



ECFIN COUNTRY FOCUS

Highlights in this issue:

- Lower real interest rates have accelerated financial integration, and led to a real-estate-related boom
- In non-tradables, employment gains have been high and TFP growth low
- Resources transfer to higher-tech manufacturing could foster exports and growth in the future

Growing imbalances prompted the turn of the economic cycle.

Estonia: overheating and sectoral dynamics

*By Baudouin Lamine**

Summary

Estonia's accession to the EU in 2005 led to a period of above-potential growth, fostered by expansionary monetary conditions. The predominance of foreign-owned banks accelerated the process of financial integration. Financial flows, while massive, were mostly directed at the non-tradable sectors of Estonia's economy, leading to an overexpansion of market services, while productivity growth in these sectors was declining. In contrast, manufacturing registered high total factor productivity (TFP) growth, while resources directed at this subsector were declining in relative terms. This relative misallocation of resources progressively led to growing macroeconomic imbalances, triggering an abrupt end to the high phase of the economic cycle. However, in 2007, competitiveness in the higher skilled subsectors of manufacturing was still holding up fairly well despite rapid increases in unit labour costs. Exports by most subsectors were growing at a sustained pace and appeared to be laying the foundation for renewed growth.

Overheating after EU accession

Over the period 2005-2007, a combination of growth above potential, accelerating inflation and further widening of external deficits indicated that Estonia's economy was overheating. Expansionary monetary conditions resulted in a credit boom and bullish real-estate investment activity financed by foreign banks. Asset prices, including in the real estate sector, soared. At the same time, optimistic expectations about future income, as wages strongly increased, boosted domestic demand.

Table 1: macro-economic indicators for the Baltic states, (annual percentage changes)

		2005	2006	2007
GDP (real)	Estonia	10.5	11.2	7.1
	Latvia	10.6	11.9	10.2
	Lithuania	7.9	7.7	8.8
CPI (average)	Estonia	4.1	4.4	6.6
	Latvia	6.7	6.5	10.1
	Lithuania	2.7	3.8	5.7
Current account balance (in % of GDP)	Estonia	-10.3	-15.5	-17.4
	Latvia	-12.5	-22.3	-22.8
	Lithuania	-7.2	-10.8	-13.7

Source: Eurostat

Estonia was not the only Baltic State facing overheating tendencies. GDP growth was also very high in Latvia and Lithuania, which also both experienced high inflation rates and large current account deficits (see Table 1).

With respect to its international investment positions (IIP), Estonia's net external liabilities were at 74% of GDP at the end of 2007, although with a ratio fairly stable to slowly increasing, after a marked decrease in 2006. Within the total of net liabilities, the previous dominance of net equity was however giving way

* Directorate for the Economies of the Member States II.

to rapidly increasing net debt. Sectoral debt was domestic, but was intermediated by the banking system, which itself was financed largely by external debt. This highlights how credit inflows played a major role in the development of macroeconomic imbalances.

In the course of 2007, as the growing imbalances appeared increasingly unsustainable, with interest rates rising and credit conditions tightening in a less favourable international environment, investment and domestic consumption slowed down sharply, as did house prices, prompting the turn of the economic cycle which began in 2000 with the end of the Russian crisis.

Expansionary monetary conditions resulted in massive financial inflows.

The role played by financial flows

Massive financial inflows

The 2005-2007 post EU-accession period was characterised by a rapid increase in domestic demand resulting from massive financial flows from abroad. Estonia was very successful in attracting FDIs. At the end of 2007, its accumulated stock of FDI (in gross terms) was over 65% of its GDP, i.e. 141% of its 2004 level and approximately twice the level of its Baltic neighbours. And credit as well as FDI flowed in after EU accession. Interest rate spreads with the euro area narrowed, while the euro-pegged currency board and the increasing predominance of Scandinavian banks facilitated euro-denominated borrowing at low cost.¹ Moreover, real interest rates fell and even at times turned negative (Chart 1), amid suddenly rising inflationary pressures, while the development of the mortgage markets lifted liquidity constraints from large segments of the population. In turn, the ensuing real-estate-related boom (Chart 2) fostered consumption credit and consumption expansion. Credit inflows progressively accelerated: gross debt liabilities increased on average by 32% annually over the 2005-2007 period, compared with around 20% over the 2000-2004 period (Chart 2). As a result of the considerable financial flows entering the country, Estonia's economic growth accelerated, to the point where it increasingly showed signs of overheating.

Chart 1: Real short term interest rates

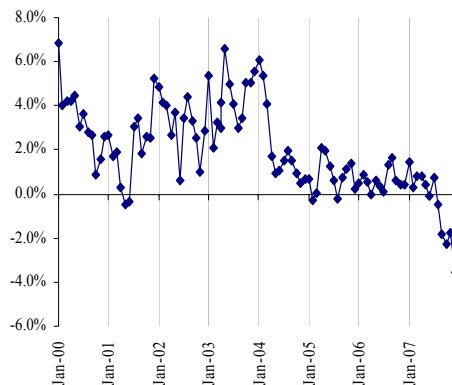
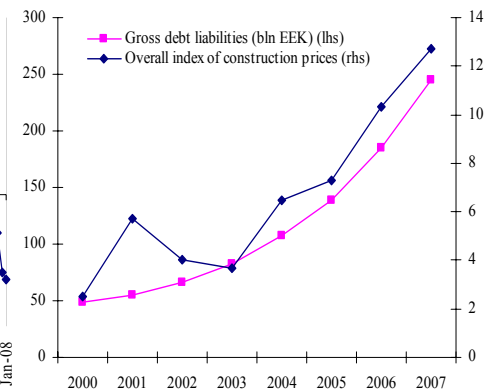


Chart 2: Gross debt liabilities and overall index of construction prices



Sources: Eesti Pank (Bank of Estonia) and Commission services' calculations

Financial inflows were too exclusively directed at market services and construction

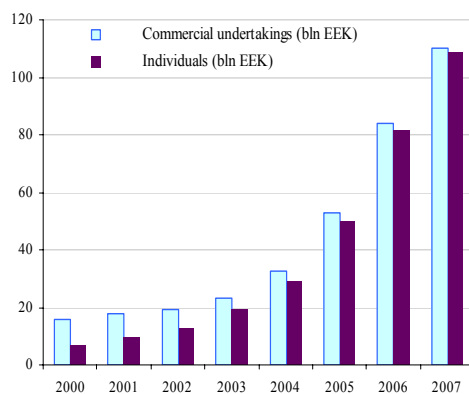
Financial flows mainly invested in non-tradable sectors.

Gross capital formation in Estonia was equivalent on average to around 35% of GDP in real terms annually in 2005-2007, with this ratio increasing towards the end of the period. But gross capital formation was mainly directed at non-tradables (about 75%), with 24% going to the real-estate sector and 6% going to construction. Domestic private savings, although high by EU standards (17-18% of GDP in 2006-2007), was insufficient to finance private investment (above 30%).

The large current account deficits, mainly constituted of goods, largely reflected investment in the real-estate-related sectors of Estonia's economy.² Manufacturing only got 14% of total investment, significantly less than its share in total value-added (see below).³

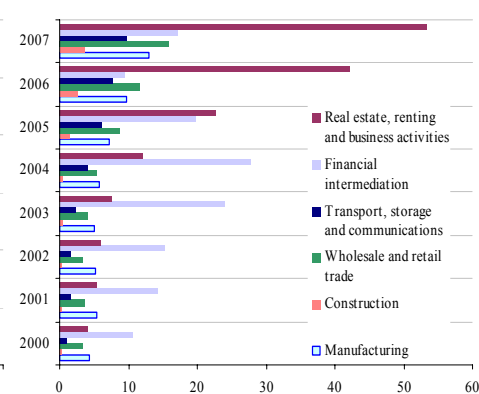
The loan stock grew sharply over the period, but it was also evenly distributed between households and commercial undertakings (Chart 3). Furthermore, the loans granted to legal persons were largely directed at real estate, renting and business activities, while the other sectors, including manufacturing, only registered a moderate increase (Chart 4).

Chart 3: Loans granted to commercial undertakings and individuals (stock in bln EEK)



Sources: Eesti Pank

Chart 4: Loan stock by borrower's main industry (bln EEK)



Sources: Eesti Pank

Foreign direct investments were also increasingly (above 80% of total FDIs) made into the market services sector (66% in financial intermediation), with the bulk of FDI (above 80%) coming from the neighbouring Nordic countries.

The impact on value-added and TFP growth over the 2005-2007 period: a sectoral approach

Value-added growth⁴ in 2005-2007 was higher (average of 9.4% - Table 2) than it was in 2000-2004 (8.0%). It was supported by strong, although declining, capital and TFP growth, but also by a clearly positive contribution from two labour market components: a continued reduction in unemployment and an even more pronounced increase in participation rates, which partly explains the lower TFP growth (given the comparatively less skilled labour force). After EU accession, non-tradable sectors in particular registered a sizeable increase in their employment levels (5.4% annually). In terms of output growth, construction (15.8%) was well ahead of total market services (10.3%) and industry (10.1%). However, TFP growth was nearly four times higher in industry (9.5%) than it was in total market services (2.8%), reflecting strong employment increases⁵ in the latter as well as an unfolding bubble effect in the real-estate-related sectors. This pointed to a possible Balassa-Samuelson⁶ effect, coupled with a financial integration shock, in what was, furthermore, an increasingly "non-tradable" economy (Charts 5 and 6). Finally, capacity constraints, in particular on the labour market, added to the inflationary context. The dominance of the market services sector ratcheted up to 54.8% (in real terms) of total value-added in 2007, which pointed to an overexpansion of market services activities, in comparison with countries like Germany and Finland.

At sector and subsector levels, the following structural transformations could be observed:

Construction:

The average annual value-added growth in the construction sector leapt to 16% on average in 2005-2007. This jump clearly reflected the increased access to credit, both for households and for companies, in a context of very low and sometimes negative long-term real interest rates after EU accession. The share of the construction sector in total fixed investment also jumped, exceeding the weight of the sector in total value-added (Chart 7). The TFP contribution to growth was strongly negative (-3.8%), reflecting the growing workforce (Chart 8), rising wage costs in a booming sector and strong wage convergence to the EU level. Over the

Construction registered strong VA growth.

...but TFP growth was low.

2005-2007 period, total employment increased by 21% annually on average.⁷ The wage increases partly resulted from mobility of labour beyond national borders, mainly to neighbouring Finland, where wages were several times higher. The sector's share of total value-added was 5.9% in real terms in 2007. But this hid a different reality in nominal terms, where the share in total value-added climbed to 7.9% (from 5.7% in 2004), indicating a clear real estate bubble and a housing boom.

Chart 5: nominal VA shares by sectors 1993-2007 in nominal terms

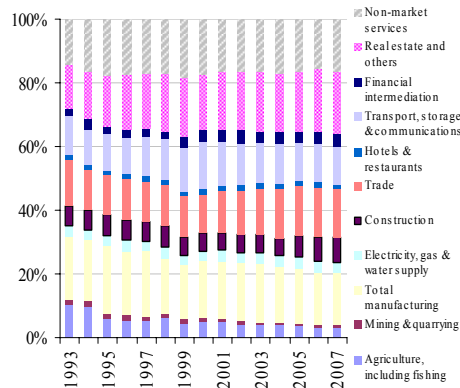
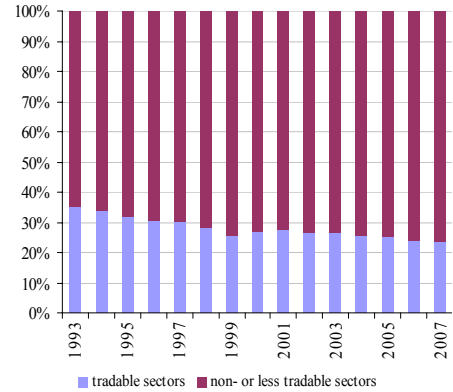


Chart 6: VA shares of tradable and non tradable sectors 1993-2007



Source: Statistics Estonia and Commission services' calculations

Real estate, renting and other businesses:

The real-estate sector registered value-added growth of 6-7%. The share of the sector in total fixed investment was relatively high and increasing: already exceeding its share in total value-added in 2000-2004, it reached a peak at 142% in 2005-2007, contributing to the real-estate-related boom. TFP growth turned strongly negative as the real-estate bubble burst and capital deepening started to exceed value-added growth, while employment strongly increased (8% annually). In real terms, the share of the sector in total value-added was 16%. In nominal terms however, the real estate sector was equivalent to 19.8% of the total value added in 2007, compared with 18.5% in 2004, reflecting a clear expansion phase.

The rising share of the real-estate sector fed a real-estate-related bubble.

Financial intermediation:

Annual value-added growth in financial intermediation was high at 23%, despite low fixed investment in relative terms. But the share of financial intermediation in total FDI was considerably higher than the share of the sector in the total value-added, as Scandinavian banks acquired the remaining part of the domestic banking sector. This enabled the rapid financial convergence process through massive credit inflows from the regional parent banks, and contributed to the real-estate and construction booms that were clearly evident from 2005. Supported by strong FDI inflows, the contribution of TFP to growth was high at 14.7%. The exceptional buoyancy and efficiency of the banking sector clearly underpinned the overall above-potential value-added growth registered in 2005-2007. The sector share in total value-added was 8.5% in real prices in 2007, up from 5.9% in 2004.

A buoyant banking sector, supported by strong FDI inflows, led to financial convergence.

Transport, trade, hotels and restaurants:

The three other market services subsectors also registered strong value-added growth. As a result, the share in total value-added of the three sectors combined exceeded 30% of the total value-added. In the case of trade, this reflected the rapid increase in domestic private consumption resulting from the improved access to credit and the increased wage expectations in the three Baltic States after their accession to the EU. In the case of transport, it reflected the role of the Baltic countries (in particular Estonia and Latvia) as transit countries between Russia and the global markets. The share of these subsectors in total GFCF never corresponded to their share in total value-added. Nevertheless, they did see a marked capital deepening. Moreover, employment in trade and transport increased by 3.5% and 4.5% per annum respectively. As a result, TFP growth in trade declined to 4.5%, while in transport it declined progressively to 2.9%. Hotels and restaurants registered an even sharper decline in TFP growth, as employment growth picked up to 13% annually.⁸

In the other non-market service sectors, TFP growth declined, reflecting the relatively strong employment gains.

Chart 7: Ratios of real GFCF shares to VA shares by sector

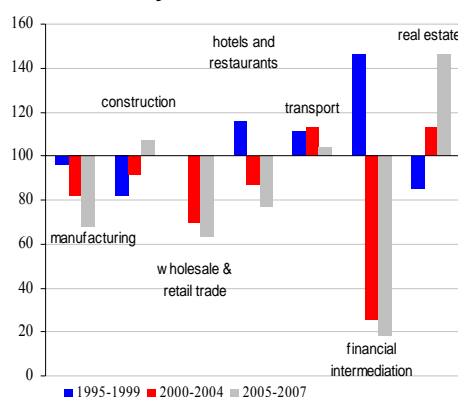
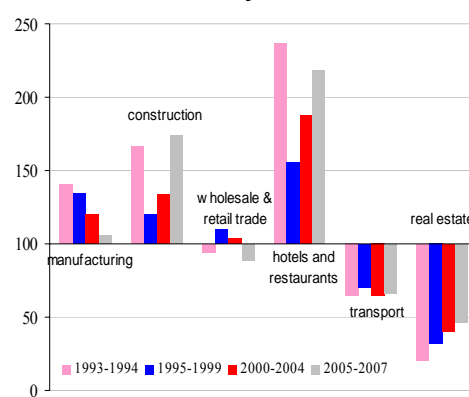


Chart 8: Ratios of employment shares to real VA shares by sector



Source: Statistics Estonia and Commission services' calculations

Manufacturing:

Growth in manufacturing was maintained at about 12%. However, the sector never registered investment levels corresponding to its weight in total value-added: its investment share fell increasingly below the share in total value-added. Its share in total FDI also declined. The good value-added outcome as well as the high TFP contribution to growth could be explained by openness to trade, continuous restructuring and relative employment losses: the share of manufacturing in total employment declined and approached its share in value-added. Vacancies were on average higher than in most other subsectors, reflecting capacity constraints, in particular labour mismatches, with a lack of qualified technicians and engineers, clearly indicating that more resources could be devoted to the sector. Nevertheless, manufacturing's share in total value-added jumped from 19.8% (in real terms) in 2004 to 20.7% in 2007. This quite rosy picture however hid a less positive development: in nominal terms, the relative size of manufacturing (17.1% in 2004 - 16.5% in 2007), as well as of the tradable sectors as a whole, progressively declined, reflecting higher deflators in the non-tradable sectors and in construction (Charts 3 and 4). As a result, in 2007, the size of the manufacturing sector in Estonia was significantly lower than it was for example in Germany (23.4% in nominal terms), Finland or Ireland (23.3% in nominal terms).

Manufacturing registered strong value-added and TFP growth, despite relatively low and declining investment...

...but the nominal share of manufacturing declined, reflecting high price increases in non-tradables and in construction.

Table 2: Real VA and TFP growth by sector, (annual average)

<u>2005-2007</u>	Agriculture	Mining	Manufacturing	Electricity	Construction	Wholesale - Retail	Hotels	Transport	Financial intermediation	Real estate	Non-market services	Total
$\alpha(\Delta L/L)$	-2.7%	-8.0%	-1.3%	-2.5%	16.3%	2.3%	11.9%	1.6%	4.7%	2.6%	1.3%	1.8%
$(1-\alpha)(\Delta K/K)$	5.8%	3.2%	2.2%	3.7%	3.3%	3.2%	1.0%	4.0%	4.0%	8.1%	1.2%	3.9%
$\Delta TFP/TFP$	-5.0%	15.3%	10.1%	1.6%	-3.8%	4.5%	-4.7%	2.9%	14.7%	-3.8%	2.1%	3.7%
$\Delta VA/VA$	-1.9%	10.5%	11.0%	2.8%	15.8%	10.0%	8.2%	8.6%	23.4%	7.0%	4.6%	9.4%

Source: Statistics Estonia and Commission services estimates

Competitiveness of exports as a key to growth recovery

Unlike most other sectors, manufacturing has achieved remarkable TFP growth in recent years. In the present economic downturn, given its large contribution to exports, the sector can therefore be expected to compensate for the subdued domestic demand, even though the international economic environment does not look particularly supportive. In April 2008, more than 60% of the manufactured production was exported. Moreover, if certain low-skilled subsectors of manufacturing, which were facing cost-competitiveness problems (see below) are excluded, manufactured products made up an increasing share of goods exports: 59.4% in 2004 versus 63.7% in 2007.⁹ In parallel, services, which in recent months

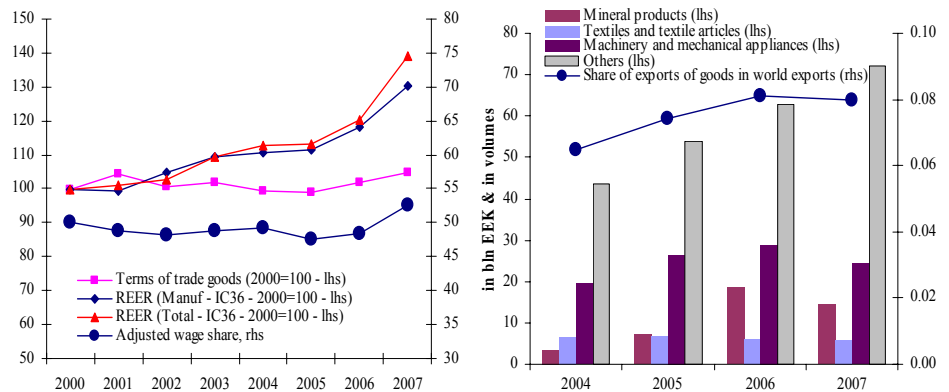
have offset almost half of Estonia's external deficit in goods, could continue to play a positive role, in particular if transit activities in the Baltic area fully recover.

However, external competitiveness indicators have so far been mixed. Estonia's market shares have considerably expanded since 2000. But average nominal wages have been growing considerably faster than productivity since 2006 (in fact, about twice as fast).¹⁰ This has resulted in an increase in nominal unit labour costs and should have resulted in a decrease of competitiveness for Estonian enterprises (Chart 9).

Wage growth largely exceeded productivity growth.

After several years of rapid growth supported by massive credit inflows, Estonia's economy was facing capacity constraints, in particular a progressive tightening of the labour market, aggravating inflation and creating risks to competitiveness. In 2007, total employment clearly exceeded its 1995 level, and unemployment declined sharply, dipping below 5% of the labour force. Labour shortages appeared in many sectors, driving up wages and unit labour costs (nominal wage growth of 16.5% in 2006 and 20.4% in 2007). In 2007, nominal unit labour costs in manufacturing grew by 13% yoy, suggesting that cost competitiveness in the sector has been weakened.¹¹ Moreover, structural problems, such as skills mismatches and ageing, emerged as important impediments to economic growth. Greater flexibility and transparency in labour legislation therefore appeared necessary to facilitate the transfer of resources to the more productive or export-oriented sectors, as well as to avoid declining productivity gains.

Chart 9: Terms of trade of goods, REER (ULCM-ULCE) and adjusted wages share **Chart 10: Estonia's goods exports by commodity flows and share in world exports (in %)**



Source: AMECO – European Commission

Source: Statistics Estonia - AMECO

As a result, in 2007, exports in a limited number of sectors were substantially affected. The loss of competitiveness hurt low-skilled sectors such as textiles and certain segments of machinery related to low-skilled subcontracting arrangements with foreign companies. But the increased tariffs imposed by Russia on its own timber and wood exports affected Estonia's wood industry, while regional political tensions resulted in a sharp contraction of the transit trade, in particular of mineral fuels, with Russia.

Conversely, competitiveness and exports seemed to hold up fairly well in a number of other subsectors (Chart 10) such as prepared foodstuffs, chemicals, plastics, articles of paper pulp, wood pulp, articles of the printing industry, construction supplies, articles of base metals, and miscellaneous manufactured articles, indicating that efforts made by Estonia to reorient its export base had borne fruit. The transit trade of vehicles to Russia remained vigorous. Estonia was also taking advantage of the already wide range of its products exported: exports were relatively low (less than 1% of total exports) in only 7 categories of goods out of 22, and higher than 4% of total exports in 9 categories. The improvement in the terms of trade partly reflected a gradual appreciation of the euro and the kroon against third currencies, as well as a stronger position of Estonian companies in export markets. There was however no clear evidence of an increasing technology level of exports, as the share of high technology products in total exports actually declined (to 8% in 2006 from 10.1% in 2004). Increasing the share of products with a higher

Competitiveness and exports held well in a number of sub-sectors.

technology content remained therefore a first-rank priority for exports, though this would require higher capital investment levels.

Nevertheless, the resilient export growth boded well for the possibility that Estonia would smooth the ongoing adjustment process of its production structures, and heralded a relatively rapid decrease of its external imbalances. Nevertheless, maintaining the competitiveness and profitability of manufacturing enterprises remained particularly important, as the external sector was nervously expected to provide support to Estonia's growth recovery.



Conclusion

In 2005-2007, positive output gaps reflected the expansionary monetary conditions prevailing in the period. Ample liquidity from abroad, channelled through the foreign-owned financial intermediation sector, was one of the driving factors behind a real-estate-related boom. This added to inflation and contributed to larger external deficits.

Financial intermediation led to exceptional gains in both value-added and TFP, supporting the above-potential growth rates. But TFP growth became very negative in the real-estate sector and in construction, where capital deepening on the one hand and the employment contribution to growth on the other exceeded value-added growth. The ebullient performance by consumption and trade also reflected the favourable credit conditions. But market services as a whole registered a marked fall in TFP growth, as capital deepening overall was excessive and employment increased in most subsectors, in some cases very strongly. This resulted in a possible Balassa-Samuelson effect and in higher inflation, undermining domestic demand and further GDP expansion.

The dominance of market services in total value-added continued to strengthen, through increases of its shares in trade, financial intermediation and real estate activities (only in nominal terms in the latter case), pointing to a relative overexpansion of market services activities. The share of construction in total value-added clearly jumped. The manufacturing's share increased in real terms. But in nominal terms, the relative size of manufacturing, as well as of the tradable sectors as a whole, progressively declined, reflecting higher deflators in the non-tradable sectors and in construction. In 2007, the restructuring from construction and other non-tradable activities (with lower TFP growth) towards tradable activities (with higher TFP growth) had not yet really started.

Nevertheless, manufacturing expanded markedly in absolute terms, despite its share of domestic and foreign investment falling increasingly behind its share of total value-added. This expansion was accompanied by exceptional TFP gains, while employment progressively declined. After a period marked by an overexpansion of market services, a reallocation of resources to manufacturing appeared possible, as reflected by higher vacancy rates and insufficient capital investment in the latter sector. It appeared also desirable, as highlighted by the higher productivity gains. Such a phenomenon was expected to progressively unfold from late 2007, as higher capital costs rendered investment affordable to higher productivity firms only.

Competitiveness and exports of manufacturing were affected by the rapidly growing unit labour costs, in particular in the lower-skilled subsectors. However, they seemed to hold up fairly well in a number of expanding subsectors, highlighting in particular the benefits of a progressive reorienting of Estonia's export base. Overall, promoting investment in the manufacturing sector, fostering exports with higher technology content and preserving competitiveness and profitability of exporting enterprises remain concerns of the first order, given the expected role of exports in growth recovery.



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¹ In 2006, the loan stock was constituted of 80% of foreign-currency-denominated loans.

² However, a significant part of the deficit (about 5% of GDP in 2006) consists of reinvested profits; these have not been subject to taxation so far, which explains the high size of the reinvested earnings in FDIs.

³ This picture needs to be nuanced as the share of agriculture and the electricity, gas and water supply sectors in total GFCF largely exceeded the share of these sectors in total value-added.

⁴ Statistical data on output at sector level is only available on value-added.

⁵ Or a process of legitimating hidden employment.

⁶ According to the Balassa-Samuelson hypothesis, productivity growth in the open sector usually exceeds that in the sheltered sector. Given that wages are expected to be approximately the same across sectors, faster productivity growth in the open sector pushes up wages in all sectors, thus leading to an increase in the relative prices of non-tradable goods. In the case of the new EU Member States, such inflation differentials are a source of price level convergence vis-à-vis EU countries.

⁷ This also partly reflected the then ongoing process of legitimating black market revenues, i.e. a progressive legalisation of income in a shrinking black economy.

⁸ The process of legitimating black market revenues may have played a role in this sector also.

⁹ The ratios may vary depending on the definition of the manufacturing sector used.

¹⁰ The gap between wage and productivity growth was around 6% in the fourth quarter of 2007, down from 10% in the third quarter. In December 2007, the nominal wage growth was still at 18% yoy.

¹¹ The growth of real unit labour costs in manufacturing accelerated was 4% yoy in 2007, indicating that profitability of manufacturing enterprises has been weakened as well.

The *ECFIN Country Focus* provides concise analysis of a policy-relevant economic question for one or more of the EU Member States.

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