteed Employee Benefits) or entirely by the employee (Sickness Insurance).<sup>5</sup>

Taxable income, i.e. total labour cost net of the SSCs is subject to health insurance, charged at the rate of 8.5%, most of which (7.75

<sup>4</sup> All values in the article are given in the Polish zloty (PLN). The average PLN/€ exchange rate in 2005 was €1 = 4.03 PLN. Some selected, most important values in the text are given both in PLN and in €.

<sup>5</sup> The SSCs threshold for retirement and disability insurance is determined as a multiple of 30 of the expected average monthly gross earnings in the economy for a given year.

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