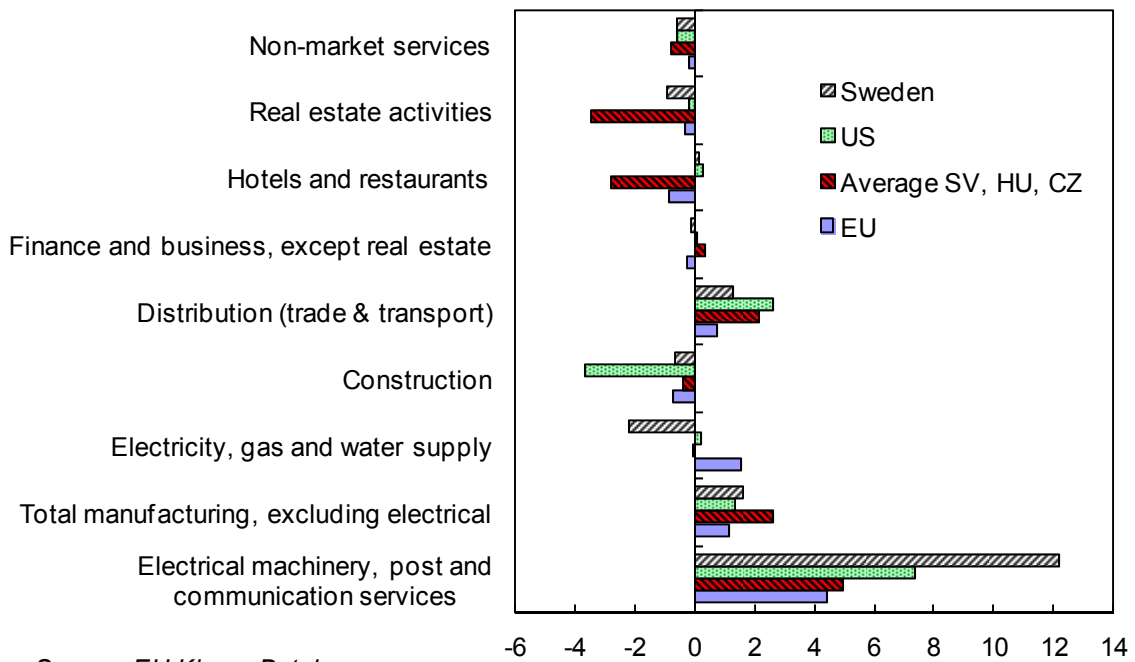
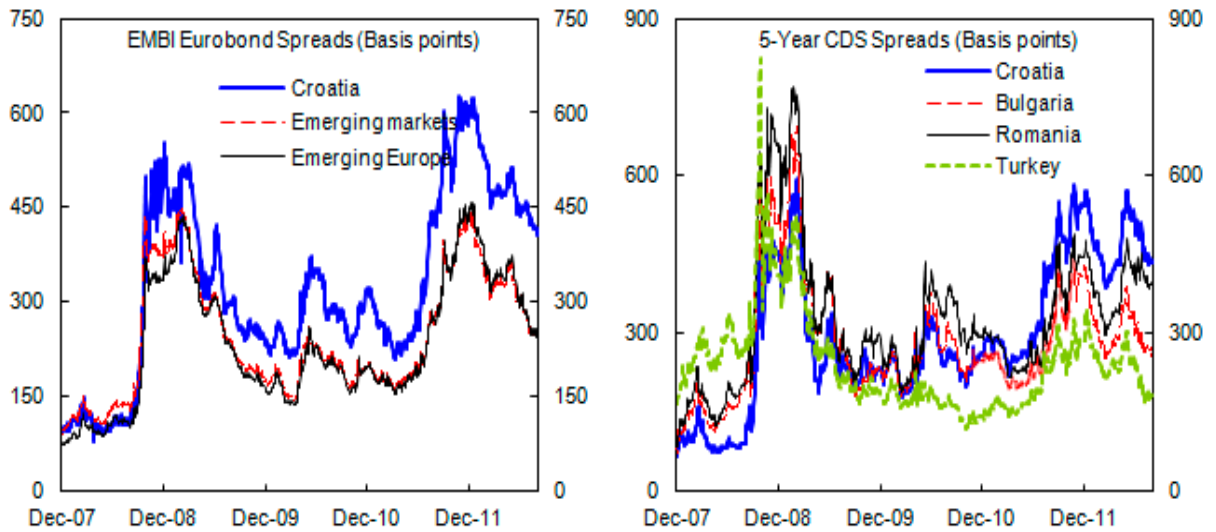


**Figure 11. EU and US: Average TFP growth by sectors, 95-2007, annualized (percent)**

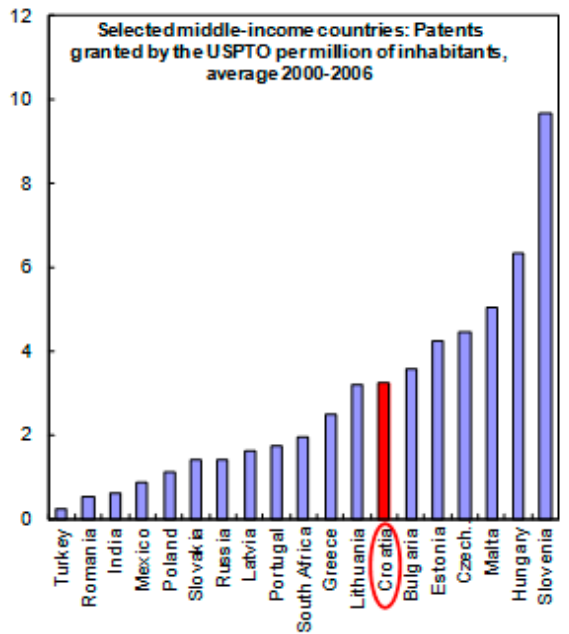


**Figure 12. Croatia: Cost of Finance, 2008-2011**

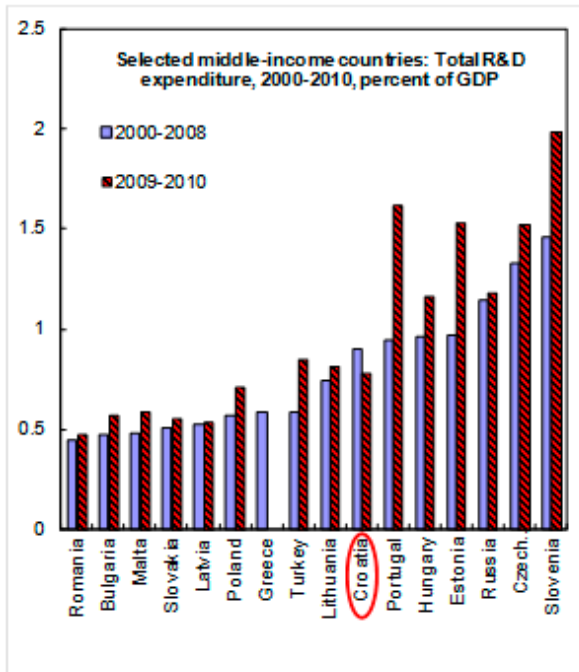


Source: Bloomberg.

**Figure 13. Croatia: Innovation performance**



Source: Eurostat



## II. CROATIA—EXPORT PERFORMANCE, WAGES, AND PRODUCTIVITY<sup>1</sup>

*The note examines various price measures from a cross country perspective with specific focus on the link between productivity growth, wages and export performance. The result of this analysis suggests that Croatia’s high wage level is a major drag on export performance. Disaggregated analysis of export products suggest that wage growth has been broadly in line with productivity and alludes to the historically high level of wages, together with weak business environment, as key constraints on competitiveness.*

### A. Introduction

1. **Croatia’s pre-crisis growth performance was built on weak fundamentals.**<sup>2</sup> The robust growth performance recorded from 2002–08 was driven by abundant capital inflows, which fueled a credit boom, spilled over into large current account deficits, and resulted in a buildup of foreign liabilities. External funding was mainly in the form of debt-creating flows, with the majority of FDI going to the financial sector. This had the effect of further tilting the structure of the economy away from the tradable sector.

2. **Sustainable long term growth would require a rebalancing of the economy from domestic to external demand.** Domestic demand is likely to remain subdued over the near term as worldwide deleveraging from the high pre-crisis level is likely to moderate the extent of future capital inflows, while domestic deleveraging is likely to temper the demand for credit. In this context significant rebalancing through expansion of the tradable sector is needed to promote sustained economic growth.

3. **Croatia’s export performance over the past decade suggests that external competitiveness is relatively weak and serves as a binding constraint on growth.** Weak competitiveness is largely due to relatively high labor cost. This along with existing structural weaknesses suggests that urgent reforms to facilitate wage adjustment and improve the business environment are needed to improve competitiveness and export performance.

### B. Key Findings

4. **Movements in ULC and productivity at the disaggregated level suggest that increases in unit labor cost from 2000–08 were not out of line with the regional average.** In addition the gaps between productivity and wage growth (measured by difference between productivity growth and wage growth) were broadly in line with the sample average. Despite

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<sup>1</sup> Prepared by Reginald Darius

<sup>2</sup> The discussion of Croatia’s growth model follows the analysis of growth experiences in Eastern Europe detailed in Atoyan, R., 2010, “Beyond the Crisis: Revisiting Emerging Europe’s Growth Model,” IMF Working Paper 10/92 (Washington: International Monetary Fund).

the growth in wages at the individual commodity export level, which is broadly in line with its comparators, Croatia's export performance in almost every product was at the lower end of the range of the countries in the sample. This represents a slight puzzle as growth in ULC which was broadly in line with that of comparator countries would imply that competitiveness was not significantly eroded during the past decade.

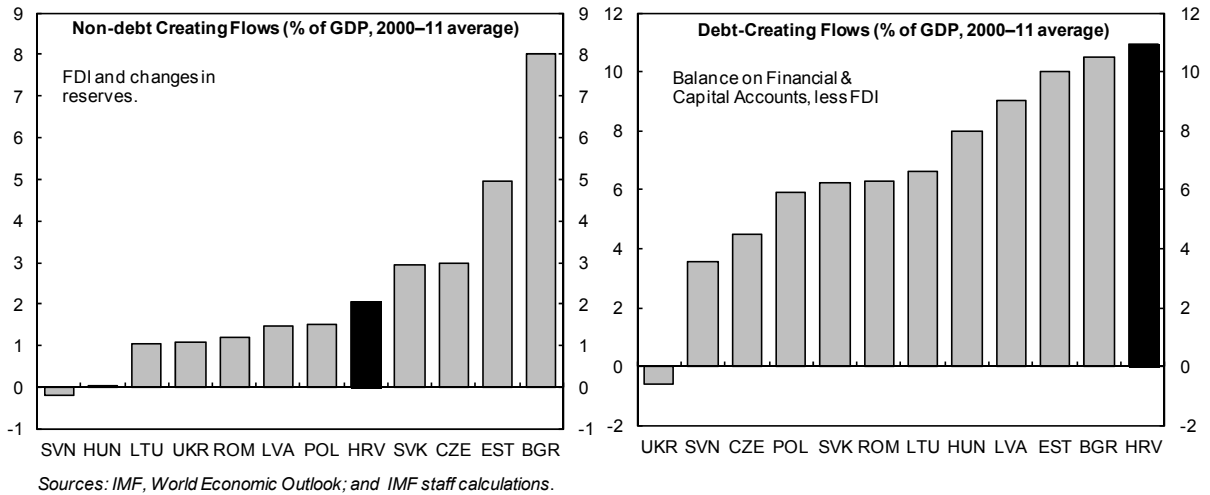
5. **The paper finds that the wage differential between Croatia and comparator countries has declined over the past decade**, however the wage level remain above the sample average, which suggest that weak export performance may be affected by the traditionally high level of wages, combined with numerous weaknesses in the business environment. With external demand likely to be lower than in the pre-crisis period, at least in the near-term, further reducing the wage gap between Croatia and its regional peers appears even more crucial than in the past to improve export performance.

6. **The remainder of the paper is organized as follows.** Section C examines developments in the external sector and particularly the trade deficit and the link between current account deficit and the buildup of vulnerabilities. Section D examines recent export performance, while section E examines wage, productivity, and export growth by commodity. The final section presents some conclusion and policy issues to consider.

### C. Current Account Balance and External Vulnerabilities

7. **Relatively persistent current account deficits alongside weak export performance are symptoms of an underlying competitiveness problem.** During 2000–08, the current account deficit averaged 5.6 percent of GDP. The trade deficit averaged about 20 percent of GDP, with import growth buoyed by rapid increase in domestic demand during the boom period exceeding export growth. During that period the savings investment balance deteriorated due largely to an increase in investment in the non tradeable sector. The subsequent improvement in the current account deficit, during the period of severely weakened economic activity was due to a significant contraction in import demand as exports also plunged during the crisis but recovered at a faster rate.

8. **The current account deficit was mainly financed by external debt.** This resulted in a significant build up of vulnerabilities, which exposed the economy to financing risk. During the period (2000–2008) external debt rose from 52 percent of GDP to about 80 percent of GDP. A large proportion of the increase in debt was due to borrowing by banking sector, which was used to finance the domestic consumption boom rather than investment.



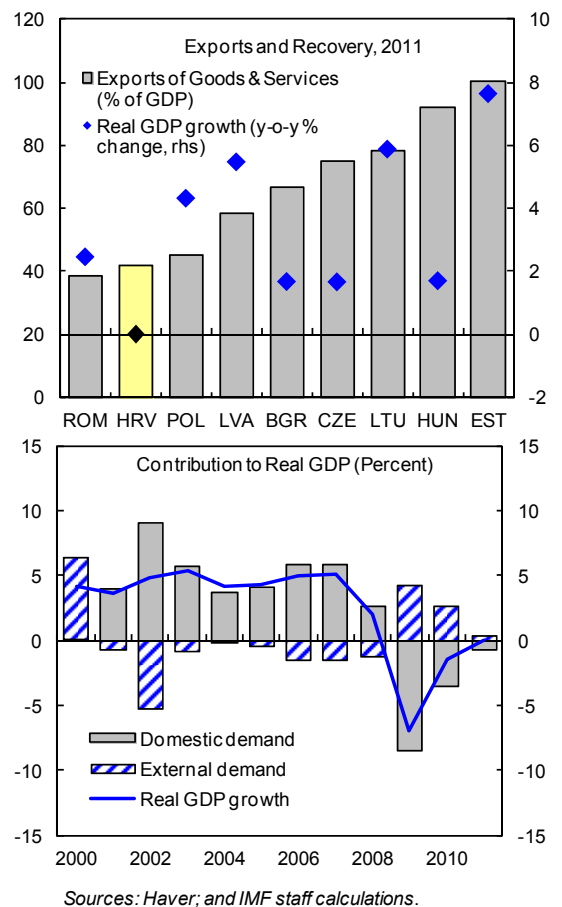
#### D. Export Performance and Market Share Analysis

##### 9. Croatia's export performance has been weak.

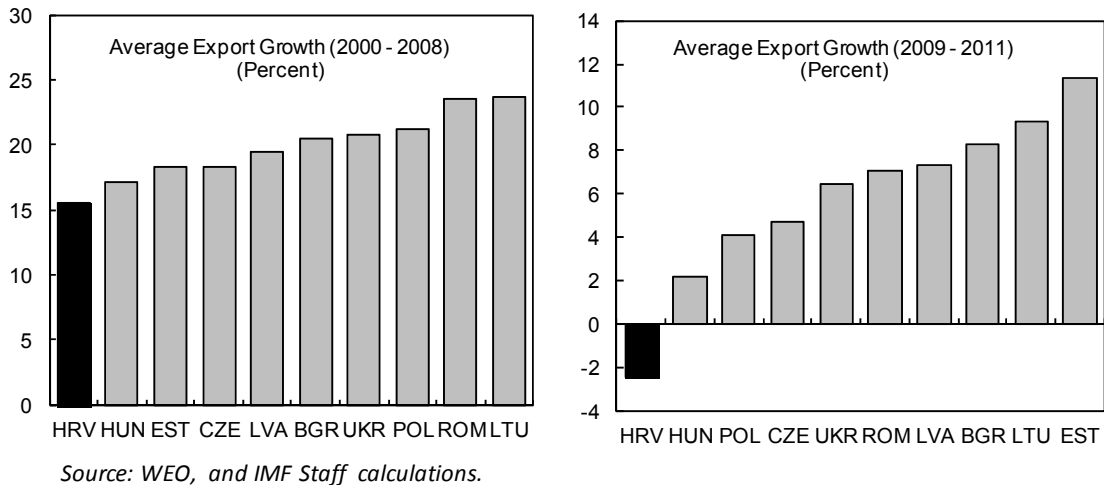
The contribution of external demand to growth was negative during the boom years, 2001–2008. Following the economic crisis the contribution of external demand to growth improved with positive contributions in 2009 and 2010 due in part to the collapse in domestic spending.

##### 10. Croatia's rate of export growth was amongst the slowest in this sample of Eastern European countries from 2000–2008<sup>3</sup>.

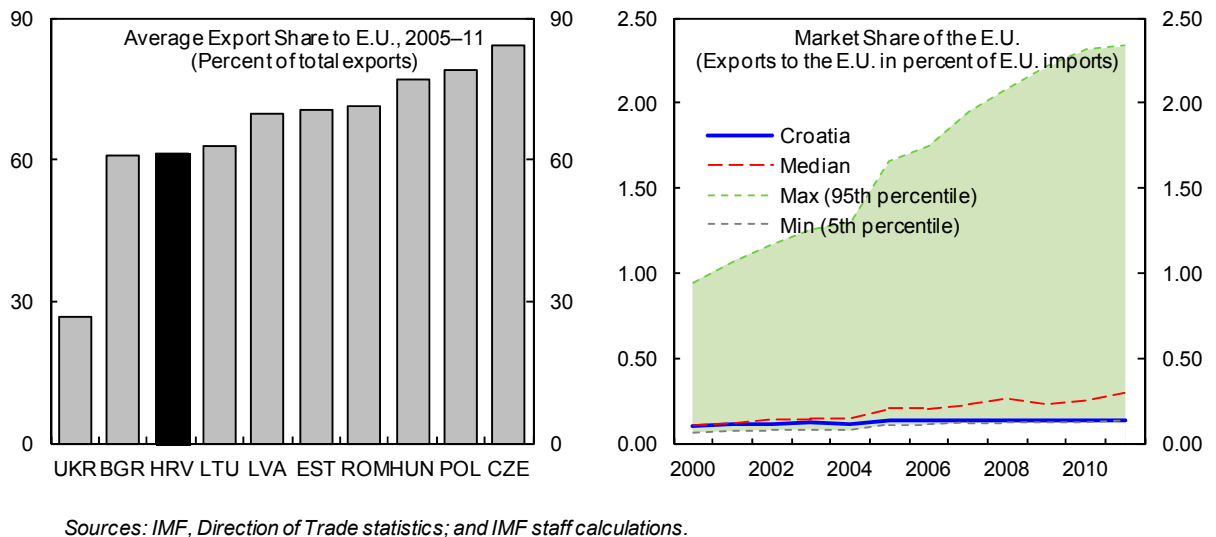
Total export growth averaged about 15 percent the lowest rate recorded by any of the countries in this group. During the economic crisis when most countries suffered a significant collapse in export growth, Croatia was amongst the hardest hit. Export growth contracted by an annual average rate of almost 4 percent in 2009–2011, the worst performer among its peers.



<sup>3</sup> Countries included in the analysis are Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Ukraine.



11. **The EU is Croatia's main commodity export market.** Croatia's share of EU's imports remained relatively stagnant over the past decade. About 60 percent of Croatia's exports are destined to the EU. The EU also serves as the main market for the other countries in the sample—with the exception of Ukraine—purchasing on average in excess of 60 percent of their export goods. Croatia's share of the EU market is relatively small and falls within the lowest percentile relative to the other countries in the sample. Furthermore Croatia has made limited gains in improving on its percentile ranking over the past decade.

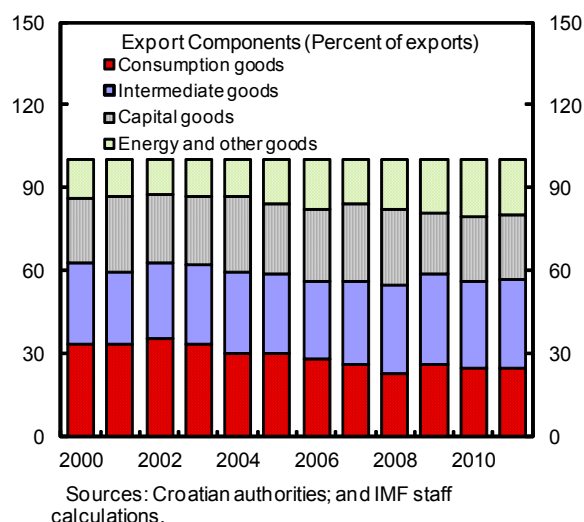


12. **Croatia was also unsuccessful in making inroads into the non EU market (Figure 1).** The share of world imports accounted for by Croatia was in the lowest percentile and with minimal change over the past decade. A more disaggregated analysis suggests that Croatia was able to retain its market share in most markets but made limited strides in improving its position. A notable exception was the increase in market share to oil exporting countries, particularly following the onset of the global economic crisis.

13. **Commodities export is dominated by intermediate and consumer goods.** Over the past decade, intermediate and consumer goods accounted for about 60 percent of commodity exports. The contribution of these commodities has remained remarkably stable. Capital goods accounted for about 20 percent of commodity exports during that period, suggesting that Croatia made limited headway in moving to the higher end of the export market.

14. **The export sectors did not benefit much from the strong growth in capital inflows.**

Greenfield FDI into the tourism sector was relatively low, while inflows into the manufacturing sector were modest. The majority of the external inflows made only limited contribution to improving competitiveness. On a cross country basis the average amount of FDI to the manufacturing sector was lowest in Croatia and this would partially explain the relatively weak export performance during that period. However within the manufacturing sector there appears to be limited causal link between FDI and export growth.



#### Average FDI and Export Growth by Sector (2000-2008)

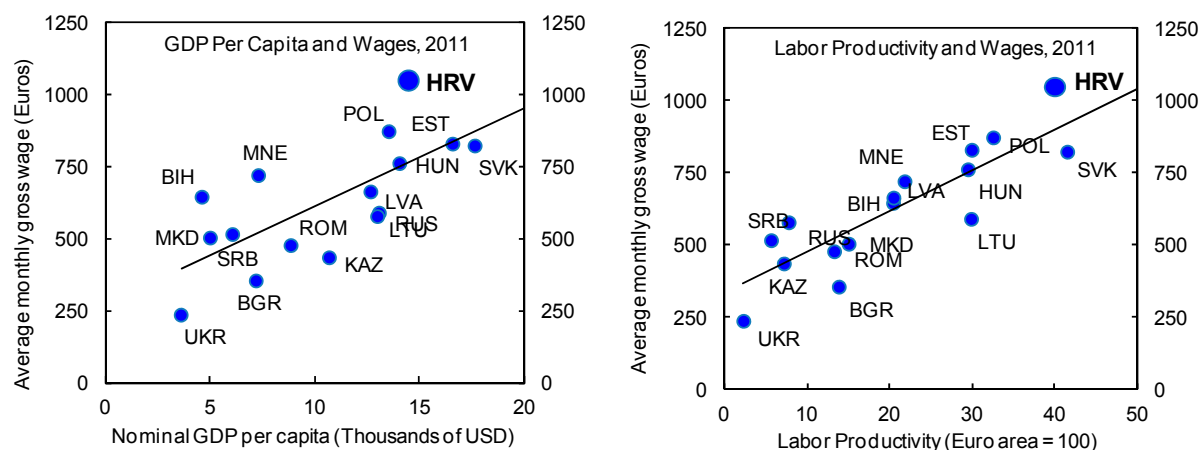
	FDI	Export
Manufacture of chemicals and chemical products	4.96	6.38
Manufacture of other non-metallic mineral products	2.86	10.50
Manufacture of food products and beverages	2.27	15.09
Manufacture of fabricated metal products	0.36	17.67
Publishing, printing and reproduction of recorded	0.59	4.30
Manufacture of rubber and plastic products	0.39	6.86
Manufacture of textiles	0.44	5.75
Manufacture of pulp, paper and paper products	0.15	9.72
Manufacture of machinery and equipment n. e. c.	0.41	14.97
Tanning and dressing of leather	0.17	4.59

### FDI flows into key Export Sectors

	(2000-2010)		(2007-09)	(2004-09)
	Croatia	Bulgaria	Romania	Czech Rep.
Proportion of FDI to Manu.	8.53	20.58	31.75	36.38
Proportion of FDI to Hotels	3.62	1.59	0.48	10.37

## E. Wages and Export Performance: A Micro Analysis

15. **Croatia's relatively high wages is a drag on competitiveness.** Nominal wages in the manufacturing sector are high relative to peers and when compared to income and productivity levels. While productivity levels in Croatia's industrial sectors are not low, wages remain above the level consistent with existing levels of productivity. Not only are wages high but the overall employee compensation is high in Croatia.



Sources: IMF, World Economic Outlook; and IMF staff estimates and calculations.

16. **Detailed cross country data on ULC, productivity, wages and exports by manufacturing sub-sectors provides the basis for a micro assessment of Croatia's export competitiveness.** The Vienna institute publishes detailed information on export data for a number of Eastern European countries including Croatia. The information contained in this database allows for a micro level analysis of the role of cost and productivity in export performance. The database includes information on manufacturing products identical to the 2-digit level of ISIC Rev. Code 3 (23 industries) and also total industry (mining and quarrying, manufacturing, and electricity, gas steam and water supply). The data includes industrial production by sub-sector, unit labor cost, wages and productivity.

17. **This analysis focuses on a selected subset of manufacturing products for which data is available.** Products are chosen based on export value with the threshold of at least EUR 250 million to the EU market in 2008, the last year for which the relevant data is available, and a second group of high-end/high-value products is also included. Nine sub-



sectors met the minimum value threshold. In the high-end category five sub-sectors are included, with electrical machinery falling into both categories.

18. **Overall industrial and manufacturing sector data suggest that Croatia's annual average growth in ULC was relatively low (Figure 2).** Annual average ULC growth of the manufacturing sector was well below five percent, only Hungary and Poland recorded a slower rate of increase. Despite the relatively slow rate of growth in ULC, Croatia recorded the lowest average annual export growth (less than 10 percent), while every other country recorded export growth in excess of 10 percent. A similar picture emerges in the case of industry exports, where labor cost was the third lowest; however, export growth lagged that of all but four countries in the grouping.

19. **At the more disaggregated level there was broad consistency with the trend observed in the manufacturing sector of relatively low growth in ULC alongside comparatively weak export performance (Figure 2–5).** This is particularly apparent in the case of food products, chemical products, electrical machinery and machinery and equipment. Notable exceptions include apparel, transport equipment and wood products. The performance of apparel exports appears to have been affected by price competitiveness. Exports of apparel products registered the third largest decline of the countries in the group of about 5 percent, while ULC increased by about 7 percent, and the fall in wages was much lower than then the decline in productivity. Export of transport and equipment registered big gains, alongside increased ULC of about 5 percent but the positive gap between productivity and wage growth was relatively high. Export of wood products and textiles also grew at a comparatively high rate and was supported by productivity gains which far exceeded wage increases.

20. **Croatia's performance in high technology export was below average (Figure 6).** With the exception of office machinery and communication equipment -mainly due to the base effect- export growth in relatively high technology products were generally below par. Average export growth of both office machinery (about 45 percent) and communication equipment (about 20 percent) was impressive. However these outcomes should be viewed with some caution given the small starting position. Medical products registered an average annual export growth of about 10 percent despite relatively modest growth in ULC and the very low base. Publishing and printing had a similar pattern, Croatia, despite been the only country to record an average decline in ULC, recorded the second lowest export growth in the group.

21. **The relative gap between productivity and wage does not appear to exert much influence on Croatia's export performance (Table 1).** Despite having a higher gap between wages and productivity in key export categories, Croatia's export growth was lower for total industry and manufacturing products along with the subgroups; food products, machinery and equipment, chemical products and publishing and printing. These results are in direct contrast to what would have been expected. The outcome for wood products was more in line

with the norm, where the larger gap between productivity and wages resulted in a more favorable export performance. Transport and equipment also provided a non standard outcome in the opposite direction, where despite wage growth exceeding that of productivity export performance was better than the average.

**Table 1: Export Growth Productivity and Wage Gap (P-W)**

	Gap			Export Growth		
	Avg. Gap	HRV Gap	Gap diff.	Avg. Export Growth	HRV Export Growth	Growth diff
Transport equip.	2.8	-0.9	-3.8	28.3	53.7	25.4
Office machinery	16.8	-9.8	-26.6	35.6	46.0	10.4
Communication equip.	8.1	-2.8	-10.9	23.8	23.9	0.1
Food products	1.2	2.3	1.1	20.7	15.1	-5.6
Machinery and equip.	6.3	6.5	0.2	21.2	15.0	-6.2
Medical instruments	5.3	2.5	-2.9	19.9	10.1	-9.8
Electrical machinery	3.1	1.9	-1.2	17.7	9.7	-8.1
Total industry	1.5	1.8	0.3	15.9	8.5	-7.4
Manufacturing	2.0	2.2	0.2	15.5	8.4	-7.1
Wood products	1.4	3.4	2.1	5.7	8.0	2.3
Chemical products	3.6	2.2	-1.4	18.4	6.4	-12.1
Textiles	2.7	1.6	-1.0	5.1	5.7	0.6
Publishing and printing	2.1	6.6	4.5	17.0	4.3	-12.7
Apparel	0.2	-2.9	-3.1	-0.9	-5.2	-4.3

*Gap measures the difference between productivity growth and wage growth.*

*The average gap is the average of the difference between productivity and wages of the countries included in the sample*

*Source: Vienna Institute for International Economic Studies; and IMF staff calculations*

22. **Export growth is strongly correlated to productivity and ULC growth for a few low value added commodities.** Exports of other transport equipment and electrical machinery are strongly correlated with both ULC and productivity-although in the case of the electrical machinery the correlation with productivity growth has the wrong sign (Table 2). Export growth of textiles, and food and beverage are also strongly correlated with productivity and ULC growth. This suggests that for some major export categories the outcome is in line with the expectation that increasing productivity would result in a significant boost to exports.

**Table 2. Export, ULC and Productivity growth (correlation)**  
(2000-2008)

Commodity	Correlation Coefficient	
	ULC and Exports	Productivity and Exports
Radio, TV and communications	0.47	-0.20
Medical	0.42	-0.36
Total Industry	0.29	0.33
Manufacturing	0.16	-0.35
Wearing Apparel	-0.06	0.10
Publishing, printing etc	-0.12	-0.06
Machinery and Eqp.	-0.13	0.07
Chemicals	-0.24	0.31
Wood and wood products	-0.30	0.15
Food products and Beverages	-0.50	0.62
Textiles	-0.55	0.51
Other Transport Eqp.	-0.58	0.62
Electrical machinery	-0.64	-0.73

*Source: Vienna Institute for International Economic Studies; and IMF staff calculations*

23. **Croatia made limited headway in boosting its market share of specific export items.** This finding is broadly consistent with what was observed at the aggregate level (Table 3). Detailed examination of market share, relative to the group of countries in the sample, suggests very minimal gains. In fact, the trends in market share at various points (1999, 2003, and 2008) indicate that of the thirteen products considered, only in three instances was the market share in 2008 higher than in 2000. Relatively significant improvements was recorded in transport and equipment (4.5 percent gain) and to a lesser extent communications and equipment. However market share was lost in chemical products (3 percent), apparel (2 percent) and medical instruments (0.5) percent.

**Table 3. Market Share**  
(Exports of Eastern Europe to the European Union) 1/  
In percent

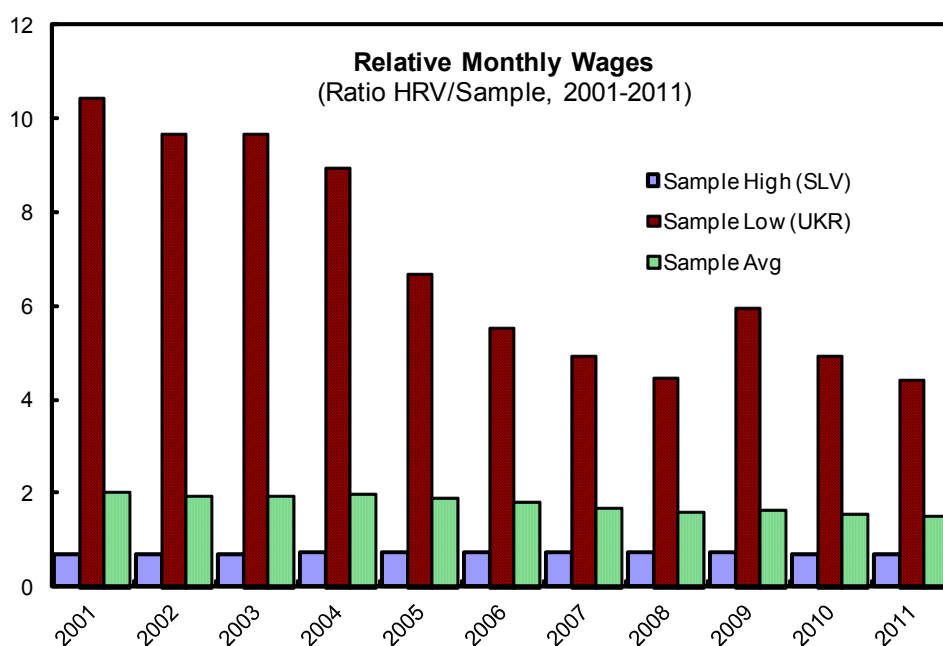
	1999	2003	2007	2008
Manufacturing	3.04	2.31	1.75	1.68
Total industry	3.03	2.28	1.77	1.70
Food products	3.34	3.99	2.37	1.98
Machinery and equip.	2.6	1.7	1.9	1.9
Transport equip.	1.3	3.7	4.2	5.9
Wood products	5.61	4.36	4.11	4.07
Textiles	6.56	5.09	4.53	4.95
Apparel	5.85	3.94	3.21	3.06
Chemical products	6.4	3.9	2.7	2.6
<b>High end products</b>				
Electrical machinery	2.12	1.32	1.09	1.14
Medical instruments	2.72	1.37	1.24	1.10
Office machinery	0.11	0.18	0.22	0.16
Communication equip.	0.15	1.99	1.02	0.87
Publishing and printing	3.33	2.00	1.26	1.31

1/ Eastern Europe includes Bulgaria, Croatia, Czech Rep., Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Rep., Slovenia, and Ukraine.

Source: Vienna Institute for International Economic Studies; and IMF staff calculations

24. **The continued poor performance of Croatia's export cannot be clearly linked to developments regarding changes in cost and productivity.** Croatia made limited strides in increasing its presence in key markets and actually lost market share in major export products. Interestingly, average ULC growth for many export goods and the manufacturing sector was comparatively low, even though productivity growth in a wide range of commodities was below average wage growth. These findings raise some interesting questions relating to Croatia's poor export performance. One clear outcome is that lower than average increases in wage cost appear to have minimal impact on export performance in the short run. This suggest that for Croatia to improve export performance it needs to record wage declines and or productivity increases which far exceeds that of competitor countries.

25. **High wages in Croatia partly reflects the legacy of pre transition period.** The overall increase in wage growth over the past decade is broadly in line with that of regional peers. This point is highlighted by looking at wage differentials on an annual basis from 2000–2008. This analysis suggests that Croatia's wages was above the average wage for the region at the start of the period under consideration and was significantly higher than that of the lower wage countries. The wage gap between Croatia and its regional peers have been reduced over the years, which suggest that wage growth has not been particularly rapid, and the wage competitiveness gap reflects some degree of inertia.



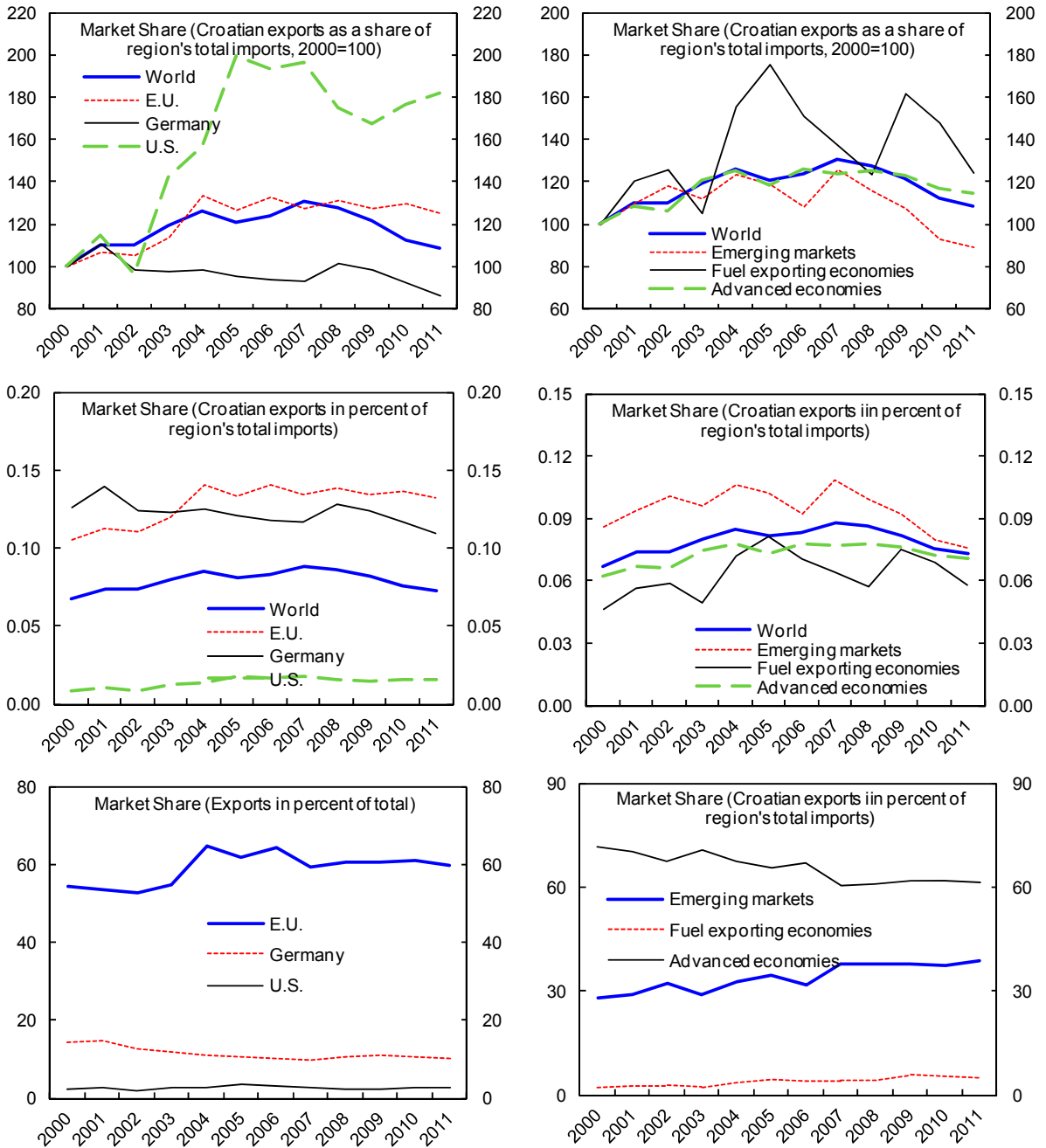
Source: WEO, IMF Staff Estimates. Sample includes CESEE countries.

## F. Conclusion

**The result of this analysis suggests that Croatia's high wage level is a major drag on export performance.** Disaggregated analysis of export products, suggest that wage growth has been broadly in line with productivity and alludes to the historically high level of wages as key constraint on price competitiveness. High wage level, together with weak business environment, appears to have limited export performance. This implies that the policy priority of the authorities should be on measures to contain or reduce the level of wages along with structural measures to improve business environment and labor market flexibility. This would result in an improvement in competitiveness, that would contribute towards reducing the external financing requirement. Despite the recent improvements in the current account deficit, financing requirements remains elevated and is projected to exceed 20 percent of GDP over the near term. Reducing the financing requirement and the associated risk would be aided by an improvement in overall competitiveness. This would boost exports, improve the external balance and increase the availability of domestic resources to finance investment, which would also lead to a gradual reduction in the external debt burden.

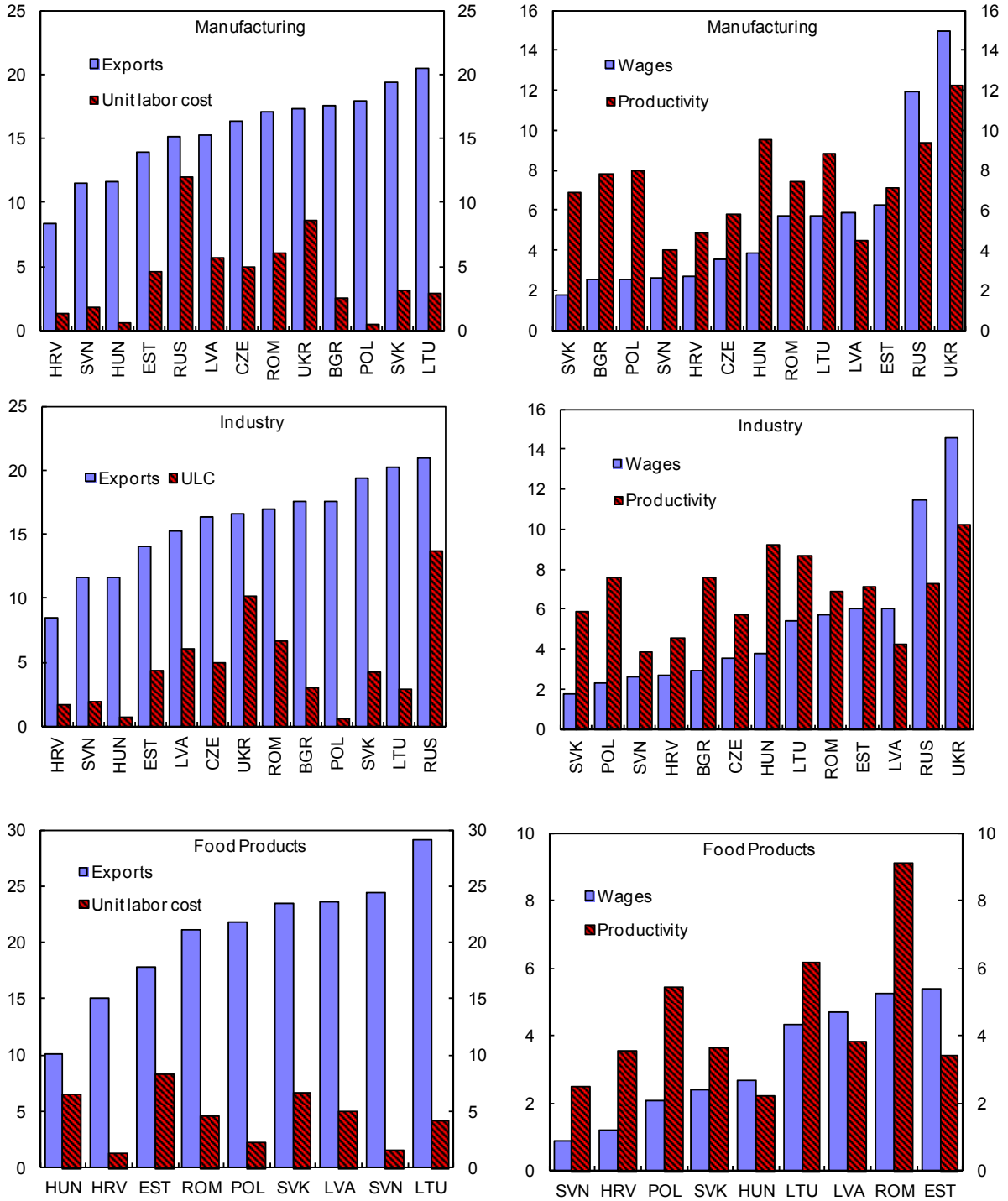
Appendix

Figure 1: Market Share, 2000–11



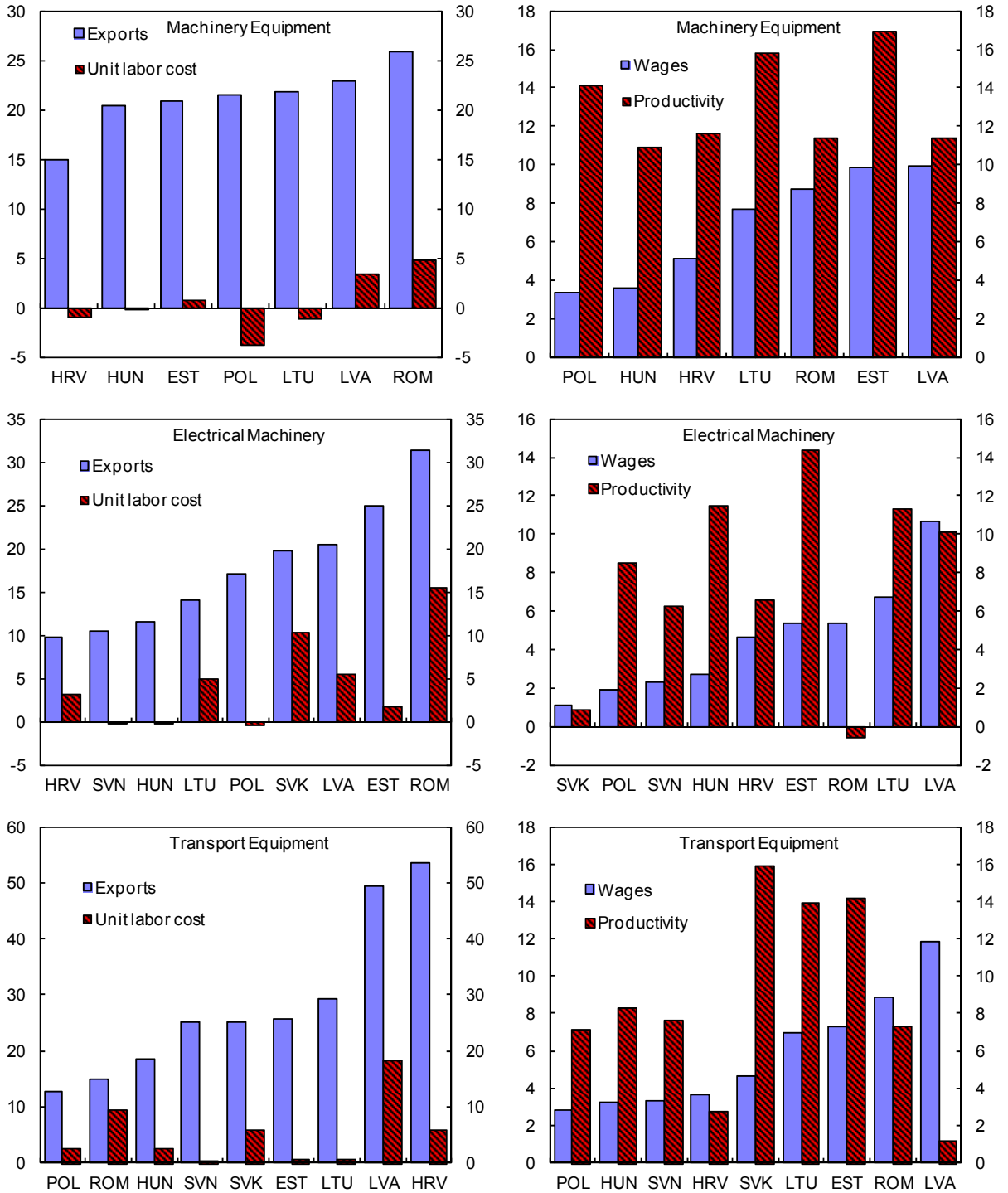
Source: IMF, Direction of Trade Statistics and IMF staff calculations.

Figure 2: Eastern Europe: Export and ULC, 2000–08  
(Percent)



Sources: Vienna Institute for International Economic Studies; and IMF staff calculations.

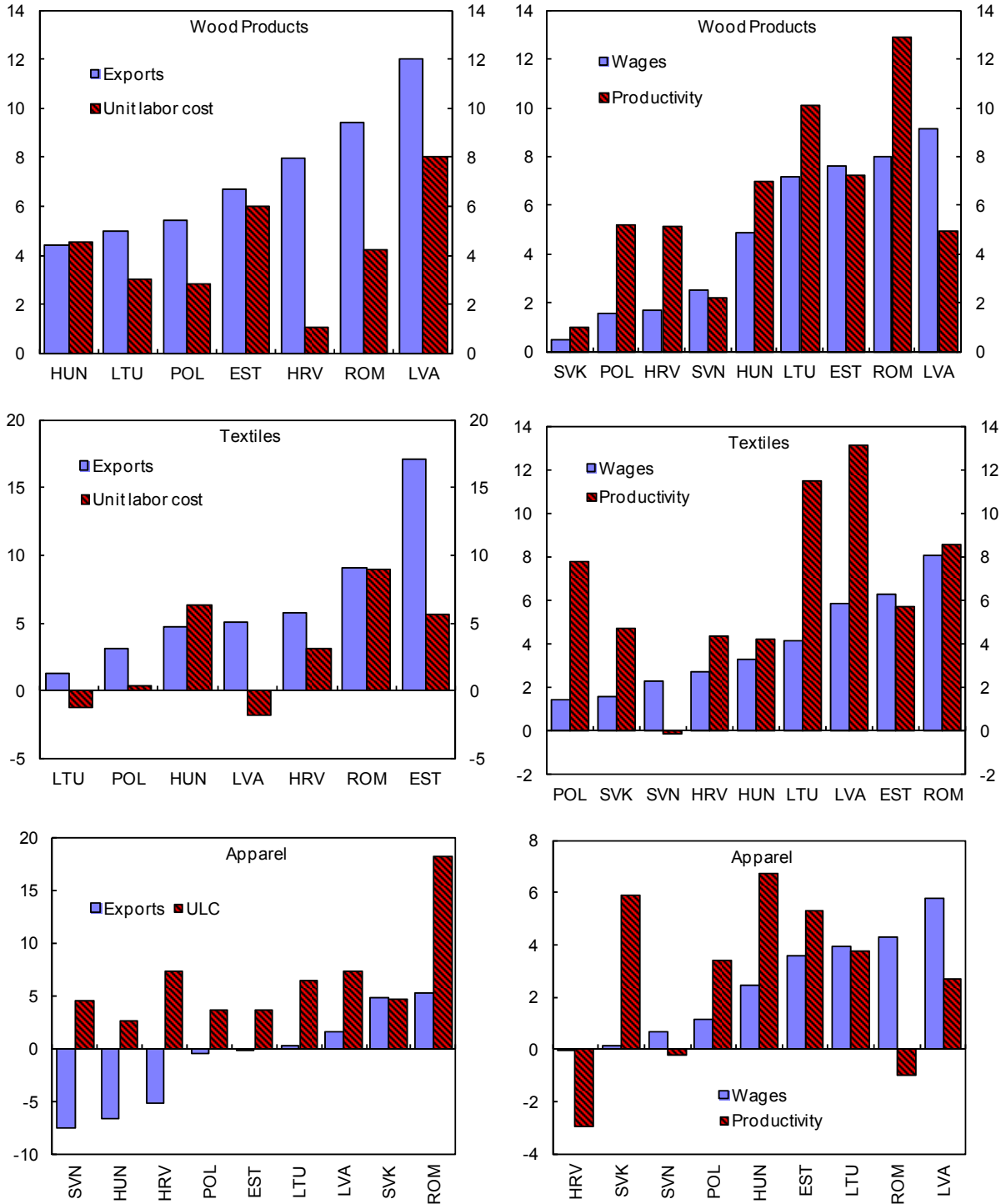
Figure 3. Eastern Europe: Export and ULC, 2000–08  
(Percent)



Sources: Vienna Institute for International Economic Studies; and IMF staff calculations.



Figure 4: Eastern Europe: Export and ULC, 2000–08  
(Percent)



Sources: Vienna Institute for International Economic Studies; and IMF staff calculations.