

Document de travail

LABOUR MARKET ADJUSTMENTS IN ESTONIA DURING THE GLOBAL CRISIS

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Abstract

This article provides an assessment of labour market adjustments occurring in Estonia during the global crisis. As part of the so-called internal devaluation, the strategy followed was very successful in shrinking the unit labour costs, thus helping Estonian enterprises to gain international competitiveness. The whole gamut of tools available in terms of flexibility was used, at least in the worst time of the financial crisis: massive lay-offs, reduced working time and wage cuts. At mid-2011, Estonia stood as one of the most dynamic EU country to recover with exports growth. On the social side, however, the track record is not as positive: the purchasing power of workers has been reduced and unemployment still remains strong and persistent despite the economic recovery.

Keywords: Labour market, crisis, Estonia, internal devaluation

JEL codes: F33, F41, J30, J01.

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1. Introduction: a buoyant economy building disequilibria in the pre-crisis period

When entering the European Union (EU) in 2004, Estonia was a very dynamic economic, with a GDP growth of 8.2 % per year in average over 2000-2003. Good and even better economic performances were recorded in the years following its EU accession until the financial crisis: GDP growth was 8.6 % per year over 2004-2007, with some signs of slowdown in the turning of 2008, thought. The unemployment rate decreased continuously throughout the period to reach 4.7 % in 2007, its lowest level since the transition towards market economy in Estonia.

However, the growth model of Estonia was no longer sustainable as too largely based on domestic drivers¹. In particular, the private consumption, financed by widespread credit to households and very dynamic wages, was the most important contributing factor to GDP over 2004-2007, accounting for 67 % of GDP growth over the period (against 56 % over 2000-2003). By contrast, external drivers were working poorly and, Estonia accumulated a huge current account deficit, reaching 17 % of GDP in 2007. Yet, consumption goods accounted for the bulk of trade balance disequilibria, with intermediate and investment goods mainly in balance and, primary goods in a slight surplus (Antonin and Levasseur, 2010).

In terms of economic activity sectors, such a growth model means that the manufacturing sector made a low contribution to GDP growth, in particular in the pre-crisis period (Price and Wörgötter, 2011). For instance, in 2007, the manufacturing sector contributed for only 9 % to the GDP growth (against 27 % over 2000-2003) while those of construction, wholesale & retail trade, financial intermediation and real estate contributed altogether for 63 % (49 % over 2000-2003).

To some extent, the year 2004 was a turning point in Estonia: the domestically-based growth model was endorsed, fuelled by credit to households and financed by foreign debt. It was accompanied by a boom in real estate and construction sector. Last, labour shortages – or, fear of labour shortages, due to the possibility for Estonian workers to work in other EU countries – exerted strong pressures on wages growth. In particular, wages growth was largely exceeding labour productivity growth, which undermined the competitiveness of Estonian companies (Levasseur, 2009; Rosenberg, 2008; Purfield and Rosenberg, 2010). Over-optimistic expectations about the future – with a lot of them related to EU membership – were another explanatory factor for both large wage increases and household credit boom. At this time, Estonia, altogether with Latvia and Lithuania, were called the Baltic tigers.

However, in the course of winter 2007, the first signs of slowdown were already present and Estonia faced mounting external pressures (Rosenberg, 2008). Then, when Lehman Brothers went into bankrupt in September 2008, Estonia experienced large capital outflows, thus precipitating further its economy into recession². At this time, Estonia had to decide for devaluating or not the external value of its currency and finally opted to maintain its currency board with further steps undertaken for a speedy euro adoption³. Instead a strategy of internal

¹ The two other Baltic States (namely Latvia and Lithuania) share a lot of similarities with Estonia in terms of growth model (see Brixiova, Vartia and Wörgötter, 2009; Darvas et al., 2011; European Commission, 2010; Levasseur, 2009).

² To a very large extent, Latvia and Lithuania followed a similar path than Estonia. In December 2008, Latvia had to ask for a bailout from the European Union and the IMF while maintaining its fixed exchange rate arrangement.

³ See Box 1 on the arguments against a currency devaluation in Estonia.

devaluation consisting in curbing wages to gain a competitive edge by pushing down local prices was implemented under the impetus of government. Another component of the strategy was a tightening in public expenditures to help to push down prices, reinforcing credibility and meeting the 3 % limit in fiscal deficit of the Maastricht criteria to adopt the euro. Yet, in the course of 2009, further flexibility on labour market and greater social security provisions to workers were legislated to tackle the recession.

The economy of Estonia has been strongly hit by the global crisis: the GDP has fallen by 5 % in 2008, then by 13.8 % in 2009. According to the updated forecasts of the Ministry of Finance, the GDP would grow by some 7 % in 2011, after 3 % in 2010.

The goal of this article is to analyse the adjustment of the Estonian labour market in the context of the global crisis. In particular, did it succeed in restoring competitiveness of the economy? How harmful for workers was the strategy of internal devaluation? The remaining of the article is as follows. Section 2 gives a decomposition of the dynamics in unit labour costs, thus adopting the viewpoint of an employer. We consider the unit labour cost for the total economy and the manufacturing sector, with a focus on the latter as this sector is more concerned by international competition. Section 3 adopts the viewpoint of workers by analysing the impact of adjustments on workers in terms of purchasing power and employment opportunity. Section 4 presents briefly features on institutions and societal characteristics of Estonia. Then, section 5 provides an overview on the gains of international competitiveness due to the strategy of internal devaluation. Section 6 concludes.

Box 1 : Arguments against a currency devaluation in Estonia before adopting the euro*

- *The devaluation would have caused a surge in inflation through imports prices*

The prices of final consumption goods which are imported would have been lifted up as well as those of intermediate and raw materials which are imported to be processed in Estonian products. That would have caused a surge in consumer price index (CPI), thus delaying the euro adoption which requires a low CPI inflation to be selected. Another consequence would have been probably an unbroken “price/wage” spiral, as workers would have required higher nominal wages to compensate for higher inflation.

- *The devaluation would have been harmful for borrowers who have loans denominated in euros as their repayment would have grown from the same amount than the devaluation*

In Estonia, around 90 % of private loans are denominated in euros. Yet, some households are very heavily indebted (Herzberg, 2010). Without any discount, they would have gone into bankrupt in case of a currency devaluation amounting 15-20 % (as evaluated by commentators), causing in turn losses in the banking sector.

- *The positive effects of a devaluation on exports would have been small, anyway.*

In particular, in a context of a weak global demand [as in 2008/2009], no strong increase in exports could be expected from a devaluation.

- *Other negative aspects included a loss of credibility, thus resulting in a higher international borrowing cost*

* To a very large extent, similar arguments against devaluation hold for the two other Baltic states.

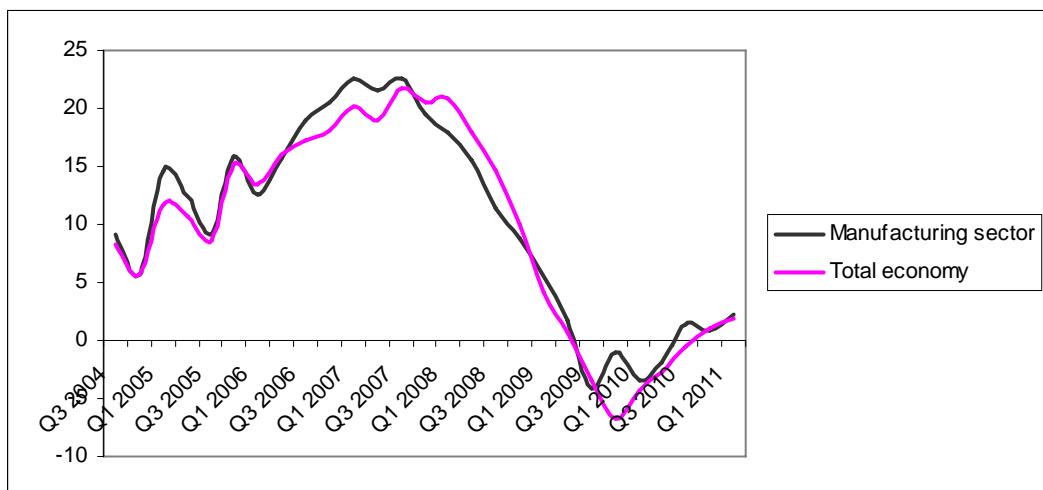
2. A decomposition of the dynamics in unit labour costs during the crisis

This section aims at giving insights on how labour unit costs have developed in Estonia since the beginning of the global crisis. We adopt an *hourly* perspective rather than a *per worker* perspective to stand out how employers have used the worked hours *per worker* to adjust the impact of global crisis⁴. In the appendix, we provide a technical note on the decomposition of unit labour costs or, put differently, of the “wage bill”.

2.1. The fall in wages and its impact on labour cost

At the very beginning of the global crisis, it became clear that the previous wages policy implemented in Estonia – as well as in the two other Baltic states – should be halted, as the wage growth was largely outstripping the productivity growth (Levasseur, 2009; Purfield and Rosenberg, 2010). The government of Estonia decided some cuts of wages in the public sector, hoping for a “demonstrating” effect on the private sector. Looking at data, it appears that the nominal labour cost have decreased substantially (Graph 1): its growth rate while peaking at more than 20 % at the end of 2007 turned to be negative in the course of 2009. The fall in nominal labour cost was smaller and shorter time lasting in the manufacturing sector than in other sectors of the economy, thought. The largest cumulated falls in nominal labour costs have been recorded in construction sector, then in public services (Table 1). In the first quarter of 2011, the hourly labour costs in public and market services stood at 7.1 euros *per hour*, which was slightly above the average for the total economy.

Graph 1: Nominal *hourly* labour cost in Estonia (growth rate, in %)



Source : Central bank of Estonia.

⁴ Hijzen and Venn (2010) provide evidence that reduction in working time has been used in 16 OECD countries out of 19 during the global crisis. See as well Cahuc and Carcillo (2011) on short-time work schemes adopted to tackle the recession.

Table 1: Nominal *hourly* labour cost in Estonia, by large sector

	Growth (year-to-year), in %				Level 2011Q1 in euros
	2008	2009	2010	2011Q1*	
Total	15.8	-1.3	-1.6	1.8	7.0
Manufacturing	13.4	0.5	-0.8	2.2	6.7
Construction	12.4	-7.7	-1.3	-4.2	6.9
Market services**	15.1	0.0	-4.6	4.8	7.1
Public services**	18.9	-3.6	2.2	-1.1	7.1

* With respect 2010Q1.

** The public services consist of public administration, defense and compulsory social security, education and health sectors. The market services consist of remaining services sectors.

Source : Central bank of Estonia; computations of the author.

However, once considered the prices development in Estonia, there is no doubt that the real labour cost in the manufacturing sector has substantially decreased over 2010 (Table 2). In particular, the hourly labour cost decreased by 6.8 % in 2010 when the export price index is used as a deflator (4.4 % when the producer price index is used). As a result, 2010 was very successful in alleviating labour costs of Estonian enterprises. A similar conclusion holds for the first quarter of 2011 (last data available): the hourly labour cost deflated by either the export price index or the producer price index is pursuing its decreasing trend (respectively -7.2 % and -3.6 %).

**Table 2: Real *hourly* labour cost in manufacturing sector of Estonia
– different index prices –**

	2008	2009	2010	2011Q1*
Producer price index (PPI) deflator	7.4	2.8	-4.4	-3.6
Export price index (EPI) deflator	9.2	4.2	-6.8	-7.2

* With respect 2010Q1

Source : Central bank of Estonia; computations of the author.

2.2. The fall in employment and hours worked

In Estonia, employment began to drop sharply as soon as the very beginning of the global crisis. In particular, in the manufacturing sector, some 15.5 % of the workforce was lay-off over 2009, and another 5.7 % over 2010 (Table 3). For the total economy, employment decelerated by respectively 10 % and 4.7% over 2009 and 2010.

Changes in worked hours – due to part-time working plans or unpaid holidays – had a huge protecting effect on Estonian employment, especially in 2009. According to Bank of Estonia (2010), some 50,000 jobs would have been saved as early as the first quarter of 2009 due to reductions in working time (Graph 2). That would account for more than 7 % of the Estonian labour force. The average hours worked *per* worker have declined by 1.1 % in 2008, and then by 2.3 % in 2009 (Table 3). The reduction in working time was even larger in the manufacturing sector, especially in 2009 with a decline of 3.2% in the average hours worked *per* worker. With the recovery in 2010, the average hours worked have been adjusted upward,

increasing by 2.1 % in the total economy and 5.1 % in the manufacturing sector.

Table 3: Decomposing growth of *hourly* labour productivity in Estonia

Total economy ^{a)}	Productivity	Value added	Employment	Hours
2008	-4.1	-5.0	0.2	-1.1
2009	-1.5	-13.8	-10.0	-2.3
2010	5.6	3.0	-4.7	2.1
2011Q1*	-0.4	8.5	6.5	2.4
Manufacturing ^{b)}	Productivity	Value added	Employment	Hours
2008	-5.5	-3.8	2.9	-1.3
2009	-6.1	-24.8	-15.5	-3.2
2010	20.9	20.4	-5.7	5.1
2011Q1*	3.9	28.9	22.6	2.4

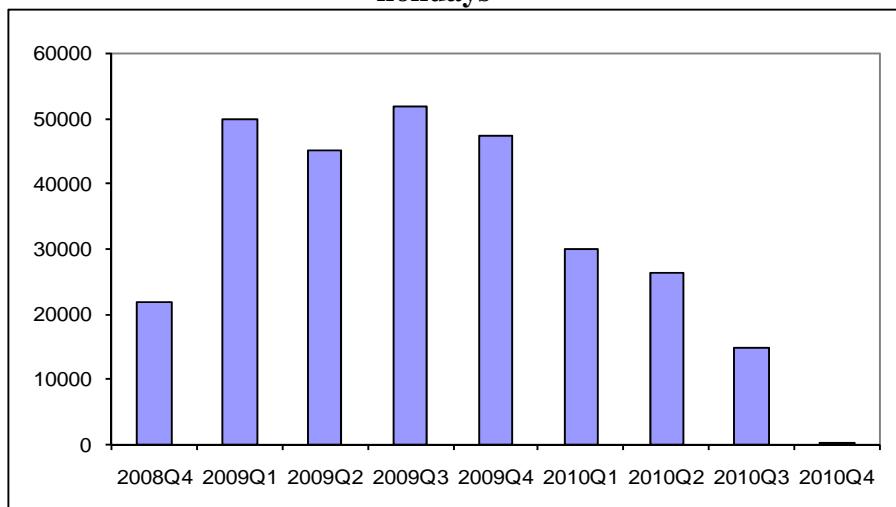
* With respect 2010Q1

^{a)} GDP at market price, chain-linked volume.

^{b)} Value added, chain-linked volume.

Source : Central bank of Estonia; computations of the author.

Graph 2: Number of jobs saved in Estonia due to part-time working plans or unpaid holidays



Source: Bank of Estonia (2010); updated by the author for 2010Q2-2010Q4.

2.3. The impact on *hourly* productivity and (real) unit labour cost

As summarized in Table 3, the hourly productivity in the Estonian manufacturing sector was considerably deteriorated in 2008 and 2009 while substantially recovering in 2010. Over 2009, the massive layoffs (-15.5 %) and reduction in hours worked (-3.2 %) were not sufficient to compensate the dramatic fall in the volume of value added in the manufacturing sector (-24.8 %): the productivity *per* hour declined by 6.1 %. Over 2010, as the economic situation improved, the demand of labour was immediately met by increases in working hours (+5.1 %) while employment initially continued to decline (-5.7 %). With a 20.4 % growth in value added, the productivity *per* hour in the Estonian manufacturing sector surged by 20.9 %. For the total economy, the growth rate of productivity *per* hour in 2010 is less impressive (+5.6 %), but still in line with its pre-crisis levels.

Combined with developments in hourly labour cost (reported in tables 1 and 2), it is clear

that the (real) unit labour cost increased sharply throughout 2008 and 2009 while turning strongly negative over 2010 (Table 4). This substantial improvement of competitiveness in 2010 has helped considerably Estonia in resuming with export-led growth (see below). The real unit labour cost continued to decline during the first quarter of 2011, albeit to a lesser extent than over 2011.

**Table 4: Growth of real *hourly* unit labour cost in manufacturing sector of Estonia
– different index prices –**

	Producer price index (PPI) deflator	Export price index (EPI) deflator
2008	12.9	14.7
2009	8.9	10.3
2010	-25.3	-27.7
2011Q1*	-7.5	-11.1

* With respect 2010Q1

Source : Central bank of Estonia; computations of the author.

3. The labour market adjustment in Estonia during the crisis and its impact on workers

3.1. Its impact on purchasing power of workers

While the fall in labour costs allowed Estonian firms to restore their international competitiveness, that came at a cost of a lower purchasing power for Estonian workers. In particular, a reduced working time, combined with a fall in wages, have induced a drop in *monthly* net wages of employees in 2009. With virtually no consumer prices inflation, the drop was around 4.5 % in 2009 in both nominal and real terms (Table 5). Another contributing factor to the drop was the rise of unemployment insurance premium, from 0.6 % to 2 % in June 2009, and then to 2.8 % in August 2009. Throughout 2010, the real monthly net wages continued to decline (-3.2 %), mainly as a result of a surge in consumer prices inflation which was largely driven by food and commodity prices. In the first quarter of 2011, higher hourly wages and working time were not sufficient to compensate vigorous consumer prices inflation: the real monthly net wages decreased by 1.1 %. To sum up, the cumulated loss of purchasing power for an Estonian employee has been 8.8 % since 2009 or, scaled differently, equivalent to 18.6 % of his gains in purchasing power obtained over 2004-2008.

Table 5: Growth of *monthly* net wages in Estonia (in %)

	Nominal (net)	CPI inflation	Real (net)
2008	15.1	10.4	4.7
2009	-4.6	-0.1	-4.5
2010	-0.2	3.0	-3.2
2011Q1**	4.3	5.4	-1.1

* Net from labour taxes and unemployment insurance premium.

** With respect 2010Q1

Source : Central bank of Estonia; computations of the author.

3.2. Its impact on unemployment

The economic crisis has had huge consequences on unemployment. According to the

Labour force Survey, the unemployment rate steadily increased as soon as the fall of 2008, tripling between 2008 and 2009 to reach 13.8 % in 2009 and then 16.9 % in 2010 (Table 6). Figures reported by the Estonian Unemployment Insurance Fund are lower as some unemployed persons are not registered to the Fund⁵. But the two alternative unemployment rates are in line, with a rise from 2008 to 2010 and then a decrease over the first semester of 2011. At the end of June 2011 (last figures available), the unemployment rate stood at 13.3 % according to the Labour force Survey and 8.1 % according to the Estonian Unemployment Insurance Fund.

Table 6: Some statistics on unemployed and unemployment benefits

	2008	2009	2010	2011S1
Unemployment rate (in %) according to				
• Statistics Estonia (based on Labour Force Survey)	5.5	13.8	16.9	13.9
• Estonian Unemployment Insurance Fund (based on registrations)	3.0	10.2	12.3	9.5
Share of unemployed receiving unemployment benefits (insurance and allowances)				
• as a share of new registered unemployed (in %)*	73%	77%	65%	51%
• as a share of total registered unemployed (in %)*	56%	60%	46%	36%
• as a share of total unemployed (in %)**	31%	44%	33%	25%
Average unemployment insurance benefit payment (per beneficiary and month)				
• in euros	228	284	263	254
• as a share of minimum wage (in %)***	82%	102%	95%	91%
Unemployment rate (in %) by groups**				
Sex • Male	5.8	16.9	19.5	..
• Female	5.3	10.6	14.3	..
Age • 15-24 old	12.0	27.5	32.9	..
• 25-54 old	4.8	12.9	15.2	..
• 55-64 old	4.1	9.4	16.2	..
Citizenship • Estonian	4.2	11.0	13.4	..
• Non-estonian	8.2	19.0	23.4	..
Education • Low educated (below upper secondary education)	12.0	28.6	30.9	..
• Middle educated (secondary education)	5.8	15.8	19.3	..
• High educated (tertiary education)	2.9	6.2	9.3	..

* Based on unemployed people registered to the Estonian Unemployment Insurance Fund.

** Based on unemployed people according to the Labour Force Survey.

***The minimum wage is set to 278 euros per month since 2008.

Sources: Central bank of Estonia; Estonian Unemployment Insurance Fund; own computations.

Among groups, those of males, young, non-Estonians and low-educated have suffered the most from labour market adjustments, falling in unemployment relatively more than females, middle-aged, Estonians and high-educated (Table 6). In particular, the highest unemployment rate is for the group of young, with 33 % of them to be unemployed in 2010. People with a low-education constitute another group where unemployment rate stood at a high level (almost 31 % in 2010). Yet, with the global crisis, long-term unemployment has surged: some 45 % of unemployed were without job since more than 12 months in 2010 (against 31 % in 2008) while those in unemployment since less than 6 months accounted for 33 % (against 53 % in 2008).

⁵ Registration depends on the position over the business cycle as well as the benefits accompanying the registration (unemployment insurance, unemployment benefits, health insurance and training courses). As the legislation regarding benefits changed in mid-2009 to become more generous, the share of registered unemployed in total unemployed jumped from 55 % in 2008 to 74 % in 2009.

Despite the recovery in 2010 and 2011, the unemployment rate remains high in Estonia for several reasons. First, gains in productivity have allowed to produce *ceteris paribus* more goods and services *per* employee, thus reducing the need of hiring new workers to face higher demand for goods and services. Yet, the negative side of flexible working time arrangement is that a recovery in production does not induce necessarily a recovery in employment of same magnitude, as a higher need for hours worked is fulfilled by incumbent workers (see Table 3). Second, the pre-crisis structure of the economy is no longer sustainable. Workers from previous booming sectors (construction, real estate), which lost their job during the crisis, could not get a job in the same sectors: they have to be trained to get a job in sectors where recovery occurs. In particular, employment in construction sector accounted for 87,400 persons at its peak (reached in the third quarter of 2007) or, put differently, for more than 13 % of total Estonian employment. Currently, some 52,000 persons are engaged in the construction sector, thus regaining “only” 11,400 persons since the trough. At the same time, as 52,000 persons corresponds roughly to the number of engaged at the beginning of the boom in construction sector, there is little hope to get massive employment opportunity in construction sector in the future.

3.3. Its impact on benefits of unemployed

Looking at benefits, due to changes in legislation (see Box 2), the share of unemployed receiving unemployment benefits has increased in 2009, to amount 77 % of new registered, 60 % of total registered and 44 % of total unemployed (Table 6). However, with the protracted period of bad economic times, the share of unemployed receiving benefits has decreased steadily, with only 51 % of new registered receiving unemployment benefits over the first semester of 2011 as more unemployed entered the labour market without meeting the requirements for receiving benefits (mainly young people). As a share of total registered, a slightly more than one third (36 %) have received benefits while the figure falls at 25 % for the share of total unemployed, which is clearly a small percentage.

The average unemployment insurance benefit payment *per* beneficiary has increased in 2009 to reach 284 euros, accounting for slightly more than 100 % of the Estonian minimum wage. As the minimum wage stands at a particular low level in Estonia (accounting for 35 % of the average national wage in 2009 against 60 % in most EU countries), that means that the unemployment benefit system is not particularly generous despite steps taken towards higher provisions with the new Employment Contracts Act (see Box 2). The degressivity of the unemployment benefit, combined with a longer time in unemployment, has induced a decrease in the average unemployment benefit payment over the time: for the first semester, it amounts at 254 euros or a little more than 90 % of the Estonian minimum wage.

3.4. Its impact on migrations

In Estonia, net emigration has substantially recovered in 2010 to reach around 2,500 persons (or 1.9^{0/00} of population) against 700 persons *per* year over 2008-2009 (Table 7). Two main flows explain the recovery in net emigration. First, there is a rebound in outflows, especially towards Finland which constitutes the main country of destination of emigrants. Estonian citizens accounted for the bulk of this outflow (+17.4 % over 2009/2010). Second, inflows of population have recorded a very sharp decline, especially those of non-Estonian citizenship (-46.2 % over 2009/2010). By contrast, the so-called return immigration has only slightly declined over 2008-2010.

A high persistency of unemployment in Estonia, despite the economic recovery in 2010, has prompted some Estonian workers to go abroad (and, in first instance, in Finland where wages are higher). Similarly, workers from abroad have found lower incentives to enter Estonia where employment opportunities were reduced, especially in the construction sector which attracted a large share of immigrants in Estonia during the pre-crisis period⁶. Rather paradoxically, if outflows of Estonians workers were to continue in the future, this would create again a shortage of some skills (or at least a mismatching) as experienced in the pre-crisis period, thus exerting again wage pressures. If a portion of wage increases observed since the beginning of 2011 (Table 1) may be explained by a recovery of emigration is however out the scope of this paper as no data are available for the first quarters of 2011.

Table 7: Outflows and inflows of population in Estonia

Emigration (A)	Total	Share of Estonian citizenship	Share of non-Estonian citizenship	1 st country of destination Finland
2008	4406	88%	12%	62%
2009	4658	85%	15%	59%
2010	5294	88%	12%	66%

Immigration (B)	Total	Share of Estonian citizenship	Share of non-Estonian citizenship	1 st country of origin: Finland
2008	3671	47%	53%	31%
2009	3884	43%	57%	31%
2010	2810	57%	43%	36%

Net emigration (A)-(B)	Total	in ‰ of population
2008	735	0.6
2009	774	0.6
2010	2484	1.9

Source : Central bank of Estonia; computations of the author.

4. Discussion on institutional and societal characteristics of Estonia

So, how explaining that the labour force in Estonia accepts a so painful adjustment in terms of wages cuts and lower employment protection? In particular, why there was much more downward flexibility in the wages of Estonia than anywhere else in Europe during the crisis (Table 8)? This is quite surprising for a lot of observers. While the magnitude of the crisis in Estonia (compared to other EU countries) may be a relevant explanatory factor, other explanations are rooted in the institutional framework as well as in societal characteristics of the country.

First, the coverage rates of collective bargaining in Estonia are very low by any standard, with only 12 % of firms with a collective bargaining agreement (Table 8). That corresponds to less than 9 % of Estonian employees covered by collective bargaining agreements. Such

⁶ For a deep analysis of the pre-crisis migration in the Baltic labour markets, the reader will consult Hazans and Philips (2011).

figures contrast sharply with those reported for other EU countries. In a very deteriorated economic environment – when fears to be unemployed were growing and employment opportunity abroad was reduced –, that means that Estonian workers had only a modest bargaining power to avoid wage cuts. Moreover, as trade unions play a role of minor importance in Estonia, they could neither oppose to some practices such as a reduced working time and forced leaves without any monetary compensation.

Second, after several years of wage euphoria in the pre-crisis period, workers may have expressed little reluctance to accept wage cuts. Let's keep in mind that over 2002-2008, the monthly net wage has been multiplied by 2.2 in Estonia, which tends to minimize the wage cuts observed in the onset of the global crisis (Table 4). Workers themselves may have found that something was going wrong or was “too good to last”. Only little social unrest was recorded in Estonia when the government announced wage cuts in the public sector, thus signalling some acceptance by the population.

Third, and related to the previous point, wage cuts may have been viewed as the ultimate sacrifice towards a full integration into the European sphere⁷. The euro adoption was a key goal in Estonia and devaluating the currency would have delayed this prospect for a very long time. Estonia would have thus turned its back on nearly twenty years of fixity with respect the Deutsch Mark and then the euro through its currency board.

⁷ See Dombrovski and Åslund (2011) for a similar argument in the case of Latvia.

Table 8 : Wages cut/freeze and collective bargaining in international comparison

	Share of enterprises cutting wages*		Share of enterprises freezing wages*		Collective bargaining agreement**	
	Did cut	Plan to cut	Did freeze	Plan to freeze	% of firms with	% of employees covered by
Austria	1.7	1.5	1.8	8.4	97.8	94.6
Belgium	1.0	1.8	23.7	4.4	99.4	89.3
Czech republic	9.0	3.2	54.6	11.7	54.0	50.2
Cyprus	1.8	2.0	20.6	5.9
Estonia	44.1	38.6	61.5	64.6	12.1	8.7
Spain	2.6	0.5	26.7	3.7	100.0	96.8
France	1.9	4.7	86.0	83.8	99.9	67.1
Luxembourg	2.0	4.3	31.7	62.8
Italy	0.3	0.3	46.8	44.5	99.6	97.0
Netherlands	2.6	3.8	15.2	8.7	75.5	67.6
Poland	4.2	1.6	18.0	8.1	22.9	19.3

* Share of enterprises (in %) that have reduced/frozen wages from autumn 2008 to summer 2009 or planned to do. Based on a survey of enterprise managers carried out by central banks of 10 EU member States within the Wage Dynamic Network.

** Either at a "firm-level" or a "higher level".

Source : Tari Room (2010); Babecký et al. (2010)

Box 2: The new Employment Contracts Act of 2009*

On the 1st July 2009, the new Employment Contracts Act entered into force, changing significantly the labour law in Estonia. Its aim was to make the labour market more flexible while enhancing the social security provisions for workers.

- *Measures for a greater flexibility*⁸

With respect *working time*, under the new Employment Contracts Act, the employers are no longer obliged to get the permission from the Labour Inspectorate to reduced working time. As under the previous law, employers have the right to implement reduced working time for a maximum of three months during a one-year period. No monetary compensation for time not worked is offered to workers. That differs from the German system – for instance – which offers a 60 % compensation to workers.

With respect *lay-offs*, the dismissal procedure is made easier by reducing the term of advance notice for terminating an employment contract. For instance, the term of advance notice becomes 15 calendar days if employment relationship is shorter than 1 year and 30 calendar days for employment relationship of 1 to 5 years. To compensate for that, the employer is obligated to provide free time to the employee for job-seeking after giving the advance notice.

With respect the *financial burden of lay-off compensations*, their payment is now distributed between the employer and the Estonian Unemployment Insurance Fund. In all cases, the employer will pay a lay-off compensation amounting to one month's average wage of the employee. For employment relationship of 5 to 10 years, one additional month of lay-off compensation will be paid by the Unemployment Insurance Fund to the employee (two additional months in case of a relationship over 10 years). The rationality behind such distribution in the financial burden of lay-off compensations is to allow employers to invest in their companies, to continue offering jobs and create new jobs when the situation improves (Tur and Viilmann, 2009).

With respect *employment contracts*, the conclusion of fixed-term contract is allowed in all cases.

- *Measures for improving the social security provisions*

With respect *taxes*, the unemployment insurance premiums were increased to cope with the decreasing financial resources of the Estonian Unemployment Insurance Fund in a context of higher lay-offs. The unemployment insurance rates paid by the employees raised from 0.6 % over 2006-May 2009 to 2 % in June 2009 and then to 2.8 % in August 2009. For employers, the corresponding increases were from 0.3 % over 2006-May 2009 to 1 % in June 2009 and then to 1.4 % in August 2009.

With respect *benefits*, the unemployment insurance system becomes more generous. In particular, the unemployment insurance benefit was increased from 50 % to 70 % of the previous average remuneration during the first 100 days of unemployment, and from 40 % to 50 % after that period. In addition, the circle of persons eligible for unemployment insurance benefit is enhanced to include, for instance, those who terminated their employment relationship voluntarily.

- *Other measures for fighting unemployment*

With respect *job matching and training programs*, financing is enhanced by using EU funds with the goal to absorb new labour force (students) and workers formerly employed in overheating sectors (construction, real estate) and, more generally, to avoid long-term unemployment.

*The reader can consult Tur and Viilmann (2009) or EIROonline at <http://www.eurofound.europa.eu/eiro/>

⁸ Lehmann and Muravyev (2011) present evidence that lower employment protection legislation (EPL) enhances labour market outcomes (in the sense of lower unemployment rates and higher employment rates).

4. Impact on competitiveness of Estonian enterprises

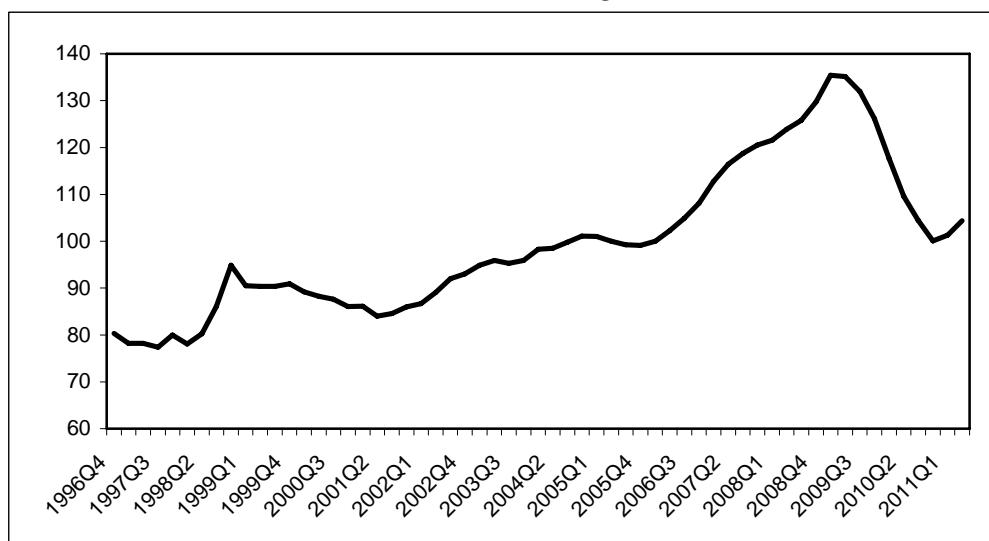
While it may be still premature to provide a definitive assessment on how successful was the strategy of wage cuts in Estonia, we can give some preliminary positive indicators.

First, either based on the producer price index (PPI) or the unit labour cost (ULC), the real effective exchange rate of Estonia in manufacturing sector is well oriented. Thus, by end-June 2011, the ULC-based real effective exchange rate had fallen from its peak (reached in the first quarter of 2009) by 23%, and that, in a context of moderate currency depreciations of its main trade partners. This allowed to fully cancel the appreciation in the ULC-based real effective exchange rate that occurred since end-2006 in Estonia (Graph 3).

Second, growth of exports over 2010 was much more dynamic in Estonia than in any other EU countries, including those with a large depreciation of their nominal exchange rates. Estonian exports surged by some 35 % in 2010. Importantly, all types of manufacturing goods have recorded a strong increase in their exports, with investment goods recording the largest increase (+75 %).

According to Eesti Pank (2011, p.17-18), nearly a third of the strong export growth in recent months may be attributable to growing competitiveness of the Estonian companies, with two-thirds attributable to the destination market and the specific need of exports partners and exports goods (in particular, demand for investment goods in Sweden and Finland). Put differently, Estonia would have succeeded in gaining market shares over the last year.

Graph 3: Real effective exchange rate of Estonia (based on unit labour cost)
- basis 100 = 2006Q1 -



Source : Eurostat.

5. Conclusion

Embarking into a strategy of internal devaluation instead of an external one was rather challenging at time when the global economy was subject to a major turmoil. Estonia, as well as the two other Baltic states, made this courageous and – retrospectively – judicious choice. Does it mean that devaluating internally is the new panacea while external devaluation would be an outdated strategy to restore competitiveness ? The answer requires caution as there is no one-size solution for all countries. First, in the period following the bankrupt of Lehman Brothers, the global economic environment was so depressed that any devaluation would have had virtually no effects on the Estonian exports⁹. In such context, only higher imports prices and higher reimbursements for those indebted in euros would have been materialized, with harmful effects on the purchasing power of households (see box 1). While it may be argued that internal devaluation has also reduced the purchasing power of households, wage cuts may be viewed as a better solution as widespread over all workers. By contrast, an external devaluation would have hurt predominantly households indebted in euros. Second, it has to be pointed out that population is arguably more prompted to accept wage cuts after several years of large wage increases – as in the Baltic states during the pre-crisis period – than after several years of sluggish wages. In this respect, the lessons to be drawn from the experience of Estonia for other EMU members regarding wage cuts have to be not misguided. Moreover, it should be noted that if all EMU countries practiced a strategy of internal devaluation, none of them would benefit from it.

⁹ For instance, the Polish currency depreciated by some 29 % from October 2008 to March 2009 without any stimulating effects on exports.

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APPENDIX

Decomposing the labour share (or “wage bill”) in value added

Let's assume that the labour share in value added at time t is given by:

$$\text{share}_t = \frac{W_t H_t}{P_t Y_t} \quad (\text{a})$$

$$= \frac{W_t}{P_t} \frac{1}{Y_t / H_t} \quad (\text{b})$$

$$= \frac{W_t}{P_t} \frac{1}{\text{Prod}_t} \quad (\text{c})$$

WH denotes the “wage bill” where W , the nominal wage *per* hour, is multiplied by H , the total number of hours worked. PY stands for the nominal value added, with P denoting for its price and Y for its volume. Wages are *gross* amounts, *i.e.* before the deduction of income tax and social security contributions.

The labour share in value added can be written as (b) where $\frac{W}{P}$ denotes the real wage *per* hour and Y / H (or “Prod”) denotes the labour productivity *per* hour.

In turn, H can be decomposed as:

$$H_t = h_t N_t$$

where N accounts for the number of workers and h for the number of hours worked *per* worker.

In log-approximation, the dynamics of the labour share in value added between t and $t-1$ is then given by:

$$\Delta \text{share}_t = \Delta \left(\frac{W_t}{P_t} \right) - \Delta(\text{Prod}_t) \quad (1)$$

where $\Delta \left(\frac{W_t}{P_t} \right)$ denotes the growth rate of real wage *per* hour between t and $t-1$

$\Delta(\text{Prod}_t)$ stands for the growth rate of labour productivity *per* hour between t and $t-1$.

In turn, the growth rate of labour productivity can be decomposed as:

$$\Delta(\text{Prod}_t) = \Delta Y_t - \Delta h_t - \Delta N_t \quad (2)$$

The movements in labour productivity will depend on:

- * the growth rate of value added in volume (denoted ΔY_t)
- * the development in working time (Δh_t)
- * the volume of workers used for the production (ΔN_t)

Thus, in the context of the global crisis, the labour productivity may still increase *if* working time and/or volume of workers are substantially reduced (*i.e.* above the reduction of value added). A decomposition of labour productivity's movements – as in equation (2) – can thus provide useful insights on the way enterprises in a country have adjusted during the global crisis. Combined with a decomposition of labour share's movements – as in equation (1) –, we can thus analyze how wages have been adjusted to changes in labour productivity.

Note: Of course, the above decomposition is for “apparent” labour productivity, thus abstracting from capital or other inputs used in the production.