



Macroeconomic position of forestry and wood processing industry during the bark beetle disaster

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Introduction

The position of forestry and wood processing industry in the Czech Republic in the national economy, assessed using selected macroeconomic indicators, is very volatile during the bark beetle disaster. Since the beginning of the bark beetle disaster in 2014, the volume of total timber harvesting in the Czech Republic has more than doubled. The share of salvage cutting of total timber harvesting reached 95%.

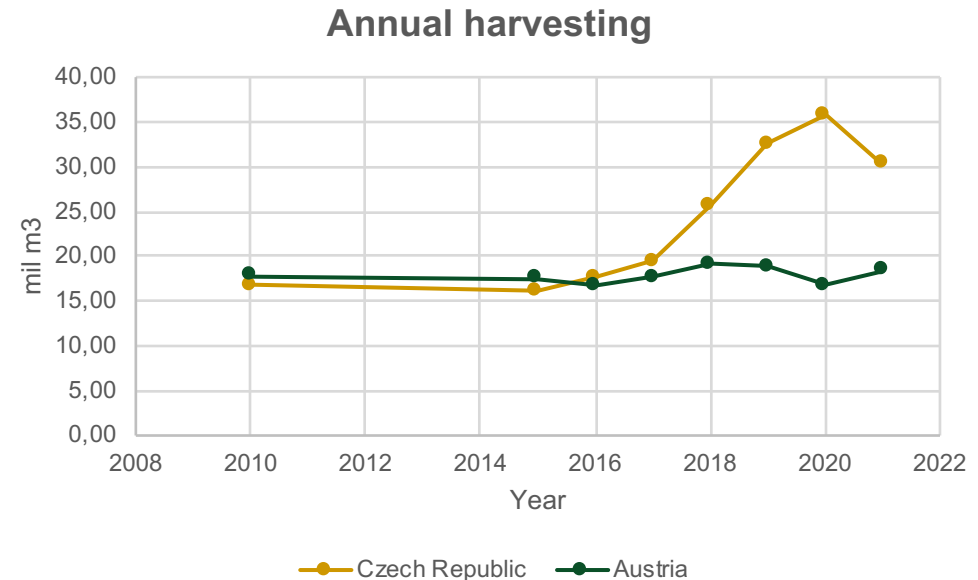
However, the increase in the share of Forestry and logging (CZ-NACE 02) in the national economy of the Czech Republic during the bark beetle disaster was only 10 percentage points, expressed in gross value added. The value of the total production of the forestry sector has been declining since 2019, which indicates a declining self-financing capacity of the sector.

The aim of the paper

- The paper addresses the issue of the position of the forestry sector and the wood processing industry in the Czech Republic in the bark beetle disaster and with the help of selected macroeconomic and sectoral economic indicators and tries to predict the development after the bark beetle disaster subsides.
- At the same time, it compares economic indicators with sectoral indicators in Austria.

Annual total harvesting and proportion of salvage cutting

	Annual harvesting (Total in mil m ³)		Proportion of salvage cutting (%)	
	CZ	AT	CZ	AT
2010	16,74	17,83	38,6	28,6
2015	16,16	17,55	50,4	42,3
2016	17,61	16,76	53,4	32,0
2017	19,39	17,65	60,6	36,7
2018	25,69	19,19	89,6	51,7
2019	32,58	18,90	95,0	62,1
2020	35,80	16,79	94,8	53,1
2021	30,26	18,42	86,9	32,8



In the Czech Republic, annual total harvesting culminated so far in 2020 with a share of salvage cutting of 94,8 %. In Austria, annual total harvesting was 18.42 mil m³, but the share of salvage cutting was 32.8%. The main reason was increase in wood prices.

Source: Czech Statistical Office, Holzeinschlagsmeldung

Main indicator of forestry production (NACE 02)

Production indicator	Forest products production (in total mil €)		Round timber production (in mil €)	
	CZ	AT	CZ	AT
Year				
2010	1 424	2 094	560	874
2016	1 928	2 104	697	855
2017	2 073	2 183	762	903
2018	2 003	2 242	831	953
2019	1 868	1 967	846	796
2020	1 813	1 704	821	644

CZ -The data characterize the basic value of forestry production and the main share of the main product - saw logs.

AT - The production value of the forestry sector consists of the net increment of forest trees, forest tree plants, production of raw wood for material and energy use, as well as forestry services, ancillary activities and other products (e.g. secondary uses).

Source: Czech Statistical Office, national accounts for forestry and logging, Statistics Austria. Economic Accounts for Forestry.

Forest products production (in mil m3)

Timber deliveries	In total		Saw round timber		Industrial wood		Fire wood (wood for energy)	
	CZ	AT	CZ	AT	CZ	AT	CZ	AT
2017	19.39	17.6	11.49	9.5	5.52	3.2	2.38	4.9
2018	24.69	19.2	14.43	10.4	6.42	3.6	3.85	5.2
2019	30.39	18.9	18.92	9.8	6.45	3.4	5.02	5.6
2020	34.49	16.8	20.68	8.7	8.36	2.9	6.72	5.3

CZ- Timber deliveries (sale and own consumption of forest enterprises). From 2018 to 2020, the volume of unsold stocks of bark beetle calamity wood, especially pulpwood, is increasing.

AT- Timber deliveries is balanced and responds mainly to changes in prices.

Source: Czech Statistical Office, national accounts for forestry and logging, Statistics Austria. Economic Accounts for Forestry

Forestry and logging (NACE 02) Manufacture of articles of wood and of wood products and cord, except furniture (NACE 16) on gross value added at basic prices 2015 (%)

Sectors	NACE 02		NACE 16	
	CZ	AT	CZ	AT
Year				
2010	0.681	0.407	0.712	0.736
2015	0.649	0.397	0.590	0.746
2016	0.657	0.384	0.534	0.780
2017	0.669	0.381	0.548	0.780
2018	0.593	0.366	0.505	0.842
2019	0.749	0.321	0.460	0.855

Framework macroeconomic indicators of forestry and wood processing industry. Gross value added is calculated from the production value less the products and services consumed, processed or transformed in the production process.

Source: Czech Statistical Office, national accounts for forestry and logging, Statistics Austria. Economic Accounts for Forestry



**Selected macroeconomic data signaling
the development of the CZ-NACE 02
sector after the bark beetle calamity**

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Harvesting – Forest production – Net value-added

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Annual harvesting (Total in mil m ³)	16,74	15,38	15,06	15,33	15,48	16,16	17,61	19,39	25,69	32,58	35,80	30,26
Chain index simple	---	0,919	0,979	1,018	1,010	1,044	1,090	1,101	1,325	1,268	1,099	0,845
Basic index simple (2010)	---	0,919	0,900	0,916	0,925	0,965	1,052	1,158	1,535	1,946	2,139	1,808
Harvesting (m ³ .ha ⁻¹)	6,30	5,78	5,66	5,76	5,80	6,06	6,60	7,26	9,61	12,18	13,35	11,35
Forest products production (in total mil CZK)	36 010,8	41 849,7	43 863,8	45 395,2	48 215,6	53 658,7	52 118,4	54 592,7	51 344,4	47 943,3	47 922,3	
Chain index simple	---	1,162	1,048	1,035	1,062	1,113	0,971	1,047	0,940	0,934	1,000	
Basic index simple (2010)	---	1,162	1,218	1,261	1,339	1,490	1,447	1,516	1,426	1,331	1,331	
Net value-added (mil CZK)	14 270,5	15 389,2	17 773,9	19 120,4	21 674,3	27 934,3	27 314,2	29 175,5	25 176,7	20 471,0	20 471,5	
Chain index simple	---	1,078	1,155	1,076	1,134	1,289	0,978	1,068	0,863	0,813	1,000	
Basic index simple (2010)	---	1,078	1,245	1,340	1,519	1,957	1,914	2,044	1,764	1,434	1,435	

Source: Czech Statistical Office, national accounts for forestry and logging

Development of added value and labor productivity CZ-NACE 02

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gross value-added (mil CZK)*	16 622,30	17 861,50	20 338,60	21 922,20	24 501,30	30 868,50	30 264,80	32 268,90	28 433,50	23 960,00	24 127,70
Net value-added (mil CZK)*	14 270,50	15 389,20	17 773,90	19 120,40	21 674,30	27 934,30	27 314,20	29 175,50	25 176,70	20 471,00	20 471,50
Gross value-added (mil €)**	657,27	726,49	808,92	844,01	889,89	1 131,42	1 119,55	1 225,56	1 108,82	933,31	912,41
Net value-added (mil €)**	564,27	625,93	706,91	736,14	787,21	1 023,87	1 010,40	1 108,07	981,82	797,41	774,15
Number of employees in forestry activities	15 150	14 138	13 792	13 339	13 320	13 125	13 132	13 386	13 646	13 615	13 682
Labour productivity from GVA (ths. CZK/worker)	1 097,182	1 263,368	1 474,666	1 643,467	1 839,437	2 351,886	2 304,660	2 410,645	2 083,651	1 759,824	1 763,463
Labour productivity from GVA (ths. €/worker)	43,384	51,386	58,651	63,274	66,808	86,203	85,254	91,555	81,256	68,550	66,687
Fixed capital consumption (mil CZK)	2 352	2 472	2 565	2 802	2 827	2 934	2 951	3 093	3 257	3 489	3 656
Fixed capital consumption (mil €)	93	101	102	108	103	108	109	117	127	136	138
* At current prices											
** At current prices, converted at the average annual EUR/CZK exchange rate											
Average annual rate EUR/CZK	25,290	24,586	25,143	25,974	27,533	27,283	27,033	26,330	25,643	25,672	26,444

Conclusion

- In terms of macroeconomic data, the forestry sector in Austria appears to be more stable compared to the forestry sector in the Czech Republic.
- The production values of AT-NACE 02 and 16 do not have significant extremes and the share of the timber industry in the national economy is on an increasing trend.
- The forestry sector of the Czech Republic CZ-NACE 02 shows a decline in the main macroeconomic indicators between 2017 and 2020 as a result of the bark beetle disaster.
- Significant declines can be detected especially in net value added and labour productivity.
- **There is therefore a real danger of a decline in the overall performance of the forestry sector and a loss of economic viability!**

Thank you for your attention.
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