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DISCRIMINATION IN THE CZECH LABOUR MARKET IN THE SOCIOECONOMIC CONTEXT

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Introduction

This study aims to describe the current state of discrimination in the Czech labour market as affected by the social and economic status of employees. It also aims to identify factors which increase discrimination in the socioeconomic context.

The first part summarises the macroeconomic development in the sectoral and regional classification in the stated years, laying the groundwork for thoroughly analysing the outcomes of wage development in the private and public sector. The second part analyses differences in remuneration by key socioeconomic factors—age, gender, education, regions, types of job, citizenship, and economic sector. The third part takes a detailed look at the Karlovy Vary Region, i.e. he least developed region in terms of the gross domestic product. There we will take a look at a detailed classification of a variety of regional indicators, presenting a basic structural and cross-sectional comparison with nationwide data.

The analysis‘ key data sources include data from national accounts (CSO) and the Average Earnings Information System (ISPV). Where possible, we also observe the impact of the covid-19 pandemic, not only on absolute values, but most importantly on various ratio and structural indicators. In theoretical terms, the issue of discrimination in the labour market is exhaustively described by Palíšková (2019); our study is more empirical in nature.

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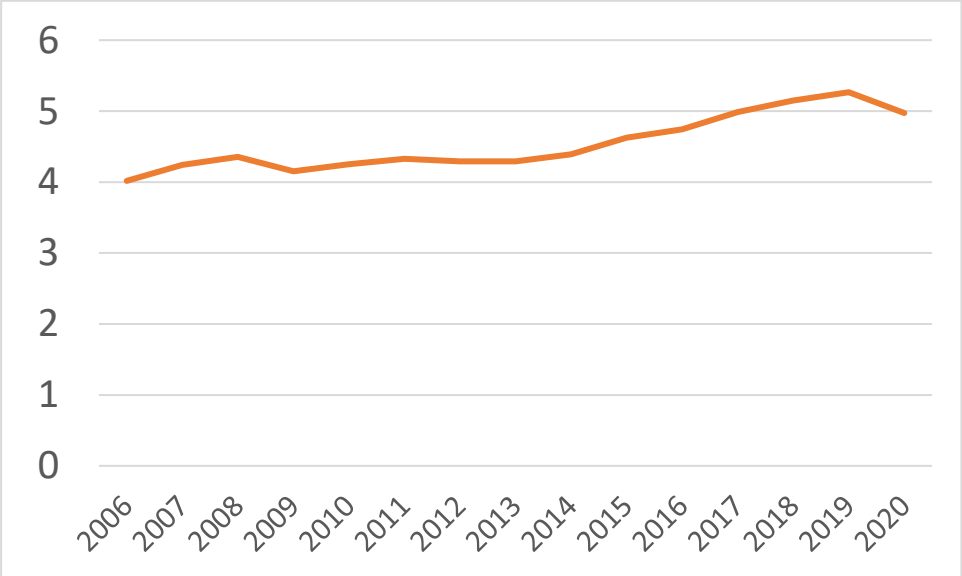
1 Macroeconomic development in 2006–2020

1.1 Overall development of the Czech GDP

Chart 1 shows GDP development in Czechia in 2006–2020. Values are provided in constant prices for 2015 for the purposes of adjustment in terms of price level development. In Chart 1.1 we see a relatively quick GDP growth between 2006 and 2008, followed by a drop in 2009, slight increase in 2010 and 2011, followed once again by a slight recession 2012–2013. From 2014 to 2019, we can see a relatively marked economic growth, followed by a drop in 2020, "the first year of the pandemic". Tables used for the charts in this chapter are listed in Annexes to account for frequent backward revisions. Data for 2020 is preliminary. However, considering the deadline for this study's submission, data published on June 29, 2021 could not be used.

This chapter partially follows up on Fischer's analysis (2020), with data for 2019 and preliminary data for 2020 included.

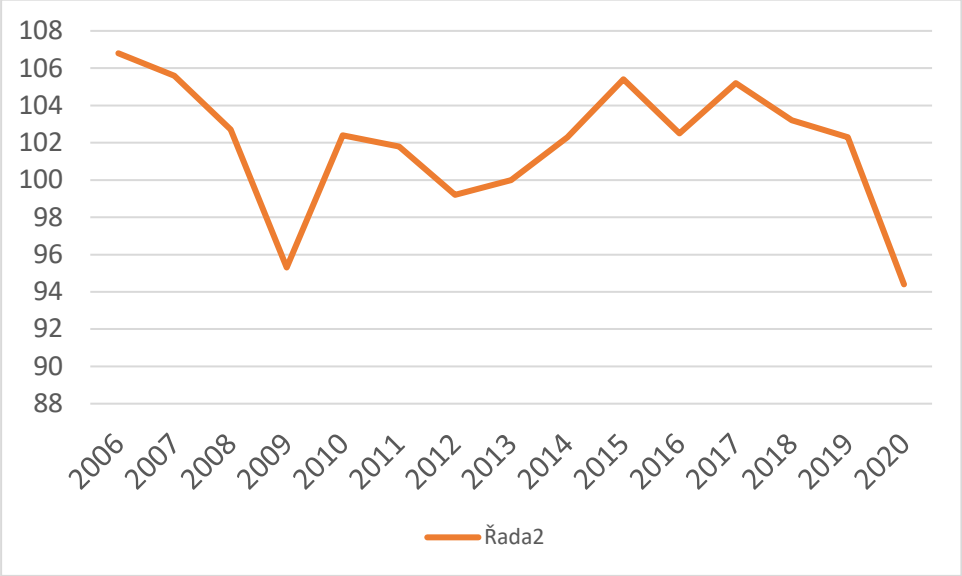
Chart 1.1 Development of the Czech GDP, constant prices 2015, billions of CZK



Source: Annual national accounts database, CSO, table M000101c, as of June 25, 2021.

To improve transparency, we can use year-on-year indices, constructed from the GDP development in constant prices (Chart 1.2), to look at the economic development in the stated period. After a period of 6 % year-on-year GDP growth in 2006 and 2007, there was a 5 % (4.7 % to be exact) year-on-year drop in 2009. A two-percent year-on-year growth in 2010 and 2011 was followed by a slight year-on-year drop 2012 (–0.8 %), stagnation in 2013, and then a year-on-year growth ranging from two to five percent from 2014 to 2019. Subsequently, 2020 saw a 5.6 % decrease.

Chart 1.2 Development of the Czech GDP, constant prices 2015, year-on-year indices



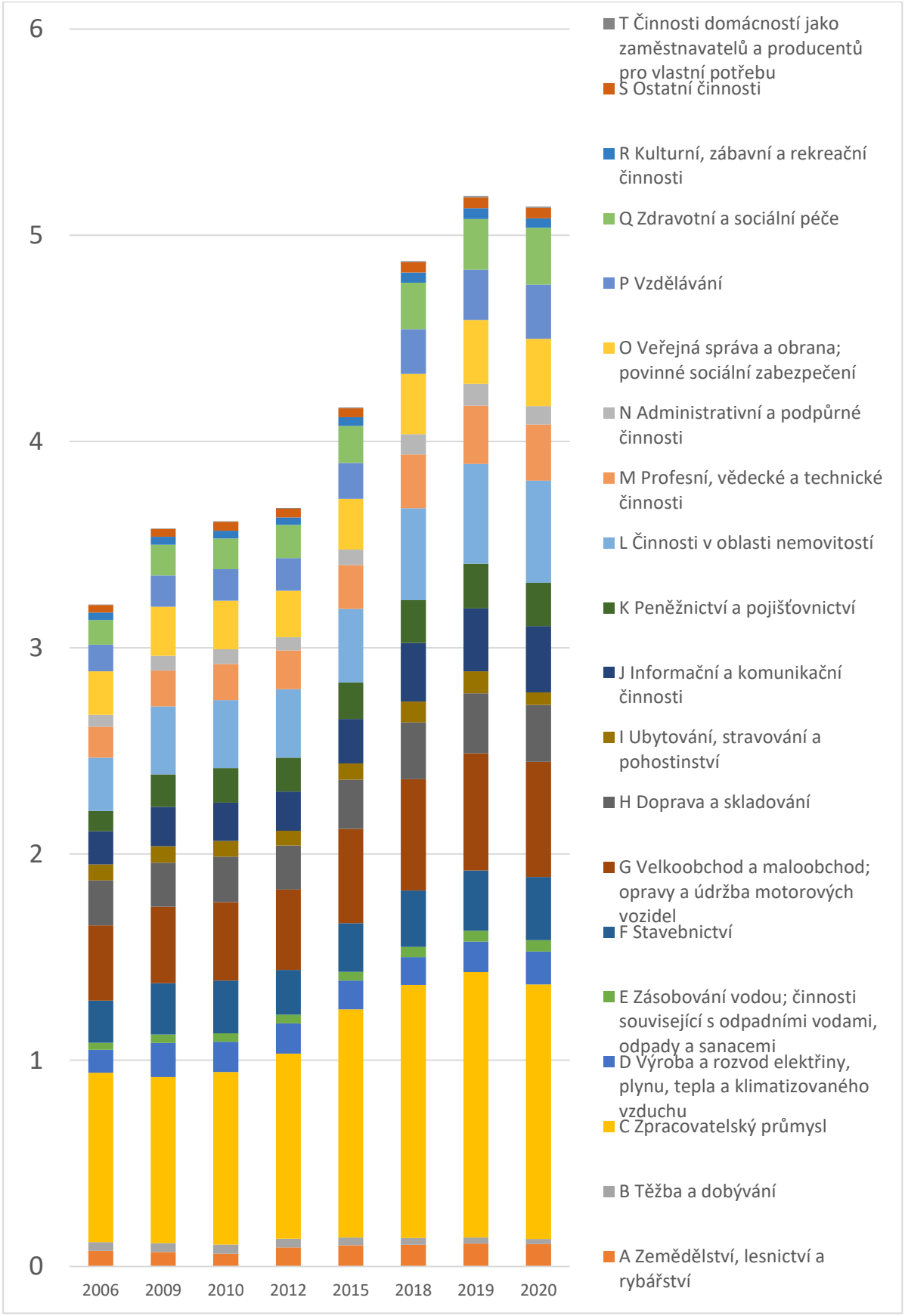
Source: Annual national accounts database, CSO, table M000101d, as of September 28, 2020.

1.2 GDP development by industry

Chart 1.3 shows GDP development by industry, with values listed as going prices, including the real production and price level development. The manufacturing industry (NACE C) was the most significant as its nominal value amounted to 821 bil. CZK in 2006 and 1.234 bil. CZK in 2020. We will take a more detailed look at manufacturing later. In mining and quarrying (NACE B), there was a drop from 2006 to 2020, from 42 bil. CZK in 2006 to 24 bil. CZK in 2020. On the other hand, human health and social work activities saw a great increase (from 119 bil. CZK in 2006 to 276 bil. CZK in 2020). It is not surprising that there was also a marked nominal year-on-year increase in 2020 due to an increased healthcare consumption on account of the pandemic. Interestingly, this industry grew by almost 35 % over three years (2017–2020). A similarly marked growth can be also seen with education and information and communication. While in case of education this is affected by the costs method of pricing non-market production (compare with Musil, Fischer, 2015), in case of ICT this was likely caused by an increase in actual demand due to the pandemic, among other things.

The structural Chart 1.4 will give us a more accurate idea of the development of the sectoral structure of the economy.

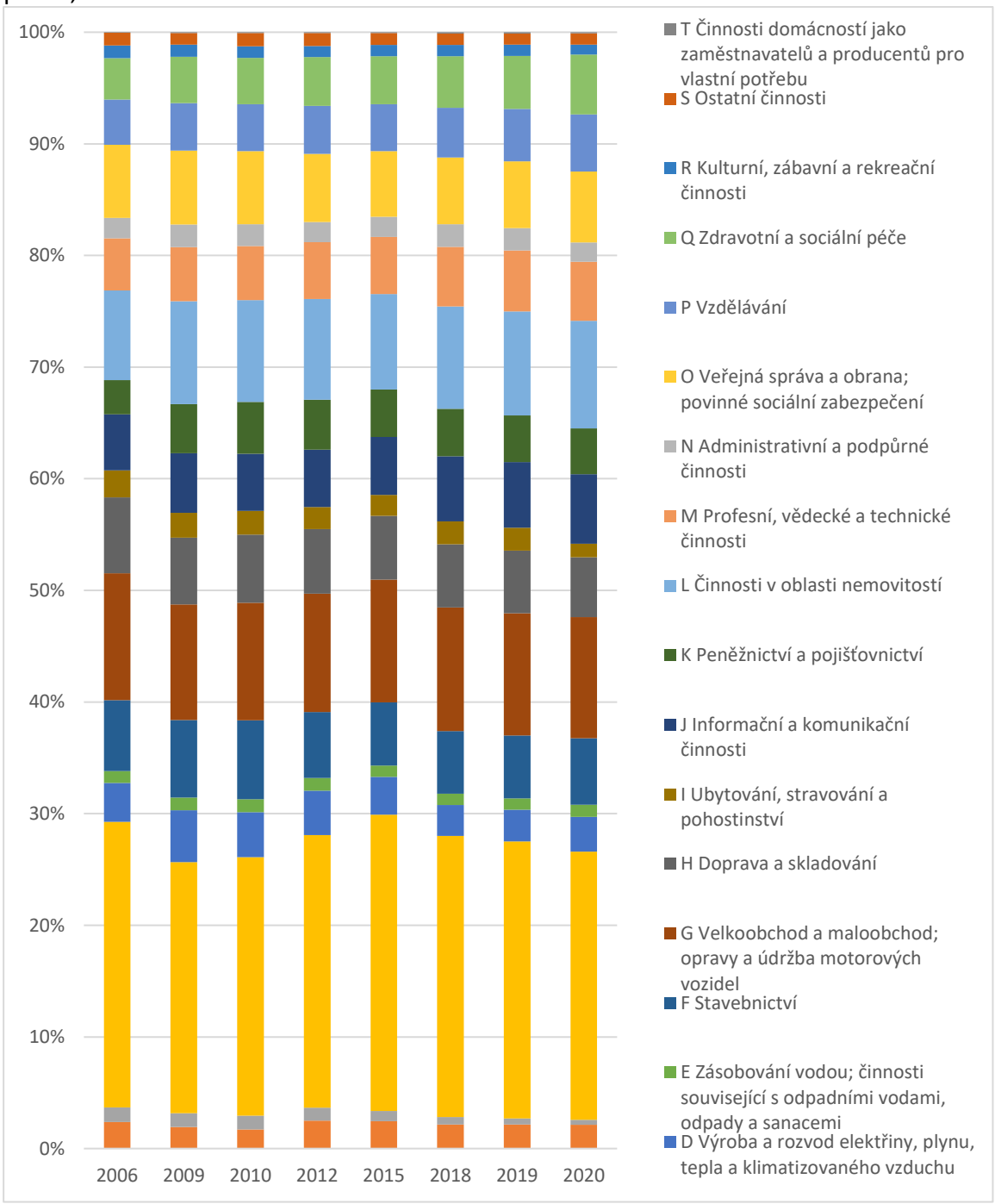
Chart 1.3 Development of the Czech gross value added by industry, going prices, billions of CZK



Source: Annual national accounts database, CSO, table M000104a, as of June 25, 2021.

A - Agriculture, forestry, and fishing, B - Mining and quarrying, C – Manufacturing, D- Electricity, gas, steam and air conditioning supply, E - Water supply; sewerage, waste management and remediation activities, F – Construction, G – Wholesale and retail trade; repair of motor vehicles and motorcycles, H – Transportation and storage, I – Accommodation and food service activities, J – Information and communication, K – Financial and insurance activities, L – Real estate activities, M – Professional, scientific, and technical activities, N – Administrative and support service activities, O – Public administration and defence; compulsory social security, P – Education, Q – Human health and social work activities, R – Arts, entertainment and recreation, S – Other service activities, T – Activities of households as employers; undifferentiated goods- and services- producing activities of households for own use

Chart 1.4 Development of the industrial structure of the Czech gross value added, going prices, %



Source: Annual national accounts database, CSO, table M000104a, as of June 25, 2021.
A - Agriculture, forestry, and fishing, B - Mining and quarrying, C – Manufacturing, D- Electricity, gas, steam and air conditioning supply, E - Water supply; sewerage, waste management and remediation activities, F – Construction, G – Wholesale and retail trade; repair of motor vehicles and motorcycles, H – Transportation and storage, I – Accommodation and food service activities, J – Information and communication, K – Financial and insurance activities, L – Real estate activities, M – Professional, scientific, and technical activities, N – Administrative and support service activities, O – Public administration and defence; compulsory social security, P – Education, Q – Human health and social work activities, R – Arts, entertainment and recreation, S – Other service activities, T – Activities of households as employers; undifferentiated goods- and services- producing activities of households for own use

Chart 1.4 shows the development of the share of individual industries (in the most general classification as per CZ-NACE) in selected years for the 2006–2020 period. There was no clear trend over this period. Manufacturing (NACE C) was the most significant sector. Its share dropped significantly between 2006 and 2009, followed by a strong growth between 2010 and 2015 and then a slight drop in the 2015–2020 period. The share of electricity, gas, steam and air conditioning supply grew between 2006 and 2009, slightly decreasing from 2012 to 2018. Education and human health and social work activities saw a gradual growth in share, with the growth of both sectors accelerated in the covid year of 2020. Conversely, the share of accommodation and food service activities decreased, corresponding with strongly reduced opportunities to provide these services due to the adoption of protective measures.

Analysing changes in GDP structure can under no circumstances be viewed as an end in itself. For instance, tax revenue is one of the things depending on the amount of GDP. Nevertheless, the relationship between the development of taxes collected and the amount of GDP will no doubt be affected by the development of the GDP structure as the impact of, for example, added value tax on non-market sectors will differ from the impact on market sectors.

Now let us take a more detailed look at the development of manufacturing. Chart 1.5 shows the development of individual sectors falling under the umbrella of manufacturing (two-digit CZ-NACE classification). Manufacture of motor vehicles, trailers and semi-trailers (NACE 29) is the most important manufacturing sector. Moreover, the amount of gross value added, measured in going prices, more than doubled—from 127 bil. CZK in 2006 to 271 CZK in 2019. There was a significant growth in 2019 when compared to 2018. However, we do not have the data for 2020 at our disposal as not even preliminary numbers for the previous year had been published by June 25, 2021.

Likely in connection with the sector's development, growth can be also witnessed in manufacture of machinery and equipment n.e.c. (from 75 bil. CZK in 2006 to 109 bil. CZK in

2019), manufacture of electrical equipment (from 49 bil. CZK in 2006 to 99 bil. CZK in 2019), and manufacture of rubber and plastic products (from 59 bil. CZK in 2006 to 93 bil. CZK in 2019).

Chart 1.6 shows the development of the sectoral structure of individual sectors of the manufacturing industry (share of individual sectors in the gross value added of the manufacturing industry). The share of the most significant sector, i.e. manufacture of motor vehicles, grew steadily in 2006–2019; from 16.1 % in 2006 to 2.9 % in 2019. Considering that manufacturing in Czechia constituted approximately a quarter of the total gross value added in 2019, this means that a single industry was responsible for almost six percent of the total GDP. From 2009 to 2009, the food industry's share was decreasing slightly, the decrease stopping in the period of 2014 to 2019.

Increasing dependency on a single industry (which is then multiplied in related industries due to supply-customer relationships) is not free of risks, especially where a distinctly cyclical industry is concerned. That is why we expect the first preliminary data for 2020 with some trepidation.

The following tables show year-on-year development of the gross value added in constant prices classified by industry, at first using CZ-NACE sections and then two-digit classification. Once again, due to a lack of data sources in two-digit CZ-NACE classification, the first table contains data for the 2006–2020 period, the second for 2006–2019.

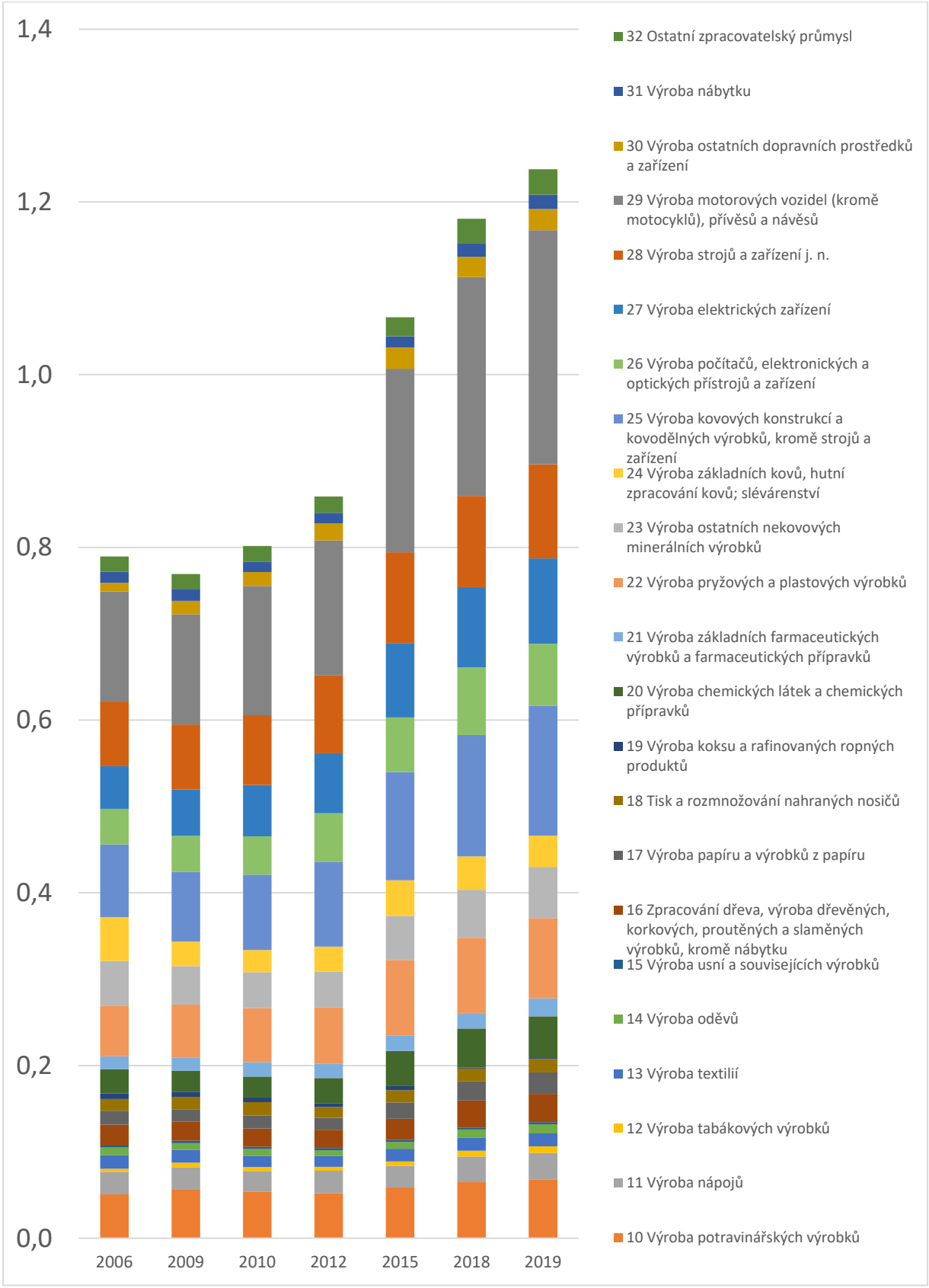
Regarding Table 1.1, let us focus on the years which are also listed in charts. In 2006, the national economy's gross value added grew (its development essentially copies that of the total gross domestic product as evident in detailed annexes concerning GDP structure by production method) at a high year-on-year rate of +7.3 %. The growth was driven by a very large growth of the manufacturing industry, constituting the unprecedented 20.6 %. The crisis year of 2009 saw a year-on-year decrease of gross value added by 5.3 %, with manufacturing dropping by 12.5 %. The subsequent year of 2010 brought about a slight recovery (+3 %), driven mostly by a growing manufacturing industry (+11.6 %), accompanied by a slight growth of the construction sector (+3.5 %) or, for instance, transportation and storage (+1.2 %). On the national-economic level, year 2010 saw a slight decrease (-0.8 %). Manufacturing grew by 4 %, construction by 6.1 %, transportation and storage by 2.5 %. 2015 was the second year of a long-term economic growth (2014–2019). Overall, economy grew by 4.8 %, once again driven

by the manufacturing industry (+7.6 %), business sectors (+11 %), ICT (+10 %), and professional, scientific, and technical activities (+ 7 %).

In 2019, the year-on-year rate of gross value added growth decreased somewhat when compared to 2017 (from 5.2 % to 2.2 %). The growth rate in manufacturing slowed down (from 8.7 % to 3.0 %). **Thus, it is clear that the economy had been cooling somewhat even before the covid-19 pandemic.** 2020, i.e. the first year of the covid period, saw a 5.4 % year-on-year decrease in added value. Manufacturing dropped by 6.9 %. As a result of protective regulatory measures, accommodation and food service activities experienced the most dramatic drop (by 46.8 %). Information and communication grew slightly (+1,5 %). Growth of healthcare (by +3.1 % in real terms) education (only +0.5 % in real terms) points to a relationship between this real development and the nominal development described in the previous section. In relation to the decline of the manufacturing industry and selected services, decrease was also experienced in the energy sector (by 9.5 %) and transportation and storage (by 12.9 %). It can be said that the manufacturing industry is theoretically and empirically strongly pro-cyclical as year-on-year growths or declines have a markedly larger amplitude when compared to the development of the total economy.

In Table 1.2, let us focus primarily on the development of sector no. 29: manufacture of motor vehicles, trailers and semi-trailers. Starting with 2006, we can see that the gross value added grew by 7 % in total in the national economy; in the manufacturing industry by 20.6 %; and in the automotive industry by 32 % in year-on-year terms! The crisis year of 2009 or post-crisis year of 2010, as well as the overall 2014–2019 growth period, warrant a similar attention. Considering the sector's significance, the pro-cyclical nature of the automotive industry is a warning sign. Once more, we expect the 2020 figures with trepidation.

Chart 1.5 Development of the industrial structure of the gross value added in Czech manufacturing, going prices, billions of CZK



Source: Annual national accounts database, CSO, table TB0001B1Ga, as of June 25, 2021.

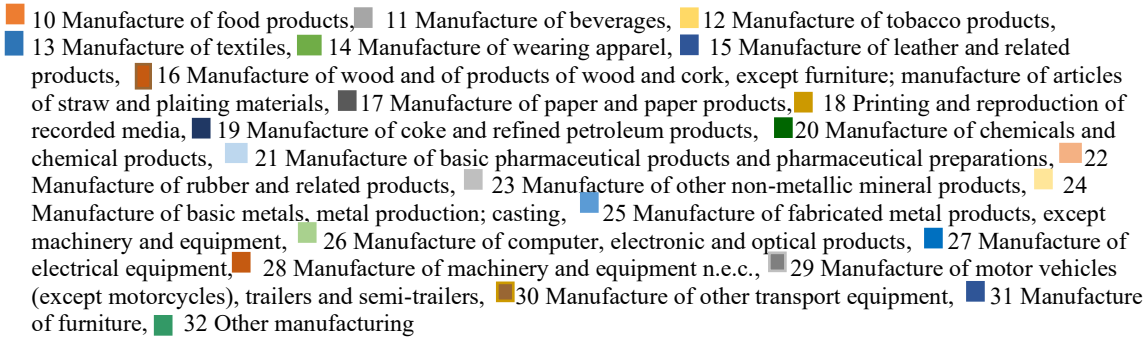
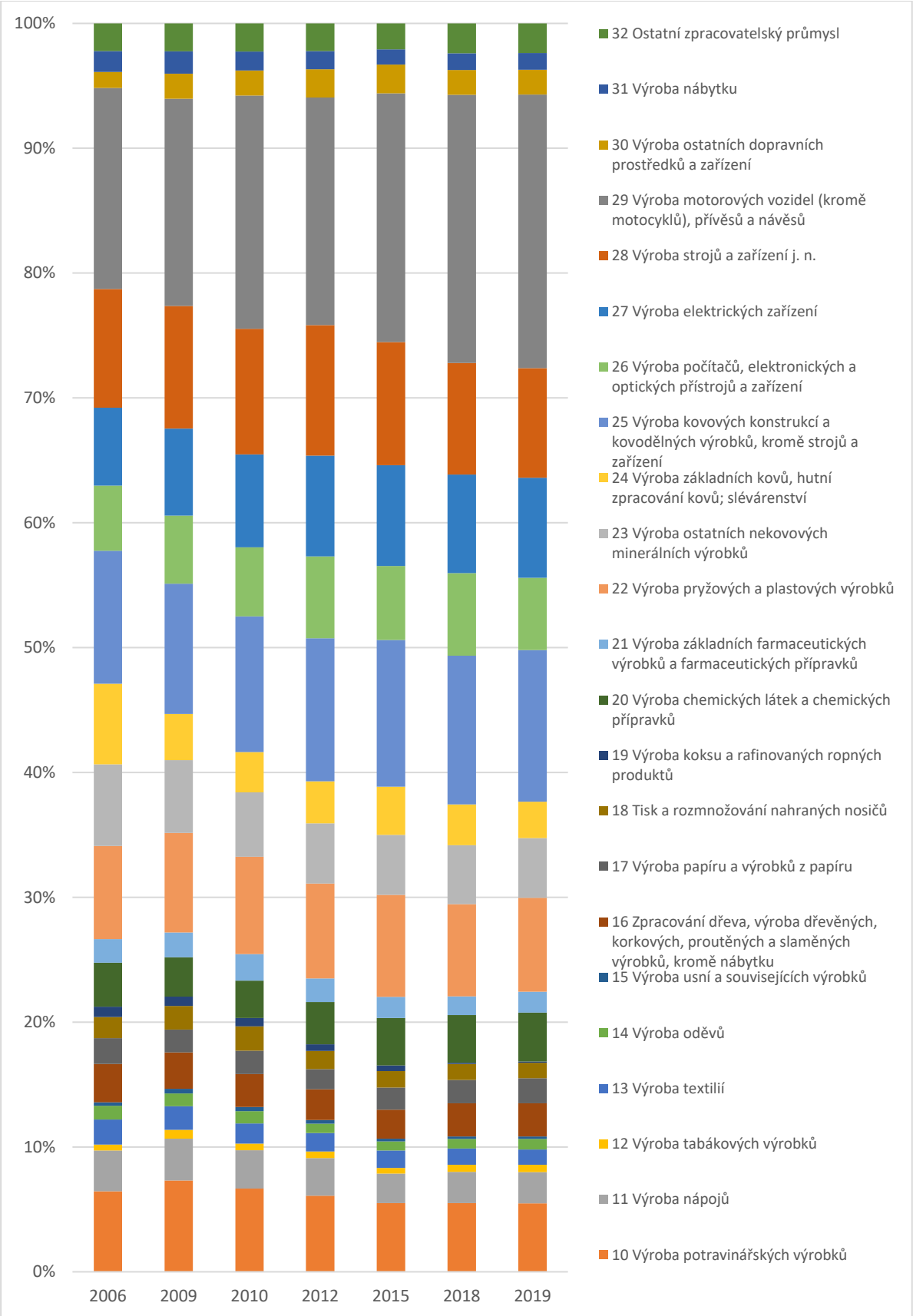


Chart 1.6 Development of the industrial structure of the gross value added in Czech manufacturing, going prices, %



Source: Annual national accounts database, CSO, table TB0001B1Ga, as of June 25, 2021.

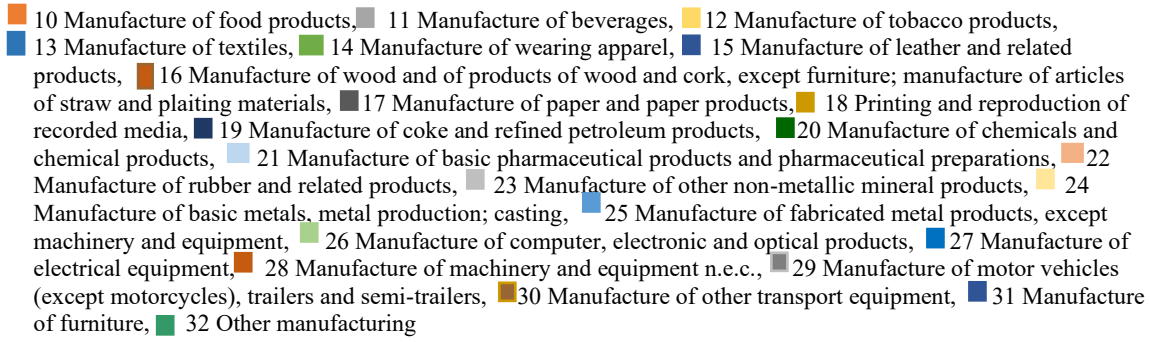


Table 1.1 Development of the gross value added, constant prices, SOPR=100

NACE	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
TOTAL	**107,3**	**105,3**	**103,6**	**94,7**	**103**	**101,8**	**99,2**	**100**	**102,9**	**104,8**	**102,5**	**105,2**	**103,4**	**102,2**	**94,6**
A Agriculture, forestry, and fishing	92,9	77,2	101,7	130,2	80,1	90,7	108,6	98,3	107	106,7	105,3	96,2	104,1	105,6	104,8
B Mining and quarrying	113,6	96,9	88,8	91,3	96	91,2	101,9	85,9	124,3	98,6	92,3	90,8	93,2	80,8	81,3
C Manufacturing	120,6	106,5	108,2	87,5	111,6	111,1	96	98,7	103,6	107,6	104,6	108,7	101,9	103	93,1
D Electricity, gas, steam and air conditioning supply	101,2	100,2	116,9	81,3	96,2	93,1	98,6	93	94,6	92	93,2	106,7	98,8	97,8	90,5
E Water supply; sewerage, waste management and remediation activities	101,8	100,3	100,4	110,4	80	99,8	89,7	83,2	103,4	103,1	104	94,4	105,5	110,1	100,7
F Construction	99,5	103,9	98	103,7	103,5	94,7	93,9	101,3	105,1	102,1	96,3	100,8	100,5	97,4	96,5
G Wholesale and retail trade; repair of motor vehicles and motorcycles	107,6	110,6	100	93,8	106	103,5	102,2	100,4	108,9	110,8	99,2	107,3	104,6	103,3	95,7
H Transportation and storage	108	102,3	97,9	85,3	101,2	94,6	97,5	97	95,3	104,2	103,4	110,2	106,6	103,2	87,1
I Accommodation and food service activities	97,4	108,3	111,1	75,4	92,8	107,6	87,2	98,6	97,2	101,4	102,9	102,7	97,9	101	53,2
J Information and communication	110,4	112,2	103,2	99,9	99,7	102,1	98,4	102,9	107,8	109,7	103,9	109,2	110,3	102,6	101,5
K Financial and insurance activities	105,3	121,4	111,8	108,4	100,1	98,8	102,2	109,4	98,1	106,1	106,5	109,6	110,6	104,2	97,2
L Real estate activities	102,7	102,6	103,3	99,4	100,9	102,4	102,5	103,5	103	101,1	103,9	96,9	102,9	99,8	96,9
M Professional, scientific, and technical activities	96,1	108,3	100,4	93,4	103,6	97,9	110,3	100,5	102,3	107,4	104,7	105,8	105,2	106,8	94,8
N Administrative and support service activities	102,6	116,3	103,3	93,6	98,6	100,7	100,9	106,8	102	104,6	105,4	110	101,8	99,2	79,7
O Public administration and defence; compulsory social security	101,1	102,1	102,8	100,4	101,9	95,6	100,8	98,7	99	100,4	101,3	100,6	102	101,6	100,6
P Education	99,9	101,4	99,8	100,4	99,7	102,6	100,2	102	101,3	100,2	100,4	103,1	102,7	102,2	100,5
Q Human health and social work activities	95,1	99,1	102,8	103,1	100,4	93,3	102,6	100,8	102,8	98,3	102,5	102	101,6	100,5	103,1
R Arts, entertainment and recreation	106,9	99	96,5	92,4	96,1	106,4	97,8	101	102,4	113,4	109,5	104,5	107,3	112,8	82

S Other service activities	107	105,6	84,2	100,5	113,8	111	85,5	97,3	100	99,2	98,8	99,6	99,3	97,8	93,6
T Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	106,1	101,6	120,6	127,9	93,2	96,2	108	108,3	105,4	103,6	120,2	108,2	110,1	105,6	90,2

Source: Annual national accounts database, CSO, table M000104d, as of June 25, 2021.

Table 1.2 Development of the gross value added, constant prices, SOPR=100, detailed classification

NACE	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
MANUFACTURING IN TOTAL	**120,6**	**106,5**	**108,2**	**87,5**	**111,6**	**111,1**	**96**	**98,7**	**103,6**	**107,6**	**104,6**	**108,7**	**101,9**	**103**
10 Manufacture of food products	110,1	106	90,6	95,8	107,4	106	95,9	96,1	101,2	110,4	107,3	104,8	98,3	104,2
11 Manufacture of beverages	117,3	63,1	100,6	88	100,5	108,7	100,5	92,2	96,3	100,6	107,6	106,7	103,5	100,4
12 Manufacture of tobacco products	104,3	124,9	115,6	103,8	70,9	105,7	95,5	71,9	89,9	101	105,2	114,8	97,1	105,1
13 Manufacture of textiles	113,8	82,9	122,9	79,2	89,7	96,1	96,2	106,2	102,5	96,5	101,6	102,7	94,5	94,3
14 Manufacture of wearing apparel	106,1	96,6	106,6	80,7	96,5	97,8	73,6	116	96	103,9	106,3	110,6	101	99,4
15 Manufacture of leather and related products	96,2	85,6	100,8	111,3	82,9	89,8	87,4	120,8	97,6	119,4	110,8	101	82,3	92,1
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	107,4	92,4	113,7	82,6	107,5	96,5	103,1	87,2	97,4	106,8	92,7	107,9	95,4	103,5
17 Manufacture of paper and paper products	114,5	103,7	101	105,5	104,5	95,9	97,8	94,9	107,7	109,8	108,5	107,5	98,6	108,7
18 Printing and reproduction of recorded media	115,8	125,4	105	86,2	126,9	95	88,8	98,7	109,3	108,6	103,1	98,8	110,2	96,5
19 Manufacture of coke and refined petroleum products	398,9	22,6	243,2	295,7	-78,3	37,1	207,6	102,3	36,9	179,3	118,4	41,8	13,9	122,4
20 Manufacture of chemicals and chemical products	95,2	112,5	125,1	101,8	80,3	90,8	110,2	90	111,8	135,8	104,4	117,4	104,8	106,1
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	102,7	97,2	103,7	102,3	112,1	103	99,6	108	111,3	94,9	99,9	106,5	94	117,5
22 Manufacture of rubber and plastic products	136,9	106,3	116,8	98,2	113,4	104	92,9	99,6	102,1	107,6	103,6	105,7	103,5	104,7
23 Manufacture of other non-metallic mineral products	113	106	102,4	82,4	96,7	110,9	92,5	98,7	106,6	107	94,2	106,8	107,8	99,9
24 Manufacture of basic metals	97,3	70,2	64	84,6	90,1	93,5	85,8	122,3	103,1	101,8	112,1	89	74,3	115,8
25 Manufacture of fabricated metal products, except machinery and equipment	116,8	101	100,7	84,2	119,9	107	101,6	100,9	107,8	109,1	104,7	106,3	100,1	101,7
26 Manufacture of computer, electronic and optical products	133,5	124,4	106,9	86,8	142,2	111,6	105,6	93,2	105,1	108,4	106,8	117,8	114,1	97,3
27 Manufacture of electrical equipment	121,1	120,7	103,9	92,4	116,7	123,6	94,6	97,8	111,3	110,2	96,9	114	104,6	106,7
28 Manufacture of machinery and equipment n.e.c.	132,8	121,1	114,8	74,2	118,2	121,2	96,9	99,2	98,1	102,8	95,8	111,4	97,1	97,7
29 Manufacture of motor vehicles, trailers and semi-trailers	131,6	118,2	126,1	77,8	131	124,1	87,9	95,7	101,2	108,5	111,4	115,8	105,2	104,2
30 Manufacture of other transport equipment	107,4	120	104	84,6	110	131,5	91,1	104,4	119,1	105	107,6	87	100	101,8
31 Manufacture of furniture	99,2	108,8	118,7	79,4	96	116,2	95	101,3	103	101,7	112,7	111	99,5	102,8
32 Other manufacturing	115,7	111	104,7	85,8	104,9	108,4	101,9	108,9	99,5	103,1	111	107,9	106,1	103

Source: Annual national accounts database, CSO, table TB0001B1Gd, as of June 25, 2021.

1.3 GDP development by region

The regional perspective, studied in the second and third chapter, is another measure of classification. The Czech Statistical Office monitors gross value added data both in respect to regions (NUTS3), and to the so-called cohesion regions (NUTS2). Regarding the formulation of regional policy, the classification into 14 regions (NUTS3) will be primarily important to us. Unfortunately, the relevant data for 2020 had not been made available by June 25, 2021.

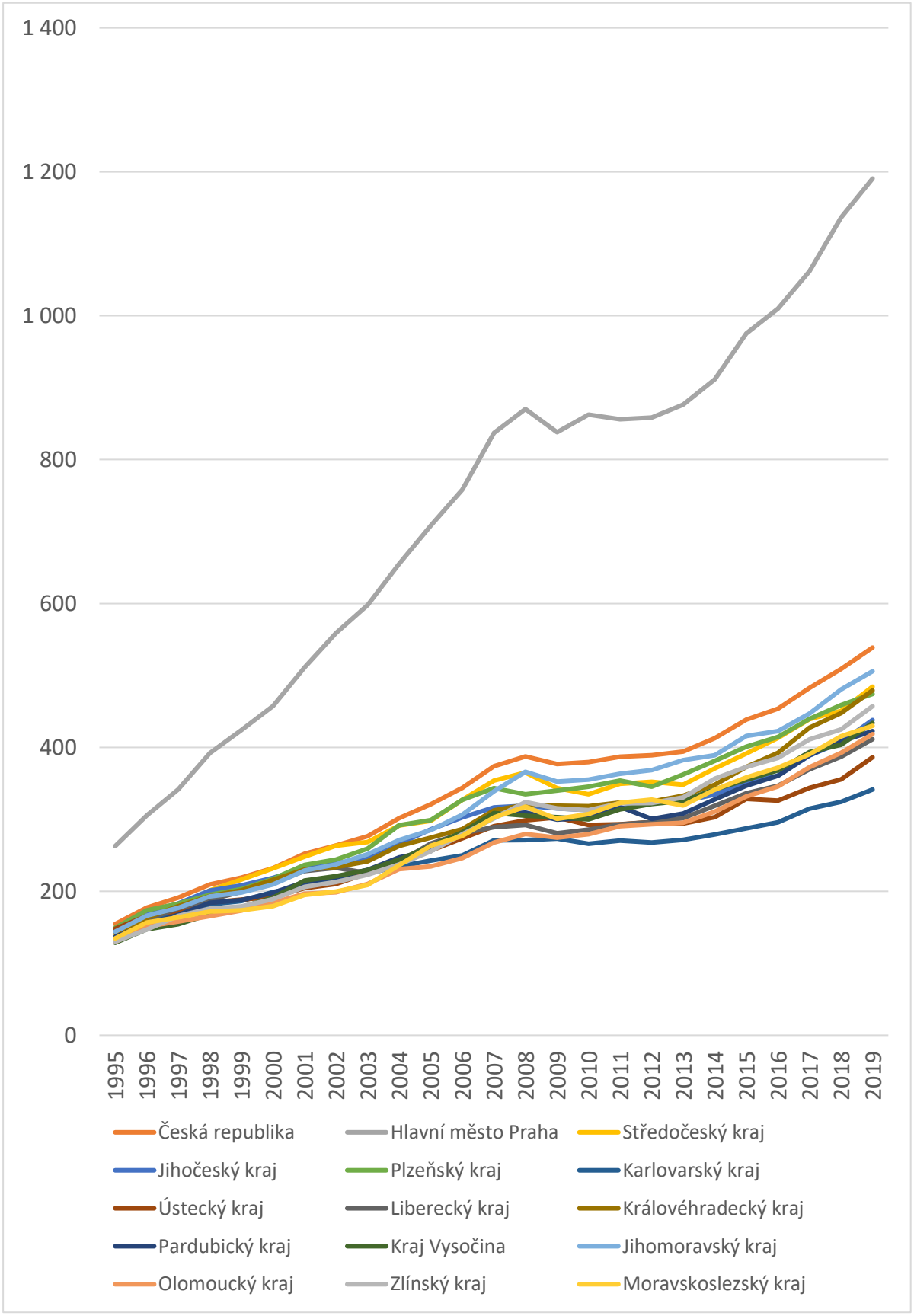
Table 1.3 Regional GDP per 1 inhabitant, going prices, CZK

Territory	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Czechia	343 918	373 888	387 630	376 907	379 650	387 011	389 076	394 151	412 908	438 718	454 022	482 622	509 076	538 816
Cohesion regions - NUTS2														
Prague	758 020	836 939	870 291	838 080	862 444	856 151	858 559	876 359	911 777	975 271	1 009 835	1 061 767	1 136 744	1 190 611
Central Bohemia	327 085	353 798	364 982	343 466	334 970	349 676	352 340	348 241	370 779	391 625	413 124	439 282	450 679	484 475
Southwest	314 175	329 134	326 467	327 035	328 273	333 479	333 834	342 725	356 858	375 244	386 258	412 890	432 041	455 394
Northwest	267 129	285 422	291 407	294 685	285 172	287 301	288 668	288 209	296 551	317 497	318 195	336 265	347 325	374 508
Northeast	282 793	303 727	308 467	301 398	303 479	312 547	308 316	315 382	332 704	353 287	368 220	397 417	416 523	439 987
Southeast	298 811	329 599	347 115	337 214	338 103	348 198	354 000	365 249	374 686	397 307	406 174	431 020	457 591	484 346
Central Moravia	262 250	284 031	301 020	294 066	295 425	305 863	307 423	312 216	332 858	351 655	364 846	391 170	408 138	437 153
Moravian-Silesian	277 145	302 894	317 645	300 665	307 469	323 213	327 488	319 227	341 300	358 407	371 721	390 391	415 513	430 005
Regions - NUTS3														
Prague	758 020	836 939	870 291	838 080	862 444	856 151	858 559	876 359	911 777	975 271	1 009 835	1 061 767	1 136 744	1 190 611
Central Bohemian Region	327 085	353 798	364 982	343 466	334 970	349 676	352 340	348 241	370 779	391 625	413 124	439 282	450 679	484 475
South Bohemian	302 649	316 540	318 904	315 357	312 784	315 115	323 248	325 171	334 700	351 908	360 689	388 721	407 549	438 114
Plzeň Region	327 285	343 401	334 946	340 058	345 546	353 913	345 611	362 226	381 445	401 079	414 514	439 561	458 985	474 310
Karlovy Vary Region	249 888	271 078	271 316	273 170	266 167	270 583	268 021	271 486	278 928	287 508	295 863	315 090	324 453	341 512
Ústí nad Labem Region	273 508	290 732	298 837	302 609	292 167	293 426	296 217	294 304	302 959	328 369	326 270	343 902	355 556	386 363
Liberec Region	280 680	289 290	292 223	280 704	285 941	292 973	296 158	301 907	318 858	336 360	346 725	369 436	387 169	411 399
Hradec Králové Region	286 588	312 744	320 260	319 188	318 478	323 559	324 940	332 914	348 303	372 872	392 482	427 537	447 751	479 318
Pardubice Region	280 473	306 230	309 541	299 856	302 305	317 340	300 829	308 073	327 801	346 772	360 648	389 192	408 366	422 684
Vysočina Region	282 186	308 831	305 177	302 964	299 891	313 878	321 295	325 700	341 723	354 802	368 002	393 460	403 867	434 018
South Moravian Region	306 324	338 975	365 978	352 562	355 167	363 284	368 337	382 527	389 046	415 760	422 688	447 205	480 674	505 896
Olomouc Region	246 319	267 878	279 771	274 629	279 429	290 648	293 249	295 367	311 025	332 055	345 770	372 595	392 463	418 525
Zlín Region	279 520	301 566	324 093	315 167	312 807	322 348	322 790	330 503	356 565	372 940	385 553	411 341	425 150	457 361
Moravian-Silesian Region	277 145	302 894	317 645	300 665	307 469	323 213	327 488	319 227	341 300	358 407	371 721	390 391	415 513	430 005

Source: Annual national accounts database, CSO, table REG_HDP_O, as of September 28, 2020.

The figure in 2019 was approximately 540,000 CZK of gross value added per average inhabitant. Expressed absolutely, it is an important figure as the size of production which then becomes a source of distribution and redistribution, determining the population's living conditions. Chart 1.7 shows nominal GDP development in individual regions, containing data from as early as 1995.

Chart 1.7 Regional GDP per 1 inhabitant, going prices, thousands of CZK



Source: Annual national accounts database, CSO, table REG_HDP_O, as of June 25, 2021.

Czechia, South Bohemian Region, Ústí nad Labem Region, Pardubice Region, Olomouc Region, Prague, Plzeň Region, Liberec Region, Vysočina Region, Zlín Region, Central Bohemian Region, Karlovy Vary Region, Hradec Králové Region, South Moravian Region, Moravian-Silesian Region

Data in Chart 1.7 relates to population. The notably distinct development in Prague is caused by a variety of factors, including those statistical in nature (a result of the survey method). That is because while regional GDP is calculated per inhabitant, the product's creation can also be credited to workers who commute to the capital daily. This commute, especially from the Central Bohemian Region but also from Plzeň or Liberec, happens on a mass scale.

Conversely, the Karlovy Vary Region has long been at the bottom, followed by the Ústí nad Labem Region. It must be taken into account that GDP is not just a fictitious macroeconomic figure. In terms of pensions, this indicator is subsequently used for funding the costs of final consumption and investments. Simply put, a lower rate of regional GDP can lead to a lower rate of final consumption, and thus to worse living conditions of the local population.

Table 1.4 Regional GDP per 1 inhabitant, going prices, CZ average=100

Territory	1995	1998	2001	2004	2007	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Czechia	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Prague	170,1	187,3	202,7	217,2	223,8	227,2	221,2	220,7	222,3	220,8	222,3	222,4	220,0	223,3	221,0
Central Bohemia	91,9	96,1	98,5	96,7	94,6	88,2	90,4	90,6	88,4	89,8	89,3	91,0	91,0	88,5	89,9
Southwest	96,2	94,7	93,0	92,2	88,0	86,5	86,2	85,8	87,0	86,4	85,5	85,1	85,6	84,9	84,5
Northwest	95,6	87,7	81,4	79,5	76,3	75,1	74,2	74,2	73,1	71,8	72,4	70,1	69,7	68,2	69,5
Northeast	91,0	90,1	88,7	83,3	81,2	79,9	80,8	79,2	80,0	80,6	80,5	81,1	82,3	81,8	81,7
Southeast	90,0	88,4	89,0	87,1	88,2	89,1	90,0	91,0	92,7	90,7	90,6	89,5	89,3	89,9	89,9
Central Moravia	84,0	81,5	79,8	77,6	76,0	77,8	79,0	79,0	79,2	80,6	80,2	80,4	81,1	80,2	81,1
Moravian-Silesian	87,1	82,1	77,3	78,4	81,0	81,0	83,5	84,2	81,0	82,7	81,7	81,9	80,9	81,6	79,8
Regions - NUTS3															
Prague	170,1	187,3	202,7	217,2	223,8	227,2	221,2	220,7	222,3	220,8	222,3	222,4	220,0	223,3	221,0
Central Bohemian Region	91,9	96,1	98,5	96,7	94,6	88,2	90,4	90,6	88,4	89,8	89,3	91,0	91,0	88,5	89,9
South Bohemian	95,8	96,1	92,2	88,2	84,7	82,4	81,4	83,1	82,5	81,1	80,2	79,4	80,5	80,1	81,3
Plzeň Region	96,6	93,2	93,8	96,8	91,8	91,0	91,4	88,8	91,9	92,4	91,4	91,3	91,1	90,2	88,0
Karlovy Vary Region	95,3	86,7	82,1	77,8	72,5	70,1	69,9	68,9	68,9	67,6	65,5	65,2	65,3	63,7	63,4
Ústí nad Labem Region	95,8	88,1	81,1	80,1	77,8	77,0	75,8	76,1	74,7	73,4	74,8	71,9	71,3	69,8	71,7
Liberec Region	92,8	89,9	90,4	80,0	77,4	75,3	75,7	76,1	76,6	77,2	76,7	76,4	76,5	76,1	76,4
Hradec Králové Region	91,9	92,2	91,3	87,2	83,6	83,9	83,6	83,5	84,5	84,4	85,0	86,4	88,6	88,0	89,0
Pardubice Region	88,5	87,9	84,4	81,9	81,9	79,6	82,0	77,3	78,2	79,4	79,0	79,4	80,6	80,2	78,4
Vysočina Region	83,2	80,2	85,2	80,9	82,6	79,0	81,1	82,6	82,6	82,8	80,9	81,1	81,5	79,3	80,6
South Moravian Region	93,2	92,2	90,7	89,9	90,7	93,6	93,9	94,7	97,1	94,2	94,8	93,1	92,7	94,4	93,9
Olomouc Region	83,9	79,1	78,0	76,6	71,6	73,6	75,1	75,4	74,9	75,3	75,7	76,2	77,2	77,1	77,7

Zlín Region	84,2	84,0	81,7	78,7	80,7	82,4	83,3	83,0	83,9	86,4	85,0	84,9	85,2	83,5	84,9
Moravian-Silesian Region	87,1	82,1	77,3	78,4	81,0	81,0	83,5	84,2	81,0	82,7	81,7	81,9	80,9	81,6	79,8

Source: Author's calculation as per the Annual national accounts database, CSO, table REG_HDP_O, as of June 25, 2021.

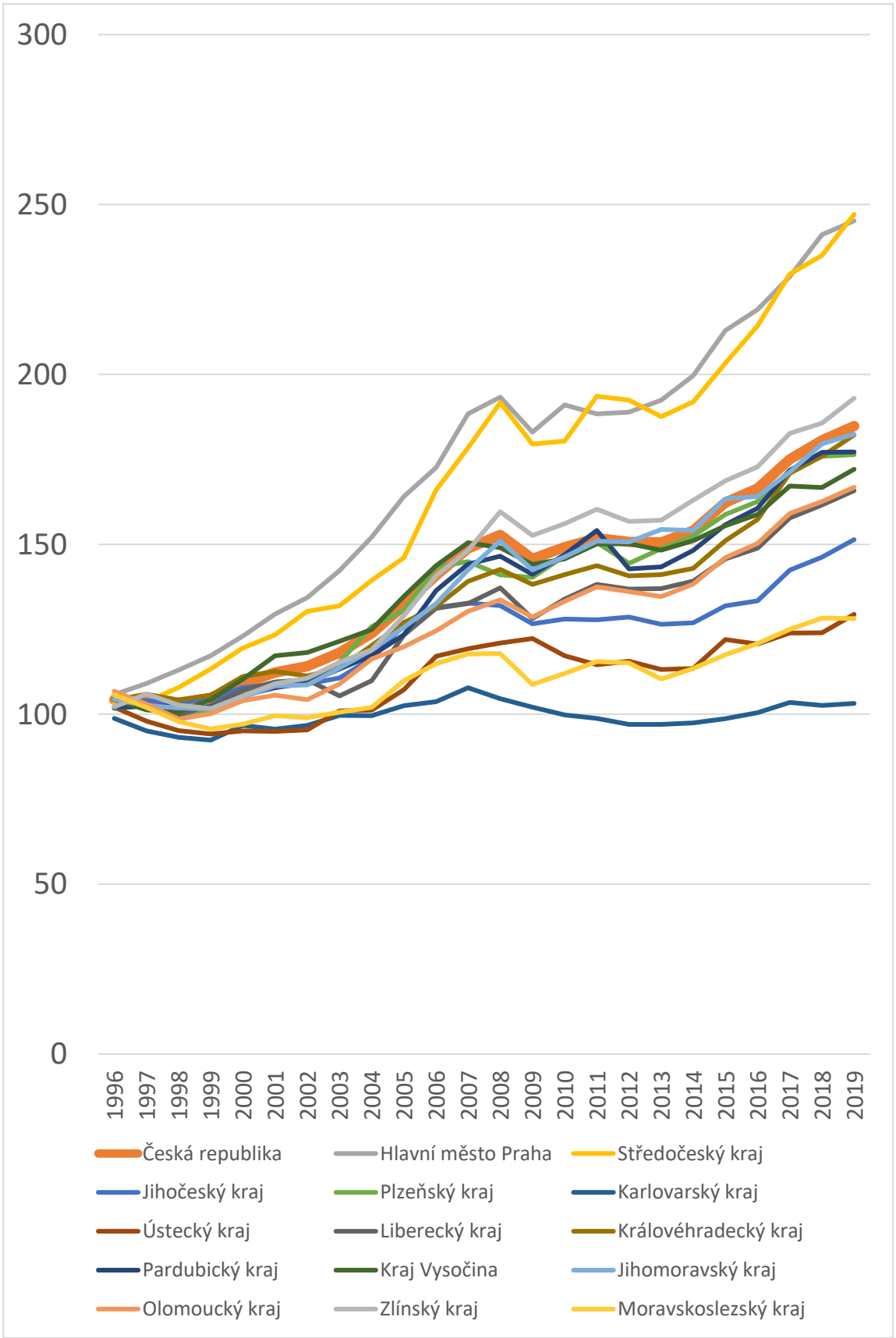
Let us now look at how gross value added per inhabitant developed relatively in relation to the Czech average. Table 1.4 confirms a divergent regional development. Prague's position had been strengthening constantly. While in 1995, the capital's added value per inhabitant surpassed the country's average by 70 %, in 2019 it did so by 120 %. The relative position of the other regions has been proportionately worsening, though this was not the case for all of them. The Central Bohemian Region experienced only a slight decrease (by two percentage points, from 91.5 % of the country's average in 1995 to 89.9 % in 2019). The situation is similar in the Hradec Králové Region. The South Moravian Region remained more or less constant. Conversely, the Karlovy Vary Region saw a marked decline (from 95.3 % average in 1995 to 63.4 % in 2019) and Ústí nad Labem Region (71.7 % in 2019). This means that added value per inhabitant in the Karlovy Vary Region is lower by over one third when compared with the country's average.

Chart 1.8 shows the development of the overall regional GDP in constant prices, compared with the 1995 basis. We can see that development fundamentally differs across individual regions. In 2006, values for Czechia as a whole constituted 141 % of 1995 and in 2019 185 % of 1995. Development of individual regions was rather uneven. From 1995 and 2006. Prague and the Central Bohemian regions had the fastest rate of development, growing by 66–73 % in constant prices. In 2006–2019, this development further accelerated when the Central Bohemian Region achieved 247 % of the 1995 value in real terms, even slightly overtaking Prague with its 245 % of the 1995 value. On the other hand, the Karlovy Vary Region was at 103.2 % of 1995 in 2019.

This means that there has been essentially no economic growth in the Karlovy Vary Region over the past 28 years (in real terms, the GDP grew by 3.2 % over 23 years in total) while Prague and the Central Bohemian Region have seen an average year-on-year growth of 4 % annually (this average includes periods of various economic recessions!) Since the Karlovy Region has long been the country's poorest region, this means that there is essentially no regional convergence occurring in Czechia, on the contrary; regions are diverging relatively strongly (the wealthier regions are growing more quickly). The Karlovy Vary Region is followed by the Moravian-Silesian Region and the Ústí nad Labem Region which achieved 128–129 % of the 1995 value in 2019 (equalling an annual average growth of roughly one percent).

Thus, differences between regions in Czechia are deepening.

Chart 1.8 Regional GDP, constant prices, 1995=100



Source: Annual national accounts database, CSO, table REG_HDP_SC_V, as of June 25, 2021.
Czechia, South Bohemian Region, Ústí nad Labem Region, Pardubice Region, Olomouc Region, Prague, Plzeň Region, Liberec Region, Vysočina Region, Zlín Region, Central Bohemian Region, Karlovy Vary Region, Hradec Králové Region, South Moravian Region, Moravian-Silesian Region

2 Analysis of differences in remuneration by the most important factors

This study compares and analyses differences in earnings, using the most important factors such as personal and other characteristics. Outcomes of the Average Earnings Information System serve as a data source, briefly described in Annexe 1. Earnings are compared successively by age and gender, educational attainment, territorial division, and type of occupation (manual and non-manual workers; more detailed classification as per CZ-ISCO). The comparison focuses on three periods: 2014, the start of a longish period of a rather robust economic growth; 2019, the end of this period; and 2020, a year strongly impacted by the onset of the covid-19 pandemic. Moreover, we always monitor the private and public sector separately as quality and development trends in both these sectors differ rather significantly.

2.1 Differences by age and gender

First, let us focus on differences in wages by age and gender in 2014, 2019 and 2020.

Table 2.1 Average earnings in the private sector in 2014 by gender and age, CZK

	men	women	TOTAL
20 years and younger	17 225	14 823	16 505
20—29 years	23 062	20 727	22 165
30—39 years	31 625	23 895	28 698
40—49 years	32 569	22 607	28 077
50—59 years	29 264	22 004	26 085
60 years and older	29 469	24 324	28 218
TOTAL	**29 693**	**22 545**	**26 804**

Source: ISPV

Table 2.2 Average earnings in the private sector in 2019 by gender and age, CZK

	men	women	TOTAL
20 years and younger	23 444	21 126	22 520
20—29 years	32 444	28 580	30 930

30—39 years	41 030	32 582	37 955
40—49 years	43 248	31 670	38 084
50—59 years	38 628	29 434	34 570
60 years and older	36 898	30 607	34 922
TOTAL	**39 358**	**30 756**	**35 855**

Source: ISPV

Table 2.3 Average earnings in the private sector in 2020 by gender and age, CZK

	men	**women**	**TOTAL**
20 years and younger	24 412	21 976	23 491
20—29 years	33 554	30 030	32 183
30—39 years	42 480	34 498	39 673
40—49 years	45 108	33 837	40 143
50—59 years	40 220	31 301	36 285
60 years and older	38 593	32 243	36 531
TOTAL	**40 994**	**32 651**	**37 627**

Source: ISPV

Employees aged 30–39 and 40–49 receive the highest earnings; the youngest and partially the oldest age groups are paid the lowest. There are relatively stark differences. For instance, the average wage received by an employee aged 40–49 is one quarter higher than that received by employees aged 20–29. Nevertheless, there is a clear difference between men and women. While the wages of men peak while the receivers are in the 40–49 age group, women's peak ten years earlier and the average wage received when they are 40–49 years is already slightly lower when compared to the 30–39 age group. This holds true for all three periods being compared.

Let us now look at the development in individual periods. Absolute values of differences are not directly comparable; comparisons between 2019 and 2020 may be affected by the onset of the pandemic. On the other hand, the aim is not to compare "absolute numbers" but ascertain what the differences between women and men, and individual age groups, are. Data for 2019/2014 is converted to annual average growth, using geometric mean.

Table 2.4 Development of average wages in individual age groups in the private sector (for the 2019/2014 annual average growth)

	2019/2014 men	**2019/2014 women**	**2019/2014 TOTAL**	**2020/2019 men**	**2020/2019 women**	**2020/2019 TOTAL**

20 years and younger	1,064	1,073	**1,064**	1,041	1,040	**1,043**
20—29 years	1,071	1,066	**1,069**	1,034	1,051	**1,041**
30—39 years	1,053	1,064	**1,058**	1,035	1,059	**1,045**
40—49 years	1,058	1,070	**1,063**	1,043	1,068	**1,054**
50—59 years	1,057	1,060	**1,058**	1,041	1,063	**1,050**
60 years and older	1,046	1,047	**1,044**	1,046	1,053	**1,046**
TOTAL	**1,058**	**1,064**	**1,060**	**1,042**	**1,062**	**1,049**

Source: ISPV, author's calculations

Table 2.4 shows that wage development in 2014–2019 did not differ significantly between individual groups. Women were catching up with men only by ca 0.5 % annually. A slight lag in development can be observed in the oldest age groups. Interestingly, when comparing the 2019–2020 period, the onset of covid-19 did not have a significant impact on the amount of earnings. They grew by 4.9 % on average, i.e. by just 1 % more slowly compared to the average annual growth in the previous, economically strong period. In 2020, the gap between the earnings of women and men began to close rather quickly; the growth rate increased by two percentage points. There are no significant differences when age is taken into account.

Table 2.5 Differences in the average wages of men and women in 2014, 2019 and 2020

	F/M 2014	F/M 2019	F/M 2020
20 years and younger	0,861	0,901	0,900
20—29 years	0,899	0,881	0,895
30—39 years	0,756	0,794	0,812
40—49 years	0,694	0,732	0,750
50—59 years	0,752	0,762	0,778
60 years and older	0,825	0,830	0,835
TOTAL	**0,759**	**0,781**	**0,796**

Source: ISPV, author's calculations.

The facts stated above are also evident when the amount of earnings received by men and women is compared. While the difference in earnings was 24.1% in 2014, it decreased to 20.4 % in 2020. The biggest differences can be seen in the 40–49 age group where they amounted

to 30.6 % in 2020; the figure was "only" 20 % in 2020. In the long term, the smallest differences can be witnessed in the youngest age groups; they were only around 10 % in 2020.

Let us now focus on the public sector.

Table 2.6 Average earnings in the public sector in 2014 by gender and age, CZK

	men	women	TOTAL
20 years and younger	11 799	14 162	12 904
20—29 years	22 359	21 921	22 097
30—39 years	29 371	24 178	26 432
40—49 years	32 795	24 959	27 325
50—59 years	30 934	26 179	27 452
60 years and older	30 928	28 330	29 566
TOTAL	**29 948**	**25 130**	**26 794**

Source: ISPV

Table 2.7 Average earnings in the public sector in 2019 by gender and age, CZK

	men	women	TOTAL
20 years and younger	18 883	23 593	21 509
20—29 years	33 472	32 047	32 611
30—39 years	42 469	35 163	38 306
40—49 years	46 133	36 017	39 202
50—59 years	44 254	37 851	39 591
60 years and older	42 370	39 564	40 680
TOTAL	**42 982**	**36 497**	**38 699**

Source: ISPV

Table 2.8 Average earnings in the public sector in 2020 by gender and age, CZK

	men	women	TOTAL
20 years and younger	21 586	27 079	24 793
20—29 years	36 839	36 280	36 506
30—39 years	45 894	38 940	41 946
40—49 years	49 636	40 054	43 097
50—59 years	47 941	41 825	43 495
60 years and older	45 772	43 466	44 356
TOTAL	**46 509**	**40 521**	**42 555**

Source: ISPV

The effect of the age factor in the public sector is different than in the private sector as the average wages received in the public sector grow as employees age; the highest wage is paid to employees aged 60 years and older. In 2014, there were marked structural differences between men and women. While men's wages peak in the 40–49 age group, the group is 60+ years for women, likely on account of automated wage grades. The situation in 2019 and 2020 is similar.

Again, let us look at the development in individual periods.

Table 2.9 Development of average wages in individual age groups in the public sector (for 2019/2014, annual average growth)

	2019/2014 men	2019/2014 women	2019/2014 TOTAL	2020/2019 men	2020/2019 women	2020/2019 TOTAL
20 years and younger	1,099	1,107	**1,108**	1,143	1,148	**1,153**
20—29 years	1,084	1,079	**1,081**	1,101	1,132	**1,119**
30—39 years	1,077	1,078	**1,077**	1,081	1,107	**1,095**
40—49 years	1,071	1,076	**1,075**	1,076	1,112	**1,099**
50—59 years	1,074	1,077	**1,076**	1,083	1,105	**1,099**
60 years and older	1,065	1,069	**1,066**	1,080	1,099	**1,090**
TOTAL	**1,075**	**1,077**	**1,076**	**1,082**	**1,110**	**1,100**

Source: ISPV, author's calculations

It is quite clear that wages in the public sector develop much more quickly than in the private sector. In the 2014–2019 period, wages in the public sector grew by 7.6 % annually on average; in 2020, this growth accelerated and equalled 10.0 %. In the 2014–2019 period, the development did not much differ between men and women (rate difference amounting to the negligible 0.2 %); in terms of age groups, the average annual growth rate lowered with age (the wages received by the young in the public sector grew more quickly). In 2020, women began catching up with men much more quickly; the wages of women in the public sector grew by 3 % more quickly than those of men on average (11.0 % vs. 8.2 %). The fastest growth (over 14 %) was seen in the youngest age group of 20 years and younger with both genders.

Table 2.10 Differences in average wages of men and women in 2014, 2019 and 2020

	F/M 2014	F/M 2019	F/M 2020
20 years and younger	1,200	1,249	1,254
20—29 years	0,980	0,957	0,985

30—39 years	0,823	0,828	0,848
40—49 years	0,761	0,781	0,807
50—59 years	0,846	0,855	0,872
60 years and older	0,916	0,934	0,950
TOTAL	**0,839**	**0,849**	**0,871**

Source: ISPV, author's calculations.

The last table in this part compares the average wages of men and women in the public sector. Once again, the gap is closing here, with the wages of women being lower than those of men by 16.1 % in 2014 and only by 12.9 % in 2020. Regarding age groups, the wages received by the youngest female age group are even bigger (by 20–25 %), with the biggest difference evident in the 40–49 group, the same case as with wages received in the private sector. Over the past few years, the differences became less stark. In the 20–29 and 60+ age groups, they are rather small; in the 20–29 age group, they constituted only 1.5 % in 2020.

2.2 Differences by education

In this part, we analyse the development of average wages by educational attainment. The IPSV system uses a five-degree classification (elementary and early school leavers; secondary without matura; secondary with matura; advanced vocational and bachelor; university), adding a group of people with no education stated. The ISPV terminology understands "university education" as master (be it "long-term", i.e. five- or six-year, or follow-up two-year) or doctoral education (concluded with the granting of a Ph.D. or a similar degree). For the purposes of transparency, the tables in this study have use the term "master and doctoral". As was the case with age and gender, we will use these three years for comparison: 2014, 2019, and 2020. Once again, the public and private sector will be analysed separately.

Table 2.11 Average wages in the private sector by educational attainment in 2014, 2019 and 2020, CZK

	2014	**2019**	**2020**
Elementary and early school leavers	17 881	24 893	26 804
Secondary without matura	20 717	28 507	29 846
Secondary with matura	26 443	35 169	36 705
Advanced vocational and bachelor	31 470	42 316	44 882
Master and doctoral	47 158	58 908	60 841
N/A	24 505	28 535	28 784
TOTAL	**26 804**	**35 855**	**37 627**

Source: ISPV

There are rather stark differences in remuneration when educational attainment is taken into account. In 2020, the average wages of employees with at least a master's degree totalled 60,841 CZK while the wages received by those with secondary education without matura averaged only a half of this figure (29,846 CZK). The group of people with secondary education without matura is relatively numerous as it contains an almost one million of employees (986 thousand). Employees with secondary education with matura (1,017 thousand) constitute the biggest group, albeit by a narrow margin.

Table 2.12 Development of average wages in individual education groups (annual average growth for 2014–2019)

	2019/2014	2020/2019
Elementary and early school leavers	1,068	1,077
Secondary without matura	1,066	1,047
Secondary with matura	1,059	1,044
Advanced vocational and bachelor	1,061	1,061
Master and doctoral	1,045	1,033
N/A	1,031	1,009
TOTAL	**1,060**	**1,049**

Source: ISPV, author's calculations

Table 2.12 compares the development both between two periods, and across education groups. The pandemic year of 2020 saw only a slight decrease in the growth rate of average earnings received in the private sector; compared to the averages of the previous years, the annual growth rate declined only by 1.1 of percentage point. In terms of structure, we can see that the wages of the least educated worker groups grew the fastest, although the differences are not dramatic.

As was the case with the study by Fischer, Doseděl, Vltavská (2019), we too will look into the impact of changes in the educational structure on the overall rate of wage growth in the private sector. The index breakdown apparatus, detailed in the quoted study, is listed in Annexe 3.

Table 2.13 Educational structure of workforce in the private sector in 2014, 2019 and 2020, workers (thous.)

	2014	2019	2020
Elementary and early school leavers	171,3	209,1	212,3
Secondary without matura	1 111,9	1 087,8	985,5
Secondary with matura	1 033,7	1 075,1	1 017,7
Advanced vocational and bachelor	99,2	148,1	147,2
Master and doctoral	411,5	463,8	455,6
N/A	73,3	85,4	83,5

TOTAL	**2 900,8**	**3 069,3**	**2 901,7**

Source: ISPV

Table 2.13 shows the educational structure of those working in the private sector. Excepting the slight increase in the number of people with elementary education, we can see that workers are starting to become better educated which might have a positive effect on the wage development on the average value level.

Using the apparatus described in Annexe 3, we conclude that the hypothesis on the effect of changes in educational structure on the development of average wages was not confirmed. Development in individual education groups contributed 5.75 % to the 6.0 % average annual wage growth in 2014–2019, with changes in educational structure contributing only 0.23 %. The cause likely lies in the growing number and percentage of people with or without elementary education who receive very low wages compared to others. For the sake of comprehensiveness, let us add that these outcomes correspond with the first breakdown option described in the Annexe.

Regarding the 2019–2020 comparison, changes in individual education groups contributed 4.37 % to the overall 4.9 % growth of average wage, while changes in structure contributed 0.55 %. A significant effect of changes in educational structure can be seen in the 2011–2014 period (compare to Fischer, Doseděl, Vltavská, 2019, p. 54) where both effects contributed to the wage growth to the same extent.

Let us now focus on the public sector (Tables 2.14 and 2.16).

Table 2.14 Average wages in the public sector by educational attainment in 2014, 2019 and 2020, CZK

	2014	**2019**	**2020**
Elementary and early school leavers	14 354	22 053	25 927
Secondary without matura	17 222	25 487	29 021
Secondary with matura	25 560	36 341	39 854
Advanced vocational and bachelor	28 327	40 613	44 987
Master and doctoral	34 617	48 870	52 872
N/A	25 632	34 937	39 308
TOTAL	**26 794**	**38 699**	**42 555**

Source: ISPV, author's calculations

In the public sector, the average wages received by people with a master's or doctoral degree were 82 % higher in 2020 than those earned by employees with secondary education without matura. Compared to workers with secondary education and matura, the wage premium equalled only 33 %. Let us notice that in the private sector (Table 2.11) this premium for having attained a master's education equalled 66 %, i.e. a double of what was the case in the public sector.

Table 2.15 Development of average wages in individual education groups (annual average growth for 2014–2019)

	2019/2014	2020/2019
Elementary and early school leavers	1,090	1,176
Secondary without matura	1,082	1,139
Secondary with matura	1,073	1,097
Advanced vocational and bachelor	1,075	1,108
Master and doctoral	1,071	1,082
N/A	1,064	1,125
TOTAL	**1,076**	**1,100**

Source: ISPV, author's calculations

In the public sector, average wages saw the fastest average annual growth in the least educated groups, both in the 2014–2019 and 2019–2020 period. The likely cause lies in the ongoing growth of the minimum and subsequently guaranteed wage which are the most affected by the wages received by the worst paid workers in both the private and public sector.

Regarding the educational structure (Table 2.16), we cannot miss the ca 5 % growth in the number of workers in the public sectors from 2014 to 2019. The number and percentage of workers with a master's or doctoral degree grew slightly as well.

Table 2.16 Educational structure of workforce in the public sector in 2014, 2019 and 2020, workers (thous.)

	2014	2019	2020
Elementary and early school leavers	22,8	18,6	18,7
Secondary without matura	90,6	91,7	91,8
Secondary with matura	240,6	245,0	242,9
Advanced vocational and bachelor	59,8	73,9	75,1

Master and doctoral	176,7	199,4	202,0
N/A	21,6	18,6	17,1
TOTAL	**612,1**	**647,2**	**647,7**

Source: ISPV

Index breakdown leads us to conclude that growth in individual education groups in 2014–2019 contributed 7.3 % to the average 7.63 % annual growth of average wages, with changes in educational structure contributing 0.27 %. In 2019–2020, changes in educational structure were negligible, contributing mere 0.13 % to the 10 % growth in average wage growth.

2.3 Differences by place of work

In this section we will also focus on 2014, 2019, and 2020, looking first at the private, and then at the public sector.

Table 2.17 Average wages in the private sector by region in 2014, 2019 and 2020, CZK

	2014	2019	2020
Prague	35 415	35 651	42 478
Central Bohemian	25 943	27 186	34 605
South Bohemian	22 873	24 189	30 124
Plzeň	23 691	25 741	32 479
Karlovy Vary	21 055	22 241	28 341
Ústí nad Labem	23 003	23 999	30 417
Liberec	23 170	24 638	31 352
Hradec Králové	22 252	23 903	30 785
Pardubice	22 758	23 757	30 008
Vysočina	22 369	23 900	30 425
South Moravian	24 429	25 868	32 150
Olomouc	22 192	23 497	29 080
Zlín	22 367	23 485	30 036
Moravian-Silesian	23 746	24 257	29 622
TOTAL	**25 693**	**26 804**	**33 321**

Source: ISPV

Not surprisingly, the highest wages were received in Prague. Statistically speaking, this is due to the fact of Prague being a so-called urban region with a significant amount of commute not only from the Central Bohemian Region, but also from Plzeň and Liberec. In 2020, average wages in Prague equalled 42,478 CZK, exceeding the country-wide average by ca 27.5 %

(Table 2.17). Conversely, the Karlovy Vary Region was at the bottom with wages of 28,341 CZK, i.e. 15 % below the country-wide average.

In terms of time, comparisons show us that wages in Prague grow a little bit more slowly when measured against the national average; by ca one percentage point annually (Table 2.18). This is in line with the outcomes of the 2011–2014 period (Fischer, Doseděl, Vltavská, 2019), meaning the wage levels in Prague and other Czech regions are slowly converging.

Table 2.18 Development of average wages in the private sector in individual regions from 2014 to 2020 (annual average growth for 2014–2019)

	2019/2014	2020/2019
Prague	1,052	1,039
Central Bohemian	1,064	1,035
South Bohemian	1,058	1,061
Plzeň	1,060	1,048
Karlovy Vary	1,066	1,046
Ústí nad Labem	1,063	1,069
Liberec	1,066	1,044
Hradec Králové	1,071	1,053
Pardubice	1,062	1,057
Vysočina	1,065	1,049
South Moravian	1,061	1,050
Olomouc	1,061	1,054
Zlín	1,065	1,047
Moravian-Silesian	1,056	1,057
TOTAL	**1,060**	**1,049**

Source: ISPV, author's calculations

We can take a look at the development of the regional employment structure (Table 2.19). Between 2014 and 2019, there was a slight increase in employment both in Prague and the Central Bohemian Region (by more than 10 %), and not in exchange for any marked decrease in other regions. Thus, the hypothesis that employees move to regions characterised by higher wages was not confirmed.

This is in line with our index analysis (methodology described in Annexe 3) where changes in educational structure contributed 0.13 % annually to the growth of the average wage in 2014–2019 and 0.2 % in 2020.

Table 2.19 Employment by region in 2014, 2019 and 2020, private sector, thous. of people

	2014	2019	2020
Prague	553,6	585,4	567,1

Central Bohemian	299,0	339,0	322,2
South Bohemian	160,4	169,2	163,5
Plzeň	154,7	165,7	155,0
Karlovy Vary	68,3	65,6	60,0
Ústí nad Labem	182,2	190,8	180,3
Liberec	106,5	115,4	103,8
Hradec Králové	142,5	157,0	146,6
Pardubice	137,1	143,8	139,3
Vysočina	132,3	134,9	125,0
South Moravian	327,3	352,3	330,6
Olomouc	161,0	166,2	156,0
Zlín	155,5	167,2	159,1
Moravian-Silesian	318,8	318,9	295,2
TOTAL	**2 900,8**	**3 069,3**	**2 901,7**

Source: ISPV

Let us now take a look at the public sector. Once again, the highest wages are received in Prague (49,111 CZK) but unlike the private sector there is no region lagging significantly behind in terms of remuneration (Table 2.20). In the public sector, differences between regions are smaller than in the private sector.

Table 2.20 Average wages in the public sector by region in 2014, 2019 and 2020, CZK

	2014	**2019**	**2020**
Prague	31 913	45 840	49 111
Central Bohemian	25 091	36 377	39 881
South Bohemian	25 018	36 145	39 806
Plzeň	27 389	39 290	43 622
Karlovy Vary	25 487	36 474	39 930
Ústí nad Labem	24 542	35 517	39 228
Liberec	24 827	36 311	39 801
Hradec Králové	25 962	37 613	41 620
Pardubice	24 425	35 388	38 925
Vysočina	25 238	36 849	41 487
South Moravian	26 187	38 188	42 460
Olomouc	25 748	37 516	41 744
Zlín	24 338	35 201	39 202
Moravian-Silesian	25 940	37 244	41 537
TOTAL	**26 789**	**38 699**	**42 555**

Source: ISPV

Table 2.21 Development of average wages in the public sector in individual regions from 2014 and 2020 (annual average growth for 2014-2019)

	2019/2014	2020/2019
Prague	1,075	1,071
Central Bohemian	1,077	1,096
South Bohemian	1,076	1,101
Plzeň	1,075	1,110
Karlovy Vary	1,074	1,095
Ústí nad Labem	1,077	1,104
Liberec	1,079	1,096
Hradec Králové	1,077	1,107
Pardubice	1,077	1,100
Vysočina	1,079	1,126
South Moravian	1,078	1,112
Olomouc	1,078	1,113
Zlín	1,077	1,114
Moravian-Silesian	1,075	1,115
TOTAL	**1,076**	**1,100**

Source: ISPV, author's calculations

In the 2014–2019 period, development of average wages in the public sector (Table 2.21) was essentially the same across regions, with very small regional differences (7.4–7.9 %). In 2020, wages grew the least in Prague (7.1 %) and the most in the Vysočina Region (12.6 %).

Table 2.22 Employment by region in 2014, 2019 and 2020, public sector, thous. people

	2014	2019	2020
Prague	122,5	127,3	127,5
Central Bohemian	51,0	56,3	56,9
South Bohemian	33,3	35,6	35,6
Plzeň	32,1	33,7	33,8
Karlovy Vary	14,5	15,1	15,1
Ústí nad Labem	44,6	46,4	46,0
Liberec	21,3	21,9	22,0
Hradec Králové	31,7	33,6	33,7
Pardubice	25,8	27,8	28,0
Vysočina	29,4	31,2	30,9
South Moravian	73,7	78,1	78,6
Olomouc	37,3	40,6	40,8
Zlín	27,5	28,6	28,5
Moravian-Silesian	67,5	71,2	70,5
TOTAL	**612,2**	**647,2**	**647,2**

Source: ISPV

The employment structure (Table 2.22) was stable in the stated period, resulting in essentially no effect of structural changes on the amount of the average wage (the structure index equals almost zero). Differences between regions did not decrease much over time.

2.4 Differences by occupation type

In this section, we will take a look at differences between average wages by occupation, as per the CZ-ISCO classification, and at their development both in the strong economic growth period of 2014–2019, and in the early part of the pandemic year of 2020. Not surprisingly, the highest average wages were received by managers (87,242 CZK in 2020); the lowest by elementary occupations (22,440 CZK in 2020).

Table 2.23 Average wages by occupation, private sector, CZK

		2014	2019	2020
1	Managers	62 146	83 051	87 242
11	Chief Executives, Senior Officials and Legislators	93 883	135 643	138 595
12	Administrative and Commercial Managers	76 691	95 051	99 047
13	Production and Specialized Services Managers	58 379	79 992	84 901
14	Hospitality, Retail, and Other Service Managers	33 950	52 619	53 876
2	Professionals	43 291	56 845	59 483
21	Science and Engineering Professionals	41 172	54 455	56 192
22	Health Professionals	35 663	47 328	52 404
23	Teaching Professionals	38 291	49 157	49 966
24	Business and Administration Professionals	48 684	63 942	65 888
25	Information and Communications Technology Professionals	50 558	66 753	71 258
26	Legal, Social, and Cultural Professionals	33 443	42 536	43 727
3	Technicians and Associate Professionals	29 771	39 543	40 835
31	Science and Engineering Associate Professionals	31 150	41 313	41 940
32	Health Associate Professionals	21 818	31 179	34 873
33	Business and Administration Associate Professionals	30 159	39 619	40 666
34	Legal, Social, Cultural and Related Associate Professionals	21 653	30 460	31 237
35	Information and Communications Technicians	36 480	46 038	48 906
4	Clerks	22 372	29 286	30 626
41	General and Keyboard Clerks	20 915	26 787	27 903
42	Customer Services Clerks	21 825	28 553	29 493
43	Numerical and Material Recording Clerks	24 064	32 030	33 675
44	Other Clerical Support Workers	21 430	27 885	29 679
5	Services and Sales Workers	15 933	23 765	25 303

51	Personal Services Workers	14 884	22 618	23 343
52	Sales Workers	16 813	25 058	26 174
53	Personal Care Workers	16 643	24 847	28 905
54	Protective Services Workers	14 192	20 481	22 707
6	Skilled Agricultural, Forestry, and Fishing Workers	19 330	25 691	27 016
61	Market-oriented Skilled Agricultural Workers	19 387	25 747	27 056
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	18 859	25 180	26 595
7	Craft and Related Trades Workers	22 787	31 228	32 123
71	Building and Related Trades Workers (excluding Electricians)	20 022	27 487	28 519
72	Metal, Machinery and Related Trades Workers	24 211	33 438	34 126
73	Handicraft and Printing Workers	21 115	28 769	29 337
74	Electrical and Electronic Trades Workers	25 893	34 432	35 728
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	18 634	25 849	26 791
8	Plant and Machine Operators and Assemblers	21 846	29 757	30 979
81	Stationary Plant and Machine Operators	23 046	30 823	31 980
82	Assemblers	21 010	28 881	30 207
83	Drivers and Mobile Plant Operators	21 383	29 521	30 758
9	Elementary occupations	15 759	21 122	22 440
91	Cleaners and Helpers	12 679	17 363	18 878
92	Agricultural, Forestry and Fishery Labourers	15 978	21 714	22 699
93	Labourers in Mining, Construction, Manufacturing and Transport	17 387	23 108	24 509
94	Food Preparation Assistants	12 456	17 669	18 961
96	Refuse Workers and Other Elementary Workers	15 605	21 820	22 787
	TOTAL—Czech private sector	**26 804**	**35 855**	**37 627**

Source: ISPV.

Let us now look at development, converted to the average year-on-year change for the 2014–2019 period.

Table 2.24 Development of average wages, 2014–2020, private sector (annual average growth for 2014–2019)

		2019/2014	2020/2019
1	Managers	1,060	1,050
11	Chief Executives, Senior Officials and Legislators	1,076	1,022
12	Administrative and Commercial Managers	1,044	1,042
13	Production and Specialized Services Managers	1,065	1,061
14	Hospitality, Retail, and Other Service Managers	1,092	1,024
2	Professionals	1,056	1,046
21	Science and Engineering Professionals	1,058	1,032
22	Health Professionals	1,058	1,107
23	Teaching Professionals	1,051	1,016
24	Business and Administration Professionals	1,056	1,030

25	Information and Communications Technology Professionals	1,057	1,067
26	Legal, Social, and Cultural Professionals	1,049	1,028
3	Technicians and Associate Professionals	1,058	1,033
31	Science and Engineering Associate Professionals	1,058	1,015
32	Health Associate Professionals	1,074	1,118
33	Business and Administration Associate Professionals	1,056	1,026
34	Legal, Social, Cultural and Related Associate Professionals	1,071	1,025
35	Information and Communications Technicians	1,048	1,062
4	Clerks	1,055	1,046
41	General and Keyboard Clerks	1,051	1,042
42	Customer Services Clerks	1,055	1,033
43	Numerical and Material Recording Clerks	1,059	1,051
44	Other Clerical Support Workers	1,054	1,064
5	Services and Sales Workers	1,083	1,065
51	Personal Services Workers	1,087	1,032
52	Sales Workers	1,083	1,045
53	Personal Care Workers	1,083	1,163
54	Protective Services Workers	1,076	1,109
6	Skilled Agricultural, Forestry, and Fishing Workers	1,059	1,052
61	Market-oriented Skilled Agricultural Workers	1,058	1,051
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	1,060	1,056
7	Craft and Related Trades Workers	1,065	1,029
71	Building and Related Trades Workers (excluding Electricians)	1,065	1,038
72	Metal, Machinery and Related Trades Workers	1,067	1,021
73	Handicraft and Printing Workers	1,064	1,020
74	Electrical and Electronic Trades Workers	1,059	1,038
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	1,068	1,036
8	Plant and Machine Operators and Assemblers	1,064	1,041
81	Stationary Plant and Machine Operators	1,060	1,038
82	Assemblers	1,066	1,046
83	Drivers and Mobile Plant Operators	1,067	1,042
9	Elementary occupations	1,060	1,062
91	Cleaners and Helpers	1,065	1,087
92	Agricultural, Forestry and Fishery Labourers	1,063	1,045
93	Labourers in Mining, Construction, Manufacturing and Transport	1,059	1,061
94	Food Preparation Assistants	1,072	1,073
96	Refuse Workers and Other Elementary Workers	1,069	1,044
	TOTAL—Czech private sector	**1,060**	**1,049**

Source: ISPV, author's calculations

As stated above, average wages in the 2014–2019 period grew by 6 % annually on average; the year-on-year growth in 2020 equalled 4.9 %. Looking at development in occupation groups as per the gross CZ-ISCO classification, we can see that growth was essentially equal across groups. In both periods, it was slightly higher among sales and service workers (8.3 % in the 2014–2019 period; 6.5 % in 2020). Regarding individual jobs, we can highlight health professionals (+10.7 % in 2020) and health associate professionals (+7.4 % on average over the 2014–2019 period; +11.8 % in 2020).

Let us now take a look at the structure of workers by job (Table 2.25). Most workers fell under the technicians and associate professionals group (614,6 thous. of people). Over the 2014–2019 period, there had been no significant change which would have a marked effect on the average wage. In 2020, we can see a slight decrease of workers in fields affected by the pandemic (services and sales workers), and partially also in categories 8 and 9 of the elementary occupations. Structurally, this contributed to a minimum wage rise. Overall, average wage saw a year-on-year growth of 4.9 % in 2020, to which the growth of average wage in individual categories contributed 4.2 % and changes in the worker structure 0.7 %.

Table 2.25 Workforce structure by job, private sector

		2014	2019	2020
1	Managers	127,6	119,3	111,8
11	Chief Executives, Senior Officials and Legislators	10,0	6,3	5,9
12	Administrative and Commercial Managers	36,7	36,3	34,2
13	Production and Specialized Services Managers	58,6	57,7	54,3
14	Hospitality, Retail, and Other Service Managers	22,3	18,5	17,2
2	Professionals	298,1	358,4	356,1
21	Science and Engineering Professionals	86,3	97,4	98,1
22	Health Professionals	29,2	42,8	41,5
23	Teaching Professionals	28,9	33,7	33,8
24	Business and Administration Professionals	81,9	90,2	88,7
25	Information and Communications Technology Professionals	47,6	66,4	67,3
26	Legal, Social, and Cultural Professionals	24,2	27,8	26,7
3	Technicians and Associate Professionals	573,5	634,6	614,6
31	Science and Engineering Associate Professionals	198,9	228,6	218,5
32	Health Associate Professionals	62,6	62,6	61,9
33	Business and Administration Associate Professionals	269,2	290,6	280,1
34	Legal, Social, Cultural and Related Associate Professionals	11,4	15,8	14,8
35	Information and Communications Technicians	31,5	37,0	39,3
4	Clerks	253,9	276,4	262,2
41	General and Keyboard Clerks	86,7	92,1	89,4

42	Customer Services Clerks	48,0	55,5	49,9
43	Numerical and Material Recording Clerks	100,5	108,9	104,2
44	Other Clerical Support Workers	18,7	19,9	18,7
5	Services and Sales Workers	350,3	377,4	336,3
51	Personal Services Workers	92,4	104,0	85,9
52	Sales Workers	190,8	196,3	183,2
53	Personal Care Workers	18,8	28,8	29,6
54	Protective Services Workers	48,4	46,7	37,6
6	Skilled Agricultural, Forestry, and Fishing Workers	29,9	28,2	27,7
61	Market-oriented Skilled Agricultural Workers	26,6	25,6	25,3
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	3,3	2,2	2,4
7	Craft and Related Trades Workers	479,9	462,2	434,4
71	Building and Related Trades Workers (excluding Electricians)	79,3	78,2	77,5
72	Metal, Machinery and Related Trades Workers	251,4	235,8	220,4
73	Handicraft and Printing Workers	17,6	18,2	17,0
74	Electrical and Electronic Trades Workers	60,3	60,1	58,5
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	71,4	70,0	61,1
8	Plant and Machine Operators and Assemblers	524,7	611,9	572,2
81	Stationary Plant and Machine Operators	173,0	183,1	166,3
82	Assemblers	119,7	147,2	139,9
83	Drivers and Mobile Plant Operators	231,9	281,6	266,0
9	Elementary occupations	168,4	200,9	186,4
91	Cleaners and Helpers	45,1	56,9	55,6
92	Agricultural, Forestry and Fishery Labourers	6,0	6,9	7,0
93	Labourers in Mining, Construction, Manufacturing and Transport	97,9	112,6	101,7
94	Food Preparation Assistants	5,9	7,1	5,7
96	Refuse Workers and Other Elementary Workers	13,5	17,2	16,3
	TOTAL - Czech private sector	**2900,8**	**3069,3**	**2901,7**

Source: ISPV.

Let us now look at the public sector (Table 2.26). Here too were the highest average wages received by managers (67,792 CZK in 2020) and the lowest by those working in elementary occupations (22,132 CZK in 2020). In the public sector, average wages equalled 42,555 CZK in 2020, highly exceeding those received in the private sector. We will come back to this phenomenon in the next section.

Table 2.26 Average earnings by occupation, public sector, CZK

		2014	2019	2020
0	Armed Forces Occupations	26 257	41 329	42 301
01	Commissioned Armed Forces Officers	35 997	56 648	58 626
02	Non-commissioned Armed Forces Officers	19 778	31 941	33 663
03	Armed Forces Occupations, Other Ranks	24 890	39 160	39 442
1	Managers	44 714	61 975	67 792
11	Clerks, Chief Executives, Senior Officials and Legislators	50 810	73 880	78 139
12	Administrative and Commercial Managers	47 354	62 931	67 393
13	Production and Specialized Services Managers	43 233	60 564	67 110
14	Hospitality, Retail, and Other Service Managers	35 728	47 065	50 581
2	Professionals	30 203	43 551	47 702
21	Science and Engineering Professionals	31 702	42 647	45 495
22	Health Professionals	43 490	63 711	73 358
23	Teaching Professionals	26 772	39 370	43 207
24	Business and Administration Professionals	33 694	45 836	48 188
25	Information and Communications Technology Professionals	32 006	44 555	47 347
26	Legal, Social, and Cultural Professionals	27 485	39 383	41 982
3	Technicians and Associate Professionals	27 966	40 149	44 307
31	Science and Engineering Associate Professionals	25 232	34 768	37 474
32	Health Associate Professionals	28 582	44 165	52 873
33	Business and Administration Associate Professionals	28 637	40 389	43 599
34	Legal, Social, Cultural and Related Associate Professionals	22 929	33 639	37 042
35	Information and Communications Technicians	26 293	36 849	39 692
4	Clerks	24 182	33 090	35 613
41	General and Keyboard Clerks	22 879	31 924	34 528
42	Customer Services Clerks	20 514	28 347	30 803
43	Numerical and Material Recording Clerks	23 996	33 622	36 708
44	Other Clerical Support Workers	25 876	34 420	36 710
5	Services and Sales Workers	20 526	30 430	34 497
51	Personal Services Workers	16 287	23 896	26 980
52	Sales Workers	18 974	26 430	28 766
53	Personal Care Workers	18 764	29 437	34 782
54	Protective Services Workers	28 674	41 620	44 847
6	Skilled Agricultural, Forestry, and Fishing Workers	18 028	26 030	28 529
61	Market-oriented Skilled Agricultural Workers	17 733	25 475	27 877
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	19 578	28 664	31 588
7	Craft and Related Trades Workers	20 213	28 080	30 687
71	Building and Related Trades Workers (excluding Electricians)	19 804	27 609	29 705
72	Metal, Machinery and Related Trades Workers	20 466	28 065	30 716

73	Handicraft and Printing Workers	20 814	29 365	32 002
74	Electrical and Electronic Trades Workers	22 197	30 976	33 936
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	17 838	25 516	28 644
8	Plant and Machine Operators and Assemblers	21 463	29 851	33 190
81	Stationary Plant and Machine Operators	17 272	24 721	28 449
83	Drivers and Mobile Plant Operators	22 629	31 149	34 383
9	Elementary occupations	12 900	19 346	22 132
91	Cleaners and Helpers	12 836	18 756	21 760
92	Agricultural, Forestry and Fishery Labourers	14 993	21 784	24 225
93	Labourers in Mining, Construction, Manufacturing and Transport	15 707	22 965	26 072
94	Food Preparation Assistants	13 508	20 415	23 291
96	Refuse Workers and Other Elementary Workers	12 596	20 009	22 289
	TOTAL—Czech public sector	**26 794**	**38 699**	**42 555**

Source: ISPV.

Let us now look at wage development in the public sector in the 2014–2020 period (Table 2.27); for the 2014–2019 period, values are once again expressed as an average annual growth rate, using geometric mean. Overall, wages in the public sector in the 2014–2019 period saw an average annual growth of 7.6 %; the year-on-year growth in 2020 was 10 %. In armed forces, we can see an above-average growth over the 2014–2019 period and a below-average growth in 2020. Earnings of managers experienced a slightly below-average growth while changes among professionals conformed to the average. Earnings of clerks saw a below-average growth, those of services and sales workers an above-average one (+ 13.4 % in 2020). The growth of earnings received by less-skilled workers was above-average as well; in 2020, wages of those working in elementary occupations grew by 14.4 % year-on-year.

Table 2.27 Development of average earnings, 2014–2020, public sector (annual average growth for 2014–2019)

		2019/2014	2020/2019
0	Armed Forces Occupations	1,095	1,024
01	Commissioned Armed Forces Officers	1,095	1,035
02	Non-commissioned Armed Forces Officers	1,101	1,054
03	Armed Forces Occupations, Other Ranks	1,095	1,007
1	Managers	1,067	1,094
11	Clerks, Chief Executives, Senior Officials and Legislators	1,078	1,058
12	Administrative and Commercial Managers	1,059	1,071
13	Production and Specialized Services Managers	1,070	1,108
14	Hospitality, Retail, and Other Service Managers	1,057	1,075
2	Professionals	1,076	1,095
21	Science and Engineering Professionals	1,061	1,067

22	Health Professionals	1,079	1,151
23	Teaching Professionals	1,080	1,097
24	Business and Administration Professionals	1,063	1,051
25	Information and Communications Technology Professionals	1,068	1,063
26	Legal, Social, and Cultural Professionals	1,075	1,066
3	Technicians and Associate Professionals	1,075	1,104
31	Science and Engineering Associate Professionals	1,066	1,078
32	Health Associate Professionals	1,091	1,197
33	Business and Administration Associate Professionals	1,071	1,079
34	Legal, Social, Cultural and Related Associate Professionals	1,080	1,101
35	Information and Communications Technicians	1,070	1,077
4	Clerks	1,065	1,076
41	General and Keyboard Clerks	1,069	1,082
42	Customer Services Clerks	1,067	1,087
43	Numerical and Material Recording Clerks	1,070	1,092
44	Other Clerical Support Workers	1,059	1,067
5	Services and Sales Workers	1,082	1,134
51	Personal Services Workers	1,080	1,129
52	Sales Workers	1,069	1,088
53	Personal Care Workers	1,094	1,182
54	Protective Services Workers	1,077	1,078
6	Skilled Agricultural, Forestry, and Fishing Workers	1,076	1,096
61	Market-oriented Skilled Agricultural Workers	1,075	1,094
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	1,079	1,102
7	Craft and Related Trades Workers	1,068	1,093
71	Building and Related Trades Workers (excluding Electricians)	1,069	1,076
72	Metal, Machinery and Related Trades Workers	1,065	1,094
73	Handicraft and Printing Workers	1,071	1,090
74	Electrical and Electronic Trades Workers	1,069	1,096
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	1,074	1,123
8	Plant and Machine Operators and Assemblers	1,068	1,112
81	Stationary Plant and Machine Operators	1,074	1,151
83	Drivers and Mobile Plant Operators	1,066	1,104
9	Elementary occupations	1,084	1,144
91	Cleaners and Helpers	1,079	1,160
92	Agricultural, Forestry and Fishery Labourers	1,078	1,112
93	Labourers in Mining, Construction, Manufacturing and Transport	1,079	1,135
94	Food Preparation Assistants	1,086	1,141
96	Refuse Workers and Other Elementary Workers	1,097	1,114
	TOTAL—Czech public sector	**1,076**	**1,100**

Source: ISPV, author's calculations.

Table 2.28 Workforce structure by job, public sector

		2014	2019	2020
0	Armed Forces Occupations	20,0	24,4	25,1
01	Commissioned Armed Forces Officers	5,7	6,5	6,3
02	Non-commissioned Armed Forces Officers	7,0	8,4	8,6
03	Armed Forces Occupations, Other Ranks	7,3	9,5	10,1
1	Managers	29,4	30,2	29,8
11	Clerks, Chief Executives, Senior Officials and Legislators	4,0	3,4	3,4
12	Administrative and Commercial Managers	5,0	5,5	5,4
13	Production and Specialized Services Managers	19,3	20,1	19,8
14	Hospitality, Retail, and Other Service Managers	1,0	1,1	1,1
2	Professionals	195,0	207,9	210,5
21	Science and Engineering Professionals	8,8	9,9	10,0
22	Health Professionals	27,0	27,6	27,1
23	Teaching Professionals	118,2	127,3	130,6
24	Business and Administration Professionals	20,8	22,4	22,2
25	Information and Communications Technology Professionals	3,6	3,7	3,7
26	Legal, Social, and Cultural Professionals	16,7	16,9	16,8
3	Technicians and Associate Professionals	177,2	181,2	177,5
31	Science and Engineering Associate Professionals	11,9	11,9	11,7
32	Health Associate Professionals	33,1	32,2	31,6
33	Business and Administration Associate Professionals	117,0	120,9	118,3
34	Legal, Social, Cultural and Related Associate Professionals	12,2	12,8	12,6
35	Information and Communications Technicians	3,0	3,4	3,4
4	Clerks	33,6	38,4	38,4
41	General and Keyboard Clerks	12,5	14,1	14,3
42	Customer Services Clerks	1,9	1,9	1,9
43	Numerical and Material Recording Clerks	5,0	5,4	5,5
44	Other Clerical Support Workers	14,2	16,9	16,8
5	Services and Sales Workers	94,4	106,1	107,6
51	Personal Services Workers	35,8	36,4	36,3
52	Sales Workers	1,3	1,4	1,4
53	Personal Care Workers	31,5	42,8	43,9
54	Protective Services Workers	25,7	25,6	25,9
6	Skilled Agricultural, Forestry, and Fishing Workers	1,5	1,6	1,6
61	Market-oriented Skilled Agricultural Workers	1,3	1,3	1,3
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	0,2	0,3	0,3
7	Craft and Related Trades Workers	7,5	7,6	7,6
71	Building and Related Trades Workers (excluding Electricians)	2,2	2,2	2,2

72	Metal, Machinery and Related Trades Workers	2,6	2,8	2,8
73	Handicraft and Printing Workers	0,3	0,3	0,3
74	Electrical and Electronic Trades Workers	1,3	1,2	1,2
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	1,1	1,1	1,0
8	Plant and Machine Operators and Assemblers	11,4	11,0	11,0
81	Stationary Plant and Machine Operators	2,5	2,2	2,2
83	Drivers and Mobile Plant Operators	8,9	8,8	8,7
9	Elementary occupations	42,1	38,6	38,7
91	Cleaners and Helpers	24,6	24,5	24,8
92	Agricultural, Forestry and Fishery Labourers	0,3	0,3	0,3
93	Labourers in Mining, Construction, Manufacturing and Transport	1,6	1,4	1,4
94	Food Preparation Assistants	0,9	1,2	1,3
96	Refuse Workers and Other Elementary Workers	14,6	11,2	10,9
	TOTAL—Czech public sector	**612,1**	**647,2**	**647,7**

Source: ISPV.

Workforce structure (Table 2.28) did not change significantly; the effect of changes in workforce structure on changes in average earnings was quite negligible.

In this sub-chapter, we will also take a look at more aggregated data, paying attention to differences by occupation type and using a manual vs. non-manual workers classification. Once again, outcomes of Fischer, Doseděl, and Vltavská (2019), calculated for 2011, 2014, and 2018, served as an inspiration. We will now attempt a similar calculation, once more using the method of breaking down the variable composition index for the 2014, 2019, and 2020 data sets.

Let us start with the private sector and an overview of average wages by occupation type, using a manual vs. non-manual workers classification (Table 2.29).

Table 2.29 Average wages by occupation type in the private sector in 2014, 2019 and 2020, CZK

	2014	2019	2020
Manual workers	20 170	27 680	28 942
Non-manual workers	33 903	45 006	46 963
TOTAL	**26 654**	**35 854**	**37 628**

Source: ISPV

In 2020, non-manual workers received a minimum wage of 46, 963 CZK, while manual workers earned only 28,942 CZK (i.e. by 38.4 % less). Looking at development over time (Table 2.30), we see the differences lessen very slightly. Between 2014 and 2019, average wages of manual workers saw an average annual growth of 6.5 % while the wages of non-manual workers grew only by 5.8 %. In 2020, the difference is only 0.3 % in favour of manual workers.

Table 2.30 Development of wages received by manual and non-manual workers in 2014-2020 (annual average growth for 2014-2019)

	2019/2014	2020/2019
Manual workers	1,065	1,046
Non-manual workers	1,058	1,043
TOTAL	**1,061**	**1,049**

Source: ISPV, author's calculations

Let us now take a look at workforce structure in the private sector (Table 2.31). Manual workers had a slight lead in all three monitored years. The workforce structure essentially did not change over time.

Table 2.31 Structure of workforce by job, 2014–2020, private sector

	2014	2019	2020
Manual workers	1 481,3	1 621,2	1 503,1
Non-manual workers	1 324,9	1 448,1	1 398,6
TOTAL	**2 806,2**	**3 069,3**	**2 901,7**

Source: ISPV.

Let us now take a look at the public sector. The average wages received by non-manual workers in the public sector in 2020 equalled 45,766 CZK (Table 2.32) while the average wage of manual workers was only 29,684 CZK, i.e. by 35.1 % less. This means that differences between manual and non-manual workers were less stark in the public than in the private sector. This trend eventually changed, mostly due to the rapid growth of wages received by manual workers from 2019 and 2020.

Table 2.32 Average wages by job in the public sector in 2014, 2019 and 2020, CZK

	2014	2019	2020
Manual workers	17 165	25 913	29 684
Non-manual workers	29 295	41 895	45 766
TOTAL	**26 788**	**38 699**	**42 556**

Source: ISPV

Looking at development (Table 2.23), we see that the wages received by manual workers in the public sector grew faster in both periods than those of non-manual workers. In the 2014–2019 period, the difference was 1 % annually; in 2020, wages of manual workers grew by 5 % faster.

Table 2.33 Development of average wages received by manual and non-manual workers in the public sector in 2014-2020 (annual average growth for 2014-2019)

	2019/2014	2020/2019
Manual workers	1,086	1,146
Non-manual workers	1,074	1,092
TOTAL	**1,076**	**1,100**

Source: ISPV, author's calculations

In the 2014–2019, the number of non-manual workers increased. The structure of workforce between 2019 and 2020 was stable (Table 2.34).

Table 2.34 Structure of workforce by job, 2014–2020, public sector

	2014	2019	2020
Manual workers	126,6	129,4	129,3
Non-manual workers	485,9	517,7	518,4
TOTAL	126,6	129,4	129,3

Source: ISPV.

Breaking down the variable composition index, we will now attempt to explain the differences in remuneration between the private and public sector.

First, let us compare these remuneration differences between the private and public sector (Table 2.35). In 2014, the average wage of manual workers in the public sector equalled 85.1 % of wages received by manual workers in the private sector while the average wages of non-manual workers in the public sector were 86.4 % of the average received by non-manual workers in the private sectors. Over the 2014–2019 period, workers in the public sector converged significantly on workers in the private sector, totalling 93.6 % (manual) and 93.1 % (non-manual). In 2020, manual workers in the public sector overtook their colleagues in the private sector (by 2.6 %); non-manual workers achieved 97.5 %.

However, looking at the overall differences, we see that average wages received in the public sector were higher than those in the private sector in all three periods—by 0.5 % in 2014, 7.9 % in 2019, and 13.1 % in 2020. Both differences in remuneration, and in workforce structure contributed to this.

Table 2.35 Remuneration differences in wages received in the public and private sector, always compared with average earnings received in the private sector

	2014	2019	2020
Manual workers	0,851	0,936	1,026
Non-manual workers	0,864	0,931	0,975
TOTAL	**1,005**	**1,079**	**1,131**

Source: ISPV.

Once more, let us break down the variable composition index, performing this breakdown not for the purposes of comparison across time, but across space. The methodology is described in Annexe 3. Table 2.36 shows the outcomes which are rather varied in individual years. In 2014, average wages in the public and private sector were essentially the same (with a negligible 0.5 % difference); nevertheless, individual workers in the public sector received a lower remuneration (by 14 %) which was compensated by the effect of a different workforce composition (by 17 %). In 2019, the difference in remuneration dropped to 6.7 % to the detriment of the public sector, with the effect of workforce composition dropping slightly to 15.7 %.

In 2020, manual workers in the public sector caught up with their colleagues in the private sector and remuneration differences in individual types of jobs dropped to 0.5 %. The public sector's 13 % lead was de facto entirely caused by differences in workforce structure as the public sector employed a higher percentage of (better paid) non-manual workers.

Table 2.36 Breakdown of the variable composition index to explain the difference between average wages received in the private and public sector

	2014	2019	2020
Effect of differences in average earnings in individual sectors	0,859	0,933	0,995
Effect of a different structure of the private and public sector	1,170	1,157	1,137
Index of average wages received in the public and private sector	**1,005**	**1,079**	**1,131**

Source: ISPV, author's calculations

2.5 Differences by citizenship

Let us take a look at whether and how wage development differs by citizenship, focusing once more on 2014, 2019 and 2020. In the private sector, the highest wages by citizenship were received by Slovak citizens whose average wage was higher than that received by Czech citizens by ca one fifth. To explain the causes of this difference, we would need to have more detailed data on jobs and other personal characteristics at our disposal. Conversely, the lowest wages were received by Ukrainian citizens (Table 2.37). Development by citizenship was essentially even, with a marked increase in wages received by Polish citizens in 2020 (Table 2.38).

Regarding workforce structure, we can see a marked increase in the numbers of Ukrainian employees which grew almost fourfold between 2014 and 2020 (from 14.3 thous. of people to

53.6 thous. of people, Table 2.39). Nevertheless, it needs to be pointed out that the ISPV monitors only employees registered in this very system.

Table 2.37 Average wages in the private sector by citizenship in 2014, 2019 and 2020, CZK

	2014	2019	2020
Czechia	26 555	35 637	37 375
Slovakia	31 732	42 511	44 986
Ukraine	19 486	26 828	28 311
Poland	27 374	34 534	38 392
Romania	27 032	31 001	32 802
Bulgaria	26 119	37 087	39 759
Others	43 789	46 126	47 757
TOTAL	**26 804**	**35 855**	**37 627**

Source: ISPV

Table 2.38 Development of average wages by citizenship (annual average growth for 2014–2019)

	2019/2014	2020/2019
Czechia	1,061	1,049
Slovakia	1,060	1,058
Ukraine	1,066	1,055
Poland	1,048	1,112
Romania	1,028	1,058
Bulgaria	1,073	1,072
Others	1,010	1,035
TOTAL	**1,060**	**1,049**

Source: ISPV, author's calculations

Table 2.39 Workforce structure in the private sector in 2014, 2019 and 2020, workers (thous.), by citizenship

	2014	2019	2020
Czechia	2 787,4	2 853,5	2 682,6
Slovakia	52,7	69,5	66,9
Ukraine	14,3	47,7	53,6
Poland	9,9	22,5	18,2
Romania	2,6	6,6	6,2
Bulgaria	2,5	7,0	6,5
Others	31,4	62,5	67,7
TOTAL	**2 900,8**	**3 069,3**	**2 901,7**

Source: ISPV

Let us take a look at the public sector.

Table 2.40 Average wages in the public sector by citizenship in 2014, 2019 and 2020, CZK

	2014	2019	2020
Czechia	26 758	38 631	42 456
Slovakia	33 687	49 047	56 173
Ukraine	22 822	33 196	39 239
Poland	22 434	37 240	45 646
Romania	29 947	39 451	40 884
Bulgaria	24 901	36 434	39 646
Others	28 439	40 284	44 337
TOTAL	**26 794**	**38 699**	**42 555**

Source: ISPV

Table 2.41 Development of average wages in the public sector by citizenship (annual average growth for 2014–2019)

	2019/2014	2020/2019
Czechia	1,076	1,099
Slovakia	1,078	1,145
Ukraine	1,078	1,182
Poland	1,107	1,226
Romania	1,057	1,036
Bulgaria	1,079	1,088
Others	1,072	1,101
TOTAL	**1,076**	**1,100**

Source: ISPV, author's calculations

Table 2.42 Workforce structure in the public sector in 2014, 2019 and 2020, workers (thous.), by citizenship

	2014	2019	2020
Czechia	607,3	640,1	640,0
Slovakia	3,4	4,7	4,9
Ukraine	0,5	1,1	1,4
Poland	0,2	0,2	0,2
Romania	0,1	0,2	0,2
Bulgaria	0,1	0,1	0,1
Others	0,5	0,8	0,9
TOTAL	**2 900,8**	**3 069,3**	**2 901,7**

Source: ISPV

The development in the public sector is not surprising. The workforce overwhelmingly consisted of Czech citizens (Table 2.42). Once more, the highest wages were received by

Slovak citizens (Table 2.41). In terms of development, the wages of Polish citizens grew the fastest (in 2020, by 22.6 % year-on-year). Care must be taken when interpreting the data, however, as the number of observations is very small and the results may be affected by random facts.

2.6 Differences by economic sector

The last part of Chapter 2 observes differences by economic sector as per individual NACE sections. Table 2.43 compares average earnings by economic sector in the private sector. In the long term, the highest earnings had been received in information and communication (64,425 CZK in 2020) and financial and insurance activities (62,092 CZK in 2020). Conversely, the lowest earnings were recorded in accommodation and food service activities (21,975 CZK in 2020).

Table 2.43 Average wages in the private sector by economic sector in 2014, 2019 and 2020, CZK

		2014	2019	2020
A	Agriculture, forestry, and fishing	22 244	29 090	30 779
B	Mining and quarrying	33 104	39 749	40 611
C	Manufacturing	27 013	36 217	37 544
D	Electricity, gas, heat supply	41 966	51 167	53 794
E	Water supply; sewerage	25 593	33 118	34 200
F	Construction	24 061	31 891	33 259
G	Sale and repair of motor vehicles	24 627	33 724	34 862
H	Transportation and storage	24 800	33 274	34 375
I	Accommodation and food service activities	14 401	21 510	21 975
J	Information and communication	48 235	60 345	64 425
K	Financial and insurance activities	49 333	61 426	62 092
L	Real estate activities	23 252	31 454	30 245
M	Professional, scientific, and technical activities	33 166	43 316	44 655
N	Administrative and support service activities	17 928	24 784	27 280
O	Public administration and defence; compulsory social security	38 653	50 768	53 679
P	Education	33 430	42 553	43 601
Q	Human health and social work activities	24 697	34 632	39 592
R	Arts, entertainment and recreation	21 168	32 583	31 434
S	Other service activities	20 986	27 285	28 473
	TOTAL	**26 804**	**35 855**	**37 627**

Source: ISPV

In terms of development (Table 2.44), an above-average growth was recorded in the least remunerated accommodation and food service activities in the 2014–2019 period, overtaking the nationwide average by 2.4 % annually. In 2020, this convergence slowed down due to the onset of the covid-19 pandemic which affected these sectors the worst (they grew by mere 2.2

% compared to the overall growth of 4.9 %). In the private sector, those employed in real estate activities and arts, entertainment and recreation fared even worse as there was a year-on-year decline of 3.8 % and 3.5 %, respectively. Conversely in 2020, the situation was good for those employed in information and communication (+6.8 %) and especially in human health and social work activities (+14.3 % year-on-year). In 2020, there was also a marked growth of wages in administrative and support service activities (+10.1 % year-on-year) in the private sector. As we can see, the effect of the pandemic year on individual sectors, or rather employees, was very uneven.

Table 2.44 Development of average wages by economic sector (annual average growth for 2014–2019)

		2019/2014	2020/2019
A	Agriculture, forestry, and fishing	1,055	1,058
B	Mining and quarrying	1,037	1,022
C	Manufacturing	1,060	1,037
D	Electricity, gas, heat supply	1,040	1,051
E	Water supply; sewerage	1,053	1,033
F	Construction	1,058	1,043
G	Sale and repair of motor vehicles	1,065	1,034
H	Transportation and storage	1,061	1,033
I	Accommodation and food service activities	1,084	1,022
J	Information and communication	1,046	1,068
K	Financial and insurance activities	1,045	1,011
L	Real estate activities	1,062	0,962
M	Professional, scientific, and technical activities	1,055	1,031
N	Administrative and support service activities	1,067	1,101
O	Public administration and defence; compulsory social security	1,056	1,057
P	Education	1,049	1,025
Q	Human health and social work activities	1,070	1,143
R	Arts, entertainment and recreation	1,090	0,965
S	Other service activities	1,054	1,044
	TOTAL	**1,060**	**1,049**

Source: ISPV, author's calculations

Most employees worked in manufacturing. In 2020, in terms of workforce structure, there was a rather marked year-on-year drop in accommodation and food service activities (from 108.3 thous. of people to 84.2 thous. of people); there was also a distinct drop in administrative and support service activities and partly in manufacturing (Table 2.45).

Changes in workforce structure did not have any significant effect on the development of average earnings throughout the private sector. In 2020, they resulted in a 0.6 % rise as employees moved from worse- to better-paying industries (this especially entailed decreasing

numbers of those working in accommodation and food service activities and increasing amounts of information and communication employees).

Table 2.45 Workforce structure in the private sector in 2014, 2019 and 2020, workers (thous.), by economic sector

		2014	2019	2020
A	Agriculture, forestry, and fishing	91,1	86,6	83,8
B	Mining and quarrying	28,6	21,3	19,7
C	Manufacturing	991,9	1 045,1	977,5
D	Electricity, gas, heat supply	28,2	32,9	32,4
E	Water supply; sewerage	44,4	45,7	45,8
F	Construction	194,7	186,8	184,2
G	Sale and repair of motor vehicles	458,1	470,7	450,9
H	Transportation and storage	220,7	239,5	227,3
I	Accommodation and food service activities	96,1	108,3	84,2
J	Information and communication	94,2	116,1	117,2
K	Financial and insurance activities	67,7	68,7	68,0
L	Real estate activities	41,6	38,8	41,1
M	Professional, scientific, and technical activities	142,4	161,7	154,7
N	Administrative and support service activities	149,3	170,6	146,8
O	Public administration and defence; compulsory social security	6,8	6,5	6,6
P	Education	58,1	63,2	63,2
Q	Human health and social work activities	124,0	142,6	139,2
R	Arts, entertainment and recreation	22,8	22,2	19,6
S	Other service activities	40,2	42,2	39,7
	TOTAL	**2 900,8**	**3 069,3**	**2 901,7**

Source: ISPV

Let us now look at the public sector. Here, some industries employed a negligible amount of workers which is why some lines in Tables 2.46 and 2.48 are left empty.

In the public sector, the highest wages were received in information and communication though the difference between this industry and the average or the other industries was not as marked as in the private sector. In 2020 in the public sector, average earnings in information and communication amounted to 57,278 CZK (Table 2.46). Human health and social work activities (48,978 CZK) were the second best-paid, followed by professional, scientific and technical activities (47,909 CZK). Employees in water supply and sewerage (29, 080 CZK in 2020) and accommodation and food service activities (30, 392 CZK) were remunerated the least.

Table 2.46 Average wages in the public sector by economic sector in 2014, 2019 and 2020, CZK

		2014	2019	2020
A	Agriculture, forestry, and fishing	23 858	32 849	35 803

B	Mining and quarrying	(n/a)	(n/a)	(n/a)
C	Manufacturing	(n/a)	(n/a)	(n/a)
D	Electricity, gas, heat supply	(n/a)	(n/a)	(n/a)
E	Water supply; sewerage	19 898	26 814	29 080
F	Construction	(n/a)	(n/a)	(n/a)
G	Sale and repair of motor vehicles	(n/a)	(n/a)	(n/a)
H	Transportation and storage	26 836	38 247	41 515
I	Accommodation and food service activities	19 732	27 964	30 392
J	Information and communication	39 644	51 614	57 278
K	Financial and insurance activities	(n/a)	(n/a)	(n/a)
L	Real estate activities	23 185	30 259	33 295
M	Professional, scientific, and technical activities	34 629	46 432	47 909
N	Administrative and support service activities	20 177	30 350	33 518
O	Public administration and defence; compulsory social security	28 270	40 133	42 717
P	Education	24 557	35 806	39 515
Q	Human health and social work activities	27 912	41 700	48 978
R	Arts, entertainment and recreation	22 515	32 431	34 805
S	Other service activities	21 166	29 393	31 386
	TOTAL	**26 794**	**38 699**	**42 555**

Source: ISPV

Development of average wages in the public sector in the 2014–2019 was evenly distributed across individual industries, with information and communication (+5.4 %) and real estate activities (+5.5 %) diverging from the average annual growth of 7.6 % in a downward trend. Conversely, administrative and support service activities (+ 8.5 %) and health and social work.

Despite the government proclaiming to promote education as a priority, the growth of average earnings in the public sector over the 2014–2019 was only average (+ 7.8 %). In 2020, the gap around the average 10 % year-on-year growth of average earnings widened rather significantly. On one hand, professional, scientific, and technical activities grew only by 3.2 %; on the other, the wages of employees in health and social work improved by 17.5 % on average. This data is fully in line with presented outcomes regarding jobs as per the CZ-ISCO classification. Unlike the private sector where accommodation and food service activities and arts, entertainment and recreation experienced a decline in absolute terms in 2020 when compared to 2019, in the public sector these two industries saw a relatively strong, though below-average growth (+8.7 %, resp. +7.3 %).

Table 2.47 Development of average wages in the public sector by economic sector (annual average growth for 2014–2019)

		2019/2014	2020/2019
A	Agriculture, forestry, and fishing	1,066	1,090

B	Mining and quarrying	(n/a)	(n/a)
C	Manufacturing	(n/a)	(n/a)
D	Electricity, gas, heat supply	(n/a)	(n/a)
E	Water supply; sewerage	1,061	1,085
F	Construction	(n/a)	(n/a)
G	Sale and repair of motor vehicles	(n/a)	(n/a)
H	Transportation and storage	1,073	1,085
I	Accommodation and food service activities	1,072	1,087
J	Information and communication	1,054	1,110
K	Financial and insurance activities	(n/a)	(n/a)
L	Real estate activities	1,055	1,100
M	Professional, scientific, and technical activities	1,060	1,032
N	Administrative and support service activities	1,085	1,104
O	Public administration and defence; compulsory social security	1,073	1,064
P	Education	1,078	1,104
Q	Human health and social work activities	1,084	1,175
R	Arts, entertainment and recreation	1,076	1,073
S	Other service activities	1,068	1,068
	TOTAL	**1,076**	**1,100**

Source: ISPV, author's calculations

Workforce structure did not see any significant changes (Table 2.48), and so changes in employment structure as measured by the structural index were rather negligible in their effect on the overall development of average wages in the public sector. In the public sector, employees worked primarily in public administration and defence, compulsory social security (270.7 thous. of people in 2020), education (201.4 thous. of people in 2020) and human health and social work activities (132.3 thous. of people in 2020).

Table 2.48 Workforce structure in the public sector in 2014, 2019 and 2020, workers (thous.), by economic sector

		2014	2019	2020
A	Agriculture, forestry, and fishing	0,6	0,6	0,6
B	Mining and quarrying	(n/a)	(n/a)	(n/a)
C	Manufacturing	(n/a)	(n/a)	(n/a)
D	Electricity, gas, heat supply	(n/a)	(n/a)	(n/a)
E	Water supply; sewerage	3,8	3,6	3,5
F	Construction	(n/a)	(n/a)	(n/a)
G	Sale and repair of motor vehicles	(n/a)	(n/a)	(n/a)
H	Transportation and storage	6,5	6,8	6,9
I	Accommodation and food service activities	3,1	3,2	3,1
J	Information and communication	0,1	0,2	0,2
K	Financial and insurance activities	(n/a)	(n/a)	(n/a)
L	Real estate activities	1,1	1,1	1,1
M	Professional, scientific, and technical activities	2,9	3,4	3,3
N	Administrative and support service activities	0,3	0,4	0,4
O	Public administration and defence; compulsory social security	262,3	273,9	270,7
P	Education	178,8	196,3	201,4
Q	Human health and social work activities	129,1	133,1	132,3
R	Arts, entertainment and recreation	22,8	24,0	23,7
S	Other service activities	0,5	0,6	0,7
	TOTAL	**612,1**	**647,2**	**647,7**

Source: ISPV

3 Detailed look at remuneration in the Karlovy Vary Region

In Chapter 1, we identified the Karlovy Vary Region as the least economically developed region in Czechia, measured by its share in the produced gross value added or gross domestic product. In this part of the study, we will take a look at whether and how this fact relates to the amount and structure of employee remuneration. Similarly to the second part which focused on the entire Czechia, this part too will be segmented by individual personal characteristics of employees. Considering the region's size, data for some classification criteria may unfortunately not be available. Once again we will work with years 2014, 2019, and 2020.

3.1 Differences by age and gender

First, let us focus on wage differences by age and gender in the Karlovy Vary Region in 2014, 2019, and 2020.

Table 3.1 Average earnings in the private sector in 2014 by gender and age, Karlovy Vary Region, CZK

	men	women	TOTAL
20 years and younger	15 814	14 720	15 336
20—29 years	19 452	17 873	18 752
30—39 years	25 181	19 247	22 357
40—49 years	26 522	19 669	23 044
50—59 years	25 985	19 416	22 917
60 years and older	25 401	21 817	24 192
TOTAL	**24 811**	**19 330**	**22 241**

Source: ISPV.

Table 3.2 Average earnings in the private sector in 2019 by gender and age, Karlovy Vary Region, CZK

	men	women	TOTAL
20 years and younger	22 337	21 693	22 049
20—29 years	29 139	25 999	27 723
30—39 years	31 201	28 766	30 177
40—49 years	35 485	28 790	32 082
50—59 years	34 042	28 025	31 194
60 years and older	31 876	26 950	30 016
TOTAL	**32 850**	**28 026**	**30 627**

Source: ISPV.

Table 3.3 Average earnings in the private sector in 2020 by gender and age, Karlovy Vary Region, CZK

	men	women	TOTAL
20 years and younger	23 498	22 350	23 042
20—29 years	30 648	26 774	28 963
30—39 years	31 674	29 723	30 980
40—49 years	36 673	31 230	34 088
50—59 years	34 621	29 400	32 395
60 years and older	32 644	28 937	31 460
TOTAL	**23 498**	**22 350**	**23 042**

Source: ISPV.

In 2014, the highest earnings were received by men aged 40–49 years (36,673 CZK). Interestingly, this exceeded the remuneration received by the 30–39 age group by almost five thousand CZK. Women's wages also peaked in the 40–49 age group but the difference when compared to other age groups was not so significant.

In 2019, employees in the 40–49 age group received the highest wages but the differences between this group and e.g. those aged 50–59 were no so stark. In the case of women, the curve flattened a bit and there were no significant differences within the 30–59 age group. In 2020, the 40–49 age group set itself apart again, both for men and women.

Let us now focus on the development in individual industries, monitoring mostly structural differences between men and women and the relevant ratios. The year of 2020 saw the onset of the covid-19 pandemic and the related slump in industries which are rather important for the Karlovy Vary Region (tourism). Data for 2019/2014 was converted to annual average growth, using geometric mean.

Table 3.4 Development of average wages in individual age groups in the private sector (for 2019/2014 annual average growth), Karlovy Vary Region

	2019/2014 men	2019/2014 women	2019/2014 TOTAL	2020/2019 men	2020/2019 women	2020/2019 TOTAL
20 years and younger	1,072	1,081	**1,075**	1,052	1,030	**1,045**
20—29 years	1,084	1,078	**1,081**	1,052	1,030	**1,045**
30—39 years	1,044	1,084	**1,062**	1,015	1,033	**1,027**
40—49 years	1,060	1,079	**1,068**	1,033	1,085	**1,063**
50—59 years	1,056	1,076	**1,064**	1,017	1,049	**1,039**

60 years and older	1,046	1,043	**1,044**	1,024	1,074	**1,048**
TOTAL	**1,058**	**1,077**	**1,066**	**1,027**	**1,058**	**1,046**

Source: ISPV, author's calculations

Table 3.4 shows development of average wages in the private sector. In the 2019–2020 period, the growth of women's wages far outpaced that of men's—by two percentage points annually in the first period, in the second one by almost three. Regarding individual age groups, development was the fastest among the youngest (worst remunerated) age groups in the 2014–2019 period. In 2020, the growth of wages received by women from the youngest age groups (20 years and younger, and 20–29 years) stagnated; conversely, those received by men from these two age groups saw an above-average growth.

Comparing the development of wages in the Karlovy Vary Region with the development in Czechia as a whole (Table 2.4), we see it was no different for men and women over the 2014–2019 period, with women experiencing a faster wage growth of ca 1.3 percentage point annually (catching up, albeit slowly). In 2020, wages in the Karlovy Vary Region grew more slowly than those in the rest of Czechia.

Table 3.5 Differences in the average wages of men and women in 2014, 2019 and 2020, Karlovy Vary Region

	F/M 2014	F/M 2019	F/M 2020
20 years and younger	0,931	0,971	0,951
20—29 years	0,919	0,892	0,874
30—39 years	0,764	0,922	0,938
40—49 years	0,742	0,811	0,852
50—59 years	0,747	0,823	0,849
60 years and older	0,859	0,845	0,886
TOTAL	**0,779**	**0,853**	**0,879**

Source: ISPV, author's calculations.

In the private sector, women lagged behind men mostly in the 20–29, 40–49, and 50–59 age groups. Over the 2014–2020 period, the wage differences in the 30–39 age group decreased significantly (to mere 6.2 %) and did not exceed 15 % even in the other groups. This sets these outcomes rather strongly apart from the nationwide results (compare with Table 2.5) where the differences among the 40–49 and 50–59 age groups constitute 22–25 % of men's wages; in the 30–39 age group, women in Czechia as a whole lagged by 19 % as opposed to the 6 % recorded with women working in the Karlovy Vary Region.

Let us now look at how remuneration differences in the Karlovy Vary Region fare when compared with the nationwide average (Table 3.6) as there are differences based in gender, age, and time.

Regarding comparisons over time, it can be said that remuneration differences decreased significantly in the 2014–2020 period: while they constituted 17 % in 2014, the figure was only 10.7 % in 2020. There were bigger differences with men than with women, changing over time. While men's wages in the Karlovy Vary Region lagged behind by 16.4 % and women's by 14.3 % in 2014, in 2020 men's wages lagged behind by 14.3 % and women's only by 3.6 %. Overall differences for the entire working population of the region declined from 17 % to 10.7 %. This contrasts rather starkly with the overall lagging of the Karlovy Vary Region which seems to be increasing. Thus, it is necessary to look at the structure or participation rate in the labour market if we wish to uncover the roots of this problem.

Table 3.6 Differences in the average wages of men and women in 2014, 2019 and 2020, Karlovy Vary Region, compared to the Czech average

	M 2014	F 2014	C 2014	M 2019	F 2019	C 2019	M 2020	F 2020	C 2020
20 years and younger	0,918	0,993	**0,929**	0,953	1,027	**0,979**	1,002	1,058	**1,023**
20—29 years	0,843	0,862	**0,846**	0,898	0,910	**0,896**	0,945	0,937	**0,936**
30—39 years	0,796	0,805	**0,779**	0,760	0,883	**0,795**	0,772	0,912	**0,816**
40—49 years	0,814	0,870	**0,821**	0,821	0,909	**0,842**	0,848	0,986	**0,895**
50—59 years	0,888	0,882	**0,879**	0,881	0,952	**0,902**	0,896	0,999	**0,937**
60 years and older	0,862	0,897	**0,857**	0,864	0,881	**0,860**	0,885	0,945	**0,901**
TOTAL	**0,836**	**0,857**	**0,830**	**0,835**	**0,911**	**0,854**	**0,857**	**0,964**	**0,893**

Source: ISPV, author's calculations.

Let us look at the public sector. Here, the age group classification copied the nationwide development to a large degree. Men's earnings were the highest in the 40–49 age group; in case of women, they grew with age. This trend was evident in all of the monitored years 2014, 2019, and 2020 (Tables 3.7 to 3.9).

Table 3.7 Average earnings in the public sector in 2014 by gender and age, Karlovy Vary Region

	men	women	TOTAL
20 years and younger	(n/a)	(n/a)	(n/a)
20—29 years	21 808	19 770	20 797

30—39 years	28 059	22 517	24 889
40—49 years	31 257	24 049	26 332
50—59 years	28 887	25 218	26 187
60 years and older	28 522	25 854	27 083
TOTAL	**28 278**	**23 960**	**25 487**

Source: ISPV

Table 3.8 Average earnings in the public sector in 2019 by gender and age, Karlovy Vary Region

	men	women	TOTAL
20 years and younger	(n/a)	(n/a)	(n/a)
20—29 years	33 049	29 063	30 810
30—39 years	39 706	31 578	35 106
40—49 years	43 347	34 141	37 158
50—59 years	41 261	36 467	37 825
60 years and older	38 231	36 397	37 090
TOTAL	**40 292**	**34 445**	**36 474**

Source: ISPV

Table 3.9 Average earnings in the public sector in 2020 by gender and age, Karlovy Vary Region

	men	women	TOTAL
20 years and younger	(n/a)	(n/a)	(n/a)
20—29 years	36 670	32 387	34 258
30—39 years	42 790	34 378	38 043
40—49 years	46 494	37 758	40 617
50—59 years	44 808	40 064	41 419
60 years and older	41 638	40 114	40 667
TOTAL	**43 626**	**37 982**	**39 390**

Source: ISPV

Now, let us attempt to evaluate differences over the 2014–2020 period (Table 3.10). In both of the monitored periods, wages grew the fastest in the 20–29 age group, i.e. the public sector age group receiving the lowest wages. Nevertheless, the rate did not see a marked increase. The wages of women grew faster than those of men, both in the private and public sector. Over the 2014–2019 period, the difference was very small (0.2 % annually). In 2020, the growth rate of women's wages overtook that of men's by two percentage points. In the Karlovy Vary Region, wages in the public sector also grew faster than those in the private sector.

Table 3.10 Development of average wages in individual age groups in the public sector (for 2019/2014 annual average growth), Karlovy Vary Region

	2019/2014 men	2019/2014 women	2019/2014 TOTAL	2020/2019 men	2020/2019 women	2020/2019 TOTAL
20 years and younger	(n/a)	(n/a)	**(n/a)**	(n/a)	(n/a)	**(n/a)**
20—29 years	1,087	1,080	**1,082**	1,110	1,114	**1,112**
30—39 years	1,072	1,070	**1,071**	1,078	1,089	**1,084**
40—49 years	1,068	1,073	**1,071**	1,073	1,106	**1,093**
50—59 years	1,074	1,077	**1,076**	1,086	1,099	**1,095**
60 years and older	1,060	1,071	**1,065**	1,089	1,102	**1,096**
TOTAL	**1,073**	**1,075**	**1,074**	**1,083**	**1,103**	**1,080**

Source: ISPV, author's calculations

Let us now take a look at differences in the remuneration of men and women and on their development over the 2014–2020 period (Table 3.11). Development in the Karlovy Vary Region partially copied the nationwide development in Czechia, with a possible exception of the 30–39 age group where wages of women received in the public sector lagged behind those of men by ca 20 %, although Czechia as a whole (Table 2.10) saw a decrease in differences by gender over time.

Table 3.11 Differences in average wages of men and women in 2014, 2019 and 2020, Karlovy Vary Region

	F/M 2014	F/M 2019	F/M 2020
20 years and younger	(n/a)	(n/a)	(n/a)
20—29 years	0,907	0,879	0,883
30—39 years	0,802	0,795	0,803
40—49 years	0,769	0,788	0,812
50—59 years	0,873	0,884	0,894
60 years and older	0,906	0,952	0,963
TOTAL	**0,847**	**0,855**	**0,871**

Source: ISPV, author's calculations.

Finally, let us assess remuneration differences when compared against the nationwide average (Table 3.12). Unlike the private sector, the public sector in the Karlovy Vary Region was

diverging somewhat from the nationwide average. While public sector workers lagged behind by ca 4.9 % in 2014, this difference increased to 7.4 % in 2020. Differences between men and women were almost settled, with the men growing worse by almost one percentage point. In the case of men from the 20–29 age group, the difference when compared with the nationwide average constituted ca 1–2 %; women from the same age group lagged behind by ca 10 %.

Table 3.12 Differences in average wages of men and women in 2014, 2019 and 2020, Karlovy Vary Region, compared to the Czech average

	M 2014	F 2014	C 2014	M 2019	F 2019	C 2019	M 2020	F 2020	C 2020
20 years and younger	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)	(n/a)
20—29 years	0,975	0,902	**0,941**	0,987	0,907	**0,945**	0,995	0,893	**0,938**
30—39 years	0,955	0,931	**0,942**	0,935	0,898	**0,916**	0,932	0,883	**0,907**
40—49 years	0,953	0,964	**0,964**	0,940	0,948	**0,948**	0,937	0,943	**0,942**
50—59 years	0,934	0,963	**0,954**	0,932	0,963	**0,955**	0,935	0,958	**0,952**
60 years and older	0,922	0,913	**0,916**	0,902	0,920	**0,912**	0,910	0,923	**0,917**
TOTAL	**0,944**	**0,953**	**0,951**	**0,937**	**0,944**	**0,943**	**0,938**	**0,937**	**0,926**

Source: ISPV, author's calculations.

3.2 Differences by education

In this part we will take a look at the development of average wages by the highest educational attainment. Remember, the ISPV terminology understands "university education" as either master's education (be it "long-term", i.e. five or six years, or follow-up "short-term" of two years) or doctoral education (concluded with the granting of a Ph.D. degree or similar). As was the case with the nationwide summary, the tables were edited for the sake of transparency and the term "university" replaced with the more suitable "master and doctoral". The same three years used for comparisons across age groups and genders were used here, i.e. 2014, 2019 and 2020. Once again, the public and private sectors were analysed separately.

Table 3.13 Average wages in the private sector by educational attainment in 2014, 2019 and 2020, CZK, Karlovy Vary Region

	2014	2019	2020
Elementary and early school leavers	16 995	24 341	26 639
Secondary without matura	19 717	28 060	29 451
Secondary with matura	23 831	32 474	33 759
Advanced vocational and bachelor	26 819	37 271	38 005

Master and doctoral	41 217	47 368	46 660
N/A	22 809	28 190	29 371
TOTAL	**22 241**	**30 627**	**32 031**

Source: ISPV

In the Karlovy Vary Region, there too were significant differences in remuneration by educational attainment. In the private sector, the average wages of employees with a master's or doctoral degree were 46,440 CZK, while employees with secondary education without matura earned 29,451 CZK. **This means that the wage premium for earning a university degree is much lower in the Karlovy Vary region than the nationwide average would assume.** Additionally, the number of people with university education working in the Karlovy Vary Region is rather low—less than 10 % of the total workforce in the private sector.

Table 3.14 Development of average wages in individual education groups (annual average growth for 2014–2019), Karlovy Vary Region

	2019/2014	2020/2019
Elementary and early school leavers	1,074	1,094
Secondary without matura	1,073	1,050
Secondary with matura	1,064	1,040
Advanced vocational and bachelor	1,068	1,020
Master and doctoral	1,028	0,985
N/A	1,043	1,042
TOTAL	**1,066**	**1,046**

Source: ISPV, author's calculations

Wage development in individual education groups in the Karlovy Vary Region was very uneven. Over the 2009–2014 period, the regional average saw a wage increase across all education groups apart from the master's and doctoral group where growth was lower by almost four percentage points when compared with the regional average. In 2020, wages in the private sector grew at a decent 4.6 % rate, with wages received by the uneducated growing the fastest (+ 9.4 % year-on-year) and those received by people with a master's or doctoral degree even seeing a 1.5 % year-on-year decrease. This development is what contributed to the stark decrease of the wage premium enjoyed by the university educated.

Table 3.15 Educational structure of workforce in the private sector in 2014, 2019 and 2020, workers (thous.), Karlovy Vary Region

	2014	2019	2020
Elementary and early school leavers	8,2	8,8	7,5
Secondary without matura	28,9	26,7	23,6

Secondary with matura	22,8	21,7	19,4
Advanced vocational and bachelor	1,6	1,9	1,6
Master and doctoral	3,7	4,5	4,5
N/A	3,1	2,0	3,2
TOTAL	**68,3**	**65,6**	**60,0**

Source: ISPV

In the private sector, the educational structure in the Karlovy Vary Region was rather stable. There was a relatively sharp decrease in the numbers of people with secondary education without matura and a slight drop in the number of people with secondary education with matura. Conversely, the numbers of people with a master's or doctoral degree was rising. Looking at indices breakdown, we see that changes in workforce structure had essentially no effect over the 2014–2019 period. In 2020, they added 0.3 % to the growth of average wages in the private sector in the Karlovy Vary Region.

Table 3.16 shows us the extent to which workers from individual education groups in the private sector lagged behind the nationwide average. The biggest, ever-increasing differences can be seen in the master's and doctoral group where they grew by almost 10 % over six years (from 14.8 % to 23.3 %). Rather noticeable differences are also evident in the case of workers with advanced vocational and bachelor's education though these are more or less stable over time. In case of people with elementary education and secondary education without matura, there were almost no differences; in case of people with secondary education with matura, they constituted around 8 %. **In the long term, this can result in an outflow of the university-educated people as they leave for regions with better earnings; meanwhile, the less-educated will feel no need to leave (e.g. due to cheaper housing).**

Table 3.16 Differences in average wages in the private sector by education groups in 2014, 2019 and 2020, Karlovy Vary Region, compared to the Czech average

Wages	2014	2019	2020
Elementary and early school leavers	0,950	0,978	0,994
Secondary without matura	0,952	0,984	0,987
Secondary with matura	0,901	0,923	0,920
Advanced vocational and bachelor	0,852	0,881	0,847
Master and doctoral	0,874	0,804	0,767
N/A	0,931	0,988	1,020
TOTAL	**0,830**	**0,854**	**0,851**

Source: ISPV, author's calculations.

We will also take a look at the degree to which the remuneration differences between the Karlovy Vary Region and Czechia are caused by different remuneration in individual education groups vs. by a different workforce structure. Once more, we will perform a spatial application of the variable composition index breakdown, analogically to the previous part of the study where we used it to evaluate the structure of manual and non-manual workers in individual sectors (see the Annexe).

Table 3.17 Analysis of differences between average wages in the private sector, Karlovy Vary Region, compared to the Czech average, 2014–2020

	2014	2019	2020
Effect of remuneration differences in individual education groups (constant composition index)	0,910	0,913	0,901
Effect of differences in employee educational structure	0,912	0,936	0,945
TOTAL	**0,830**	**0,854**	**0,851**

Source: ISPV, author's calculations

Table 3.17 shows that both influences contribute to the fact that the wage development in the private sector in the Karlovy Vary Region lags behind the nationwide average. Remuneration differences in individual education groups contribute ca 9–10 %, while different educational structure of the workforce contributes another five to nine percent. Over the monitored period, this effect is reduced slightly.

We can now take a look at the public sector. Table 3.18 compares wages in the public sector, using the highest educational attainment as a measure of classification. Notice that generally speaking, the wage premium for educational attainment is significantly lower in the public than in the private sector. In 2020, the average earnings of workers with a master's or doctoral education amounted to 49,521 CZK while workers with secondary education with matura earned 38,011 CZK on average. In the public sector, wages received by workers with elementary education or by early school leavers differed rather significantly as we will show in the next table.

Table 3.18 Average wages in the public sector by educational attainment in 2014, 2019 and 2020, CZK, Karlovy Vary Region

	2014	2019	2020
Elementary and early school leavers	12 930	20 697	23 623
Secondary without matura	16 848	24 851	28 428
Secondary with matura	24 953	35 091	38 011
Advanced vocational and bachelor	28 905	40 019	43 763
Master and doctoral	32 335	45 687	49 821
N/A	25 633	35 959	40 095
TOTAL	**25 487**	**36 474**	**39 930**

Source: ISPV

Table 3.19 shows development over time. The wages received by the groups of the lowest-educated workers grew the fastest—in the 2014–2019 period at a rate of 8–10%; in 2020 by more than 14 % year-on-year. This, too, contributes to the reduction in wage premiums. Unlike the private sector, the public sector saw a rather marked increase in wages received by university-educated workers (in 2020 over 9 % year-on-year), relatively strongly changing the ratio of remuneration of both sectors' university-educated workers.

Table 3.19 Development of average wages in individual education groups (annual average growth for 2014–2019), Karlovy Vary Region

	2019/2014	2020/2019
Elementary and early school leavers	1,099	1,141
Secondary without matura	1,081	1,144
Secondary with matura	1,071	1,083
Advanced vocational and bachelor	1,067	1,094
Master and doctoral	1,072	1,090
N/A	1,070	1,115
TOTAL	**1,074**	**1,095**

Source: ISPV, author's calculations

Table 3.20 Educational structure of workforce in the public sector in 2014, 2019 and 2020, workers (thous.), Karlovy Vary Region

	2014	2019	2020
Elementary and early school leavers	0,6	0,5	0,5
Secondary without matura	1,8	1,9	1,9
Secondary with matura	6,8	6,9	6,8
Advanced vocational and bachelor	1,2	1,6	1,6
Master and doctoral	3,3	3,7	3,7
N/A	0,7	0,6	0,6
TOTAL	**14,5**	**15,1**	**15,1**

Source: ISPV

In the public sector, educational structure (Table 3.20) was relatively stable, i.e. the effect of changes in workforce structure on the overall development of average earnings was essentially negligible. Table 3.21 shows differences in average earnings in the public sector, comparing the Karlovy Vary Region with the Czech average. There were no significant differences in individual groups. People with elementary education and early school leavers, as well as those with a master's or doctoral degree, lagged behind the most (by 8.9 % and 5.8 %, respectively).

Conversely, differences evident among people with secondary education without matura were essentially negligible, amounting to ca 2 %.

Table 3.21 Differences in average earnings in the public sector by education groups in 2014, 2019 and 2020, Karlovy Vary Region, compared to the Czech average

	2014	2019	2020
Elementary and early school leavers	0,901	0,939	0,911
Secondary without matura	0,978	0,975	0,980
Secondary with matura	0,976	0,966	0,954
Advanced vocational and bachelor	1,020	0,985	0,973
Master and doctoral	0,934	0,935	0,942
N/A	1,000	1,029	1,020
TOTAL	**0,951**	**0,943**	**0,938**

Source: ISPV, author's calculations.

Finally, let us look at the outcomes of an analysis of earnings differences in the public sector, comparing the Karlovy Vary Region with the nationwide average. Differences in remuneration in individual education groups contributed 4–6 % to the overall difference of 5–7 %; meanwhile, differences in the educational workforce structure were rather negligible in the public sector, contributing only ca 1.7 %.

Table 3.22 Analysis of differences in average earnings in the public sector, Karlovy Vary Region, compared to the Czech average, 2014–2020

	2014	2019	2020
Effect of remuneration differences in individual education groups (constant composition index)	0,965	0,958	0,955
Effect of differences in employee educational structure	0,986	0,984	0,983
TOTAL	**0,951**	**0,943**	**0,938**

Source: ISPV, author's calculations

3.3 Differences by occupation type

Finally, we will focus on differences by type of occupation. First, we will look at the average wage amount by occupation, then compare data over time, and compare the Karlovy Vary Region with the nationwide average. We will also take a look at the structure of workers. We will start with the private sector and continue with the public sector.

Table 3.23 Average wages by occupation, private sector, CZK, Karlovy Vary Region

		2014	2019	2020
1	Managers	43 621	63 795	66 660

11	Chief Executives, Senior Officials and Legislators	(n/a)	(n/a)	(n/a)
12	Administrative and Commercial Managers	61 445	69 667	72 646
13	Production and Specialized Services Managers	42 240	71 816	77 051
14	Hospitality, Retail, and Other Service Managers	(n/a)	46 805	49 432
2	Professionals	35 974	48 775	50 517
21	Science and Engineering Professionals	34 827	53 543	53 914
22	Health Professionals	38 120	47 935	48 287
23	Teaching Professionals	(n/a)	(n/a)	(n/a)
24	Business and Administration Professionals	40 461	49 808	(n/a)
25	Information and Communications Technology Professionals	(n/a)	(n/a)	(n/a)
26	Legal, Social, and Cultural Professionals	(n/a)	33 326	34 780
3	Technicians and Associate Professionals	26 601	35 551	36 341
31	Science and Engineering Associate Professionals	29 715	38 916	40 652
32	Health Associate Professionals	21 379	31 865	32 653
33	Business and Administration Associate Professionals	28 996	35 294	35 678
34	Legal, Social, Cultural and Related Associate Professionals	24 882	35 629	(n/a)
35	Information and Communications Technicians	(n/a)	(n/a)	(n/a)
4	Clerks	20 757	27 666	29 110
41	General and Keyboard Clerks	18 052	25 573	27 330
42	Customer Services Clerks	20 288	27 901	28 267
43	Numerical and Material Recording Clerks	23 443	30 937	32 862
44	Other Clerical Support Workers	19 228	22 913	25 245
5	Services and Sales Workers	16 114	24 877	25 619
51	Personal Services Workers	16 193	25 362	25 459
52	Sales Workers	16 116	24 792	25 693
53	Personal Care Workers	15 935	(n/a)	26 293
54	Protective Services Workers	15 857	21 787	24 632
6	Skilled Agricultural, Forestry, and Fishing Workers	(n/a)	(n/a)	(n/a)
61	Market-oriented Skilled Agricultural Workers	(n/a)	(n/a)	(n/a)
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	20 996	30 002	31 769
7	Craft and Related Trades Workers	21 170	30 323	31 470
71	Building and Related Trades Workers (excluding Electricians)	(n/a)	(n/a)	(n/a)
72	Metal, Machinery and Related Trades Workers	23 044	32 255	33 228
73	Handicraft and Printing Workers	16 388	(n/a)	25 776
74	Electrical and Electronic Trades Workers	23 005	36 335	(n/a)
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	(n/a)	(n/a)	(n/a)
8	Plant and Machine Operators and Assemblers	21 372	27 524	29 515
81	Stationary Plant and Machine Operators	21 991	30 423	35 087
82	Assemblers	17 481	(n/a)	26 286
83	Drivers and Mobile Plant Operators	22 536	27 911	30 094
9	Elementary occupations	14 461	22 052	23 477

91	Cleaners and Helpers	13 020	18 818	19 154
92	Agricultural, Forestry and Fishery Labourers	(n/a)	(n/a)	(n/a)
93	Labourers in Mining, Construction, Manufacturing and Transport	16 022	24 674	25 780
94	Food Preparation Assistants	(n/a)	(n/a)	(n/a)
96	Refuse Workers and Other Elementary Workers	(n/a)	(n/a)	(n/a)
	TOTAL - private sector Karlovy Vary Region	**22 241**	**30 627**	**32 031**

Source: ISPV.

Table 3.23 shows average wages in the private sector, received in individual jobs in the Karlovy Vary Region. As assumed, the highest average wages were received by managers (66,660 CZK in 2020), the lowest by those working in elementary occupations (23 477 CZK). The following tables compare data over time and with the nationwide average.

Table 3.24 compares data over time; for the 2014–2019 period, the data was converted to an average annual growth rate, using geometric mean. Overall increase values serve as the basis for comparison—for the 2014–2019 period, the average annual increase amounted to 6.6 %; in 2020 the increase was 4.6 %. Over the 2014–2019 period, the average wages of managers and services and sales workers in the private sector saw a slightly above-average growth (+ 7.9 % and + 9.1 %, respectively), as did elementary occupations (+8.8 %). Looking at the two-digit classification, we can see that a high growth was experienced by those working in personal services (+ 9.4 %) and health associate professionals (+8.3 %). In 2020, an above-average growth was recorded regarding wages received by stationary plant and machinery operators (+ 7.2 %) and those working in elementary occupations (+7.2 %).

Table 3.24 Development of average wages 2014–2020, private sector (annual average growth for 2014–2019), Karlovy Vary Region

		2019/2014	2020/2019
1	Managers	1,079	1,045
11	Chief Executives, Senior Officials and Legislators	(n/a)	(n/a)
12	Administrative and Commercial Managers	1,025	1,043
13	Production and Specialized Services Managers	1,112	1,073
14	Hospitality, Retail, and Other Service Managers	(n/a)	1,056
2	Professionals	1,063	1,036
21	Science and Engineering Professionals	1,090	1,007
22	Health Professionals	1,047	1,007
23	Teaching Professionals	(n/a)	(n/a)
24	Business and Administration Professionals	1,042	(n/a)
25	Information and Communications Technology Professionals	(n/a)	(n/a)
26	Legal, Social, and Cultural Professionals	(n/a)	1,044
3	Technicians and Associate Professionals	1,060	1,022
31	Science and Engineering Associate Professionals	1,055	1,045

32	Health Associate Professionals	1,083	1,025
33	Business and Administration Associate Professionals	1,040	1,011
34	Legal, Social, Cultural and Related Associate Professionals	1,074	(n/a)
35	Information and Communications Technicians	(n/a)	(n/a)
4	Clerks	1,059	1,052
41	General and Keyboard Clerks	1,072	1,069
42	Customer Services Clerks	1,066	1,013
43	Numerical and Material Recording Clerks	1,057	1,062
44	Other Clerical Support Workers	1,036	1,102
5	Services and Sales Workers	1,091	1,030
51	Personal Services Workers	1,094	1,004
52	Sales Workers	1,090	1,036
53	Personal Care Workers	(n/a)	(n/a)
54	Protective Services Workers	1,066	1,131
6	Skilled Agricultural, Forestry, and Fishing Workers	(n/a)	(n/a)
61	Market-oriented Skilled Agricultural Workers	(n/a)	(n/a)
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	1,074	1,059
7	Craft and Related Trades Workers	1,075	1,038
71	Building and Related Trades Workers (excluding Electricians)	(n/a)	(n/a)
72	Metal, Machinery and Related Trades Workers	1,070	1,030
73	Handicraft and Printing Workers	(n/a)	(n/a)
74	Electrical and Electronic Trades Workers	1,096	(n/a)
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	(n/a)	(n/a)
8	Plant and Machine Operators and Assemblers	1,052	1,072
81	Stationary Plant and Machine Operators	1,067	1,153
82	Assemblers	(n/a)	(n/a)
83	Drivers and Mobile Plant Operators	1,044	1,078
9	Elementary occupations	1,088	1,065
91	Cleaners and Helpers	1,076	1,018
92	Agricultural, Forestry and Fishery Labourers	(n/a)	(n/a)
93	Labourers in Mining, Construction, Manufacturing and Transport	1,090	1,045
94	Food Preparation Assistants	(n/a)	(n/a)
96	Refuse Workers and Other Elementary Workers	(n/a)	(n/a)
	TOTAL—private sector Karlovy Vary Region	**1,066**	**1,046**

Source: ISPV, author's calculations

Table 3.25 Differences in earnings by individual professions, private sector, Karlovy Vary Region compared to Czechia

		2014	2019	2020
1	Managers	0,702	0,768	0,764
11	Chief Executives, Senior Officials and Legislators	(n/a)	(n/a)	(n/a)
12	Administrative and Commercial Managers	0,801	0,733	0,733

13	Production and Specialized Services Managers	0,724	0,898	0,908
14	Hospitality, Retail, and Other Service Managers	(n/a)	0,890	0,918
2	Professionals	0,831	0,858	0,849
21	Science and Engineering Professionals	0,846	0,983	0,959
22	Health Professionals	1,069	1,013	0,921
23	Teaching Professionals	(n/a)	(n/a)	(n/a)
24	Business and Administration Professionals	0,831	0,779	(n/a)
25	Information and Communications Technology Professionals	(n/a)	(n/a)	(n/a)
26	Legal, Social, and Cultural Professionals	(n/a)	0,783	0,795
3	Technicians and Associate Professionals	0,894	0,899	0,890
31	Science and Engineering Associate Professionals	0,954	0,942	0,969
32	Health Associate Professionals	0,980	1,022	0,936
33	Business and Administration Associate Professionals	0,961	0,891	0,877
34	Legal, Social, Cultural and Related Associate Professionals	1,149	1,170	(n/a)
35	Information and Communications Technicians	(n/a)	(n/a)	(n/a)
4	Clerks	0,928	0,945	0,950
41	General and Keyboard Clerks	0,863	0,955	0,979
42	Customer Services Clerks	0,930	0,977	0,958
43	Numerical and Material Recording Clerks	0,974	0,966	0,976
44	Other Clerical Support Workers	0,897	0,822	0,851
5	Services and Sales Workers	1,011	1,047	1,012
51	Personal Services Workers	1,088	1,121	1,091
52	Sales Workers	0,959	0,989	0,982
53	Personal Care Workers	0,957	(n/a)	0,910
54	Protective Services Workers	1,117	1,064	1,085
6	Skilled Agricultural, Forestry, and Fishing Workers	(n/a)	(n/a)	(n/a)
61	Market-oriented Skilled Agricultural Workers	(n/a)	(n/a)	(n/a)
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	1,113	1,192	1,195
7	Craft and Related Trades Workers	0,929	0,971	0,980
71	Building and Related Trades Workers (excluding Electricians)	(n/a)	(n/a)	(n/a)
72	Metal, Machinery and Related Trades Workers	0,952	0,965	0,974
73	Handicraft and Printing Workers	0,776	(n/a)	0,879
74	Electrical and Electronic Trades Workers	0,888	1,055	(n/a)
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	(n/a)	(n/a)	(n/a)
8	Plant and Machine Operators and Assemblers	0,978	0,925	0,953
81	Stationary Plant and Machine Operators	0,954	0,987	1,097
82	Assemblers	0,832	(n/a)	0,870
83	Drivers and Mobile Plant Operators	1,054	0,945	0,978
9	Elementary occupations	0,918	1,044	1,046
91	Cleaners and Helpers	1,027	1,084	1,015
92	Agricultural, Forestry and Fishery Labourers	(n/a)	(n/a)	(n/a)

93	Labourers in Mining, Construction, Manufacturing and Transport	0,921	1,068	1,052
94	Food Preparation Assistants	(n/a)	(n/a)	(n/a)
96	Refuse Workers and Other Elementary Workers	(n/a)	(n/a)	(n/a)
	TOTAL - private sector Karlovy Vary Region	**0,830**	**0,854**	**0,851**

Source: ISPV, author's calculations

Table 3.25 shows a detailed comparison of earnings in the Karlovy Vary Region with the nationwide average. Overall, earnings in the Karlovy Vary Region were lower by ca 15 %, a result not only of remuneration differences, but also of differences in workforce structure. Using educational structure as an example, this was demonstrated in the previous chapter. In the private sector, wages of managers in the Karlovy Vary Region were 30 % lower when compared against the Czech average; in 2019 and 2020, this difference dropped to ca 24 %. **This is in line with the findings regarding a marked difference in the remuneration of the university-educated, and in our view may be one of the causes behind the outflow of skilled workers from the Karlovy Vary Region.** In the private sector, wages of professionals were 15–17 % lower; those received by technicians and associate professionals were lower by 10–11 %. With clerks, the differences were smaller (5 to 8 %). Meanwhile, the remuneration of services and sales workers exceeded the nationwide average. With craft and related trades workers, the differences decreased to 2 % in 2020; with stationary plant and machine operators, they constituted ca 3–8 %. In 2014, those working in elementary occupations earned 8.2 % less on average while in 2019 and 2020 they received an above-average remuneration when compared to the Czech average (4–5 % higher).

Table 3.26 shows numbers of people in individual jobs. Notice that between 2014 and 2020 the number of managers dropped by 40 %; a decrease in production and specialized service managers contributed the most to this as it dropped by about half. The number of stationary plant and machine operators decreased slightly. From 2014 to 2019, the number of elementary occupation workers increased; in 2020, there was a year-on-year decline.

Table 3.27 compares data with the nationwide information.

Table 3.26 Workforce structure by job, private sector, Karlovy Vary Region, thous. of people

		2014	2019	2020
1	Managers	2,4	1,9	1,5
11	Chief Executives, Senior Officials and Legislators	0,2	0,1	0,1
12	Administrative and Commercial Managers	0,4	0,4	0,3
13	Production and Specialized Services Managers	1,2	0,6	0,6
14	Hospitality, Retail, and Other Service Managers	0,6	0,7	0,5

2	Professionals	3,0	3,4	3,3
21	Science and Engineering Professionals	0,7	0,7	0,6
22	Health Professionals	1,3	1,8	1,8
23	Teaching Professionals	0,0	0,0	0,0
24	Business and Administration Professionals	0,4	0,6	0,6
25	Information and Communications Technology Professionals	0,2	0,1	0,2
26	Legal, Social, and Cultural Professionals	0,3	0,2	0,2
3	Technicians and Associate Professionals	11,3	12,0	11,3
31	Science and Engineering Associate Professionals	3,9	3,8	3,4
32	Health Associate Professionals	3,4	3,5	3,3
33	Business and Administration Associate Professionals	3,4	4,1	4,2
34	Legal, Social, Cultural and Related Associate Professionals	0,2	0,3	0,3
35	Information and Communications Technicians	0,4	0,2	0,2
4	Clerks	4,8	5,6	5,2
41	General and Keyboard Clerks	1,2	1,7	1,6
42	Customer Services Clerks	1,6	2,0	1,7
43	Numerical and Material Recording Clerks	1,7	1,5	1,5
44	Other Clerical Support Workers	0,4	0,4	0,3
5	Services and Sales Workers	10,3	10,3	8,7
51	Personal Services Workers	4,5	3,6	2,8
52	Sales Workers	4,2	4,8	4,7
53	Personal Care Workers	0,8	1,2	0,8
54	Protective Services Workers	0,9	0,6	0,4
6	Skilled Agricultural, Forestry, and Fishing Workers	0,5	0,4	0,3
61	Market-oriented Skilled Agricultural Workers	0,3	0,3	0,2
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	0,1	0,1	0,1
7	Craft and Related Trades Workers	11,5	10,4	10,2
71	Building and Related Trades Workers (excluding Electricians)	1,4	1,5	1,4
72	Metal, Machinery and Related Trades Workers	4,8	5,3	5,4
73	Handicraft and Printing Workers	0,7	0,7	0,8
74	Electrical and Electronic Trades Workers	2,1	1,4	1,7
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	2,5	1,5	0,9
8	Plant and Machine Operators and Assemblers	16,6	15,0	14,0
81	Stationary Plant and Machine Operators	6,7	3,6	2,4
82	Assemblers	3,1	6,0	5,3
83	Drivers and Mobile Plant Operators	6,8	5,4	6,3
9	Elementary occupations	4,9	6,6	5,4
91	Cleaners and Helpers	1,6	1,8	1,2
92	Agricultural, Forestry and Fishery Labourers	0,1	0,1	0,0
93	Labourers in Mining, Construction, Manufacturing and Transport	2,3	3,6	3,3
94	Food Preparation Assistants	0,4	0,5	0,3

96	Refuse Workers and Other Elementary Workers	0,6	0,6	0,5
	TOTAL—private sector Karlovy Vary Region	68,3	**65,6**	**60,0**

Source: ISPV.

Table 3.27 Differences in workforce structure by jobs, private sector, Karlovy Vary Region compared to Czechia, percentage points

		2014	2019	2020
1	Managers	-0,9	-1,0	-1,4
11	Chief Executives, Senior Officials and Legislators	-0,1	0,0	-0,1
12	Administrative and Commercial Managers	-0,7	-0,5	-0,7
13	Production and Specialized Services Managers	-0,2	-0,9	-0,9
14	Hospitality, Retail, and Other Service Managers	0,1	0,5	0,3
2	Professionals	-5,9	-6,5	-6,8
21	Science and Engineering Professionals	-1,9	-2,2	-2,4
22	Health Professionals	0,9	1,3	1,5
23	Teaching Professionals	-1,0	-1,1	-1,1
24	Business and Administration Professionals	-2,2	-2,0	-2,1
25	Information and Communications Technology Professionals	-1,4	-2,0	-2,1
26	Legal, Social, and Cultural Professionals	-0,4	-0,6	-0,7
3	Technicians and Associate Professionals	-3,2	-2,3	-2,3
31	Science and Engineering Associate Professionals	-1,1	-1,6	-1,9
32	Health Associate Professionals	2,9	3,4	3,4
33	Business and Administration Associate Professionals	-4,2	-3,2	-2,7
34	Legal, Social, Cultural and Related Associate Professionals	-0,2	-0,1	-0,1
35	Information and Communications Technicians	-0,5	-0,8	-1,1
4	Clerks	-1,7	-0,5	-0,4
41	General and Keyboard Clerks	-1,2	-0,4	-0,4
42	Customer Services Clerks	0,7	1,3	1,2
43	Numerical and Material Recording Clerks	-1,0	-1,3	-1,1
44	Other Clerical Support Workers	-0,1	-0,1	-0,1
5	Services and Sales Workers	3,0	3,4	3,0
51	Personal Services Workers	3,4	2,1	1,8
52	Sales Workers	-0,5	1,0	1,6
53	Personal Care Workers	0,5	0,9	0,2
54	Protective Services Workers	-0,4	-0,6	-0,6
6	Skilled Agricultural, Forestry, and Fishing Workers	-0,4	-0,3	-0,5
61	Market-oriented Skilled Agricultural Workers	-0,5	-0,3	-0,5
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	0,1	0,1	0,1
7	Craft and Related Trades Workers	0,4	0,8	2,1
71	Building and Related Trades Workers (excluding Electricians)	-0,7	-0,2	-0,3
72	Metal, Machinery and Related Trades Workers	-1,6	0,5	1,4
73	Handicraft and Printing Workers	0,4	0,4	0,7
74	Electrical and Electronic Trades Workers	1,0	0,1	0,9
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	1,2	0,0	-0,6
8	Plant and Machine Operators and Assemblers	6,3	2,9	3,7

81	Stationary Plant and Machine Operators	3,8	-0,5	-1,7
82	Assemblers	0,4	4,3	4,1
83	Drivers and Mobile Plant Operators	2,0	-0,9	1,3
9	Elementary occupations	1,4	3,5	2,6
91	Cleaners and Helpers	0,7	0,8	0,1
92	Agricultural, Forestry and Fishery Labourers	-0,1	0,0	-0,2
93	Labourers in Mining, Construction, Manufacturing and Transport	0,0	1,9	2,0
94	Food Preparation Assistants	0,4	0,5	0,3
96	Refuse Workers and Other Elementary Workers	0,4	0,4	0,3
	TOTAL	**0,0**	**0,0**	**0,0**

Source: ISPV.

Table 3.27 compares differences in workforce structure in the private sector in the Karlovy Vary Region and in Czechia as a whole, using percentages. The biggest differences are evident in the category of professionals (their numbers in the Karlovy Vary Region are lower by 6–7 %) and technicians and associate professionals (minus 2–3 %). Conversely, services and sales workers (+3–3.5 %), stationery plant and machinery operators (+3–6 %) and elementary occupations (+1.5–3.5 %) contribute a higher share of employment.

While the ratio of manual to non-manual workers in Czechia as a whole is ca 50:50, in the Karlovy Vary Region it is ca 2:1. This is also in line with a different gross value added structure, described in the tables in Annexe 4—Tables P.11 and P.12; there is an evident large representation of public administration (+6.58 %) and real estate activities (+3.32 %).

Let us now similarly look at the public sector. Naturally, some industries are represented marginally and thus the relevant data is not provided in the tables.

Table 3.28 summarises average earnings by occupation type in the Karlovy Vary Region. Once more, as was the case with the private sector, managers are remunerated the best (63,310 CZK in 2020 on average), followed by professionals (43,697 CZK in 2020) while those working in elementary occupations are remunerated the worst (21,120 CZK in 2020). Some entries are missing from the tables as, considering the region's size, certain categories and subcategories lack sufficient findings to facilitate sufficiently accurate, reliable estimates. Table 3.29 compares data over time, Table 3.30 in space (with the nationwide average).

Table 3.28 Average earnings by occupation, public sector, CZK, Karlovy Vary Region

		2014	2019	2020
1	Managers	41 716	57 716	63 310
11	Clerks, Chief Executives, Senior Officials and Legislators	50 357	70 424	76 001
12	Administrative and Commercial Managers	41 020	57 172	60 584
13	Production and Specialized Services Managers	40 675	56 799	62 698
14	Hospitality, Retail, and Other Service Managers	(n/a)	44 538	(n/a)
2	Professionals	27 616	39 557	43 697
21	Science and Engineering Professionals	27 929	37 095	38 020
22	Health Professionals	40 457	55 737	63 798
23	Teaching Professionals	26 717	38 906	43 175
24	Business and Administration Professionals	28 662	39 599	41 844
25	Information and Communications Technology Professionals	27 672	38 682	40 364
26	Legal, Social, and Cultural Professionals	26 926	36 196	39 259
3	Technicians and Associate Professionals	26 706	38 028	41 264
31	Science and Engineering Associate Professionals	24 188	33 569	36 124
32	Health Associate Professionals	28 190	41 533	46 873
33	Business and Administration Associate Professionals	27 504	38 853	42 034
34	Legal, Social, Cultural and Related Associate Professionals	21 670	33 703	36 943
35	Information and Communications Technicians	25 615	34 873	37 118
4	Clerks	22 829	31 299	33 599
41	General and Keyboard Clerks	20 836	28 613	31 303
42	Customer Services Clerks	19 319	26 058	28 263
43	Numerical and Material Recording Clerks	23 800	33 072	35 355
44	Other Clerical Support Workers	23 766	32 333	34 460
5	Services and Sales Workers	22 061	32 618	35 935
51	Personal Services Workers	16 208	23 767	26 897
52	Sales Workers	(n/a)	26 098	(n/a)
53	Personal Care Workers	18 019	29 685	34 750
54	Protective Services Workers	28 101	41 540	43 556
6	Skilled Agricultural, Forestry, and Fishing Workers	(n/a)	(n/a)	(n/a)
61	Market-oriented Skilled Agricultural Workers	(n/a)	(n/a)	(n/a)
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	(n/a)	(n/a)	(n/a)
7	Craft and Related Trades Workers	20 093	27 937	30 110
71	Building and Related Trades Workers (excluding Electricians)	(n/a)	27 530	29 671
72	Metal, Machinery and Related Trades Workers	20 908	28 499	30 349
73	Handicraft and Printing Workers	(n/a)	(n/a)	(n/a)
74	Electrical and Electronic Trades Workers	(n/a)	(n/a)	(n/a)
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	(n/a)	(n/a)	(n/a)
8	Plant and Machine Operators and Assemblers	22 879	26 146	28 460

81	Stationary Plant and Machine Operators	17 489	24 149	27 348
83	Drivers and Mobile Plant Operators	24 232	26 950	28 928
9	Elementary occupations	12 185	18 606	21 120
91	Cleaners and Helpers	12 728	18 169	20 900
92	Agricultural, Forestry and Fishery Labourers	(n/a)	(n/a)	(n/a)
93	Labourers in Mining, Construction, Manufacturing and Transport	14 003	(n/a)	(n/a)
94	Food Preparation Assistants	13 215	18 908	21 927
96	Refuse Workers and Other Elementary Workers	10 874	19 298	21 034
	TOTAL - public sector Karlovy Vary Region	**25 487**	**36 474**	**39 930**

Source: ISPV

Development over time can be compared with the basis for comparison, i.e. a 7.4 % annual average growth over the 2014–2019 period and a 9.5 % year-on-year growth in 2020. In this respect, we can state that the development of most jobs approached the average. Regarding deviations from this, on one hand there are stationery plant and machine operators where development over the 2014–2019 period was slower by ca 5 % annually; on the other there are health associate professionals who saw a growth of almost 13 % in 2020. In 2020, the situation of those working in elementary occupations also improved (+13.5 %).

Table 3.29 Development of average wages in the public sector 2014–2020, public sector (annual average growth for 2014–2019), Karlovy Vary Region

		2019/2014	2020/2019
1	Managers	1,067	1,097
11	Clerks, Chief Executives, Senior Officials and Legislators	1,069	1,079
12	Administrative and Commercial Managers	1,069	1,060
13	Production and Specialized Services Managers	1,069	1,104
14	Hospitality, Retail, and Other Service Managers	(n/a)	(n/a)
2	Professionals	1,075	1,105
21	Science and Engineering Professionals	1,058	1,025
22	Health Professionals	1,066	1,145
23	Teaching Professionals	1,078	1,110
24	Business and Administration Professionals	1,067	1,057
25	Information and Communications Technology Professionals	1,069	1,043
26	Legal, Social, and Cultural Professionals	1,061	1,085
3	Technicians and Associate Professionals	1,073	1,085
31	Science and Engineering Associate Professionals	1,068	1,076
32	Health Associate Professionals	1,081	1,129
33	Business and Administration Associate Professionals	1,072	1,082
34	Legal, Social, Cultural and Related Associate Professionals	1,092	1,096
35	Information and Communications Technicians	1,064	1,064
4	Clerks	1,065	1,073

41	General and Keyboard Clerks	1,065	1,094
42	Customer Services Clerks	1,062	1,085
43	Numerical and Material Recording Clerks	1,068	1,069
44	Other Clerical Support Workers	1,064	1,066
5	Services and Sales Workers	1,081	1,102
51	Personal Services Workers	1,080	1,132
52	Sales Workers	(n/a)	(n/a)
53	Personal Care Workers	1,105	1,171
54	Protective Services Workers	1,081	1,049
6	Skilled Agricultural, Forestry, and Fishing Workers	(n/a)	(n/a)
61	Market-oriented Skilled Agricultural Workers	(n/a)	(n/a)
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	(n/a)	(n/a)
7	Craft and Related Trades Workers	1,068	1,078
71	Building and Related Trades Workers (excluding Electricians)	(n/a)	1,078
72	Metal, Machinery and Related Trades Workers	1,064	1,065
73	Handicraft and Printing Workers	(n/a)	(n/a)
74	Electrical and Electronic Trades Workers	(n/a)	(n/a)
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	(n/a)	(n/a)
8	Plant and Machine Operators and Assemblers	1,027	1,088
81	Stationary Plant and Machine Operators	1,067	1,132
83	Drivers and Mobile Plant Operators	1,021	1,073
9	Elementary occupations	1,088	1,135
91	Cleaners and Helpers	1,074	1,150
92	Agricultural, Forestry and Fishery Labourers	(n/a)	(n/a)
93	Labourers in Mining, Construction, Manufacturing and Transport	(n/a)	(n/a)
94	Food Preparation Assistants	1,074	1,160
96	Refuse Workers and Other Elementary Workers	1,122	1,090
	TOTAL - public sector Karlovy Vary Region	**1,074**	**1,095**

Source: ISPV, author's calculations.

Table 3.30 compares earnings in individual occupations with nationwide averages. The earnings of managers are lower by ca 6.5 %, of professionals by ca 9 %, of technicians and associate professionals by 5–7 %, of clerks by 5.5 %. Conversely, services and sales workers receive a better remuneration (+4–7 %) while craft and related trades workers approach the average. In the public sector, the remuneration of those working in elementary occupations is worse by ca 5 %. The condition of stationery plant and machine operators is the worst as the wages of these workers are 14.3 % lower when compared against the average, a situation which grew much worse since 2014 (in 2014, workers in the Karlovy Vary Region fared better than the Czech average). Overall, workers in the public sector lag behind the nationwide average by 5–7 %.

Table 3.30 Differences in earnings by individual professions, public sector, Karlovy Vary Region compared to Czechia

		2014	2019	2020
1	Managers	0,933	0,931	0,934
11	Clerks, Chief Executives, Senior Officials and Legislators	0,991	0,953	0,973
12	Administrative and Commercial Managers	0,866	0,908	0,899
13	Production and Specialized Services Managers	0,941	0,938	0,934
14	Hospitality, Retail, and Other Service Managers	(n/a)	0,946	(n/a)
2	Professionals	0,914	0,908	0,916
21	Science and Engineering Professionals	0,881	0,870	0,836
22	Health Professionals	0,930	0,875	0,870
23	Teaching Professionals	0,998	0,988	0,999
24	Business and Administration Professionals	0,851	0,864	0,868
25	Information and Communications Technology Professionals	0,865	0,868	0,853
26	Legal, Social, and Cultural Professionals	0,980	0,919	0,935
3	Technicians and Associate Professionals	0,955	0,947	0,931
31	Science and Engineering Associate Professionals	0,959	0,966	0,964
32	Health Associate Professionals	0,986	0,940	0,887
33	Business and Administration Associate Professionals	0,960	0,962	0,964
34	Legal, Social, Cultural and Related Associate Professionals	0,945	1,002	0,997
35	Information and Communications Technicians	0,974	0,946	0,935
4	Clerks	0,944	0,946	0,943
41	General and Keyboard Clerks	0,911	0,896	0,907
42	Customer Services Clerks	0,942	0,919	0,918
43	Numerical and Material Recording Clerks	0,992	0,984	0,963
44	Other Clerical Support Workers	0,918	0,939	0,939
5	Services and Sales Workers	1,075	1,072	1,042
51	Personal Services Workers	0,995	0,995	0,997
52	Sales Workers	(n/a)	0,987	(n/a)
53	Personal Care Workers	0,960	1,008	0,999
54	Protective Services Workers	0,980	0,998	0,971
6	Skilled Agricultural, Forestry, and Fishing Workers	(n/a)	(n/a)	(n/a)
61	Market-oriented Skilled Agricultural Workers	(n/a)	(n/a)	(n/a)
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	(n/a)	(n/a)	(n/a)
7	Craft and Related Trades Workers	0,994	0,995	0,981
71	Building and Related Trades Workers (excluding Electricians)	(n/a)	0,997	0,999
72	Metal, Machinery and Related Trades Workers	1,022	1,015	0,988
73	Handicraft and Printing Workers	(n/a)	(n/a)	(n/a)
74	Electrical and Electronic Trades Workers	(n/a)	(n/a)	(n/a)

75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	(n/a)	(n/a)	(n/a)
8	Plant and Machine Operators and Assemblers	1,066	0,876	0,857
81	Stationary Plant and Machine Operators	1,013	0,977	0,961
83	Drivers and Mobile Plant Operators	1,071	0,865	0,841
9	Elementary occupations	0,945	0,962	0,954
91	Cleaners and Helpers	0,992	0,969	0,960
92	Agricultural, Forestry and Fishery Labourers	(n/a)	(n/a)	(n/a)
93	Labourers in Mining, Construction, Manufacturing and Transport	0,891	(n/a)	(n/a)
94	Food Preparation Assistants	0,978	0,926	0,941
96	Refuse Workers and Other Elementary Workers	0,863	0,964	0,944
	TOTAL—public sector Karlovy Vary Region	**0,951**	**0,943**	**0,938**

Source: ISPV, author's calculations.

Table 3.31 shows the development of workforce structure in the public sector in the Karlovy Vary Region. The structure is stable, with an increase in the number of workers (by 0.5 thous. of people) evident almost exclusively in the service and sales workers category, specifically regarding personal care workers in education, health care, and related areas.

Table 3.32 compares the structure of workforce in the public sector with the national workforce structure. Managers are highly represented, as are clerks and service and sales workers (3.5 % difference when compared with the nationwide average); the representation of professionals is not so noticeable. Elementary occupations workers enjoy a slightly higher representation, too.

Table 3.31 Workforce structure by job, public sector, Karlovy Vary Region, thous. of people

		2014	2019	2020
1	Managers	0,8	0,8	0,8
11	Clerks, Chief Executives, Senior Officials and Legislators	0,1	0,1	0,1
12	Administrative and Commercial Managers	0,2	0,2	0,2
13	Production and Specialized Services Managers	0,5	0,5	0,5
14	Hospitality, Retail, and Other Service Managers	0,0	0,0	0,0
2	Professionals	4,3	4,5	4,5
21	Science and Engineering Professionals	0,1	0,1	0,1
22	Health Professionals	0,2	0,2	0,2
23	Teaching Professionals	3,4	3,5	3,5
24	Business and Administration Professionals	0,3	0,3	0,3
25	Information and Communications Technology Professionals	0,0	0,0	0,0
26	Legal, Social, and Cultural Professionals	0,3	0,3	0,3
3	Technicians and Associate Professionals	4,2	4,3	4,2
31	Science and Engineering Associate Professionals	0,2	0,3	0,3
32	Health Associate Professionals	0,2	0,2	0,2
33	Business and Administration Associate Professionals	3,2	3,2	3,1

34	Legal, Social, Cultural and Related Associate Professionals	0,4	0,5	0,5
35	Information and Communications Technicians	0,1	0,1	0,1
4	Clerks	1,0	1,1	1,1
41	General and Keyboard Clerks	0,2	0,2	0,2
42	Customer Services Clerks	0,1	0,1	0,1
43	Numerical and Material Recording Clerks	0,1	0,2	0,2
44	Other Clerical Support Workers	0,6	0,7	0,7
5	Services and Sales Workers	2,5	3,0	3,0
51	Personal Services Workers	0,9	0,9	0,9
52	Sales Workers	0,0	0,0	0,0
53	Personal Care Workers	0,5	0,9	0,9
54	Protective Services Workers	1,2	1,2	1,2
6	Skilled Agricultural, Forestry, and Fishing Workers	0,0	0,0	0,0
61	Market-oriented Skilled Agricultural Workers	0,0	0,0	0,0
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	0,0	0,0	0,0
7	Craft and Related Trades Workers	0,1	0,1	0,1
71	Building and Related Trades Workers (excluding Electricians)	0,0	0,0	0,0
72	Metal, Machinery and Related Trades Workers	0,0	0,1	0,1
73	Handicraft and Printing Workers	0,0	0,0	0,0
74	Electrical and Electronic Trades Workers	0,0	0,0	0,0
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	0,0	0,0	0,0
8	Plant and Machine Operators and Assemblers	0,3	0,2	0,2
81	Stationary Plant and Machine Operators	0,1	0,1	0,1
83	Drivers and Mobile Plant Operators	0,2	0,1	0,1
9	Elementary occupations	1,1	1,0	1,0
91	Cleaners and Helpers	0,6	0,6	0,6
92	Agricultural, Forestry and Fishery Labourers	0,0	0,0	0,0
93	Labourers in Mining, Construction, Manufacturing and Transport	0,0	0,0	0,0
94	Food Preparation Assistants	0,1	0,1	0,1
96	Refuse Workers and Other Elementary Workers	0,4	0,3	0,3
	TOTAL - public sector Karlovy Vary Region	**14,5**	**15,1**	**15,1**

Source: ISPV, author's calculations.

Table 3.32 Differences in workforce structure by jobs, public sector, Karlovy Vary Region compared to Czechia, percentage points

		2014	2019	2020
1	Managers	0,8	0,7	0,7
11	Clerks, Chief Executives, Senior Officials and Legislators	0,0	0,0	0,0
12	Administrative and Commercial Managers	0,3	0,2	0,2
13	Production and Specialized Services Managers	0,5	0,5	0,5
14	Hospitality, Retail, and Other Service Managers	0,0	0,1	0,0

2	Professionals	-1,8	-2,2	-2,5
21	Science and Engineering Professionals	-0,7	-0,7	-0,7
22	Health Professionals	-2,9	-2,8	-2,7
23	Teaching Professionals	4,1	3,2	3,1
24	Business and Administration Professionals	-1,2	-1,3	-1,2
25	Information and Communications Technology Professionals	-0,3	-0,3	-0,3
26	Legal, Social, and Cultural Professionals	-0,9	-0,4	-0,7
3	Technicians and Associate Professionals	0,3	0,2	0,5
31	Science and Engineering Associate Professionals	-0,2	0,0	0,0
32	Health Associate Professionals	-3,9	-3,4	-3,2
33	Business and Administration Associate Professionals	3,4	2,4	2,4
34	Legal, Social, Cultural and Related Associate Professionals	1,0	1,1	1,3
35	Information and Communications Technicians	0,0	0,0	0,0
4	Clerks	1,5	1,5	1,6
41	General and Keyboard Clerks	-0,4	-0,6	-0,6
42	Customer Services Clerks	0,1	0,1	0,1
43	Numerical and Material Recording Clerks	0,1	0,2	0,2
44	Other Clerical Support Workers	1,8	1,8	1,9
5	Services and Sales Workers	2,0	3,3	3,4
51	Personal Services Workers	0,2	0,2	0,2
52	Sales Workers	0,0	0,0	0,0
53	Personal Care Workers	-2,0	-0,8	-0,7
54	Protective Services Workers	3,9	3,9	4,0
6	Skilled Agricultural, Forestry, and Fishing Workers	-0,1	-0,2	-0,2
61	Market-oriented Skilled Agricultural Workers	-0,1	-0,1	-0,1
62	Market-oriented Skilled Forestry, Fishery and Hunting Workers	0,0	0,0	0,0
7	Craft and Related Trades Workers	-0,5	-0,3	-0,3
71	Building and Related Trades Workers (excluding Electricians)	-0,1	-0,1	-0,1
72	Metal, Machinery and Related Trades Workers	-0,2	0,0	0,0
73	Handicraft and Printing Workers	0,0	0,0	0,0
74	Electrical and Electronic Trades Workers	-0,1	0,0	0,0
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	-0,1	-0,1	-0,1
8	Plant and Machine Operators and Assemblers	0,0	-0,4	-0,4
81	Stationary Plant and Machine Operators	0,0	0,0	0,1
83	Drivers and Mobile Plant Operators	0,1	-0,4	-0,4
9	Elementary occupations	0,9	0,6	0,6
91	Cleaners and Helpers	0,5	0,4	0,4
92	Agricultural, Forestry and Fishery Labourers	0,0	0,0	0,0
93	Labourers in Mining, Construction, Manufacturing and Transport	0,0	0,0	-0,1
94	Food Preparation Assistants	0,2	0,2	0,2
96	Refuse Workers and Other Elementary Workers	0,2	0,0	0,0

	TOTAL	**0,0**	**0,0**	**0,0**

Source: ISPV, author's calculations.

Conclusions and recommendations

The submitted study has three parts. The first part presents a brief macroeconomic overview as a basic framework for subsequent analyses; the second part details the development of earnings in the private and public sector by various classification criteria (age, gender, place of work, educational attainment, type of occupation, citizenship, or economic sector). In a way, the third part constitutes a case study of remuneration in the Karlovy Vary Region, detailing both standards of remuneration and the trends in its development, and comparisons with nationwide averages. The first part is based on the national accounts compiled by the Czech Statistical Office while the second and third parts rely on the Average Earnings Information Systems. In terms of time, the years 2014, 2019, and 2020 were selected as the former two bookend a period of strong, robust economic growth while the latter is the first year of the covid-19 pandemic, with adopted protective measures strongly impacting economic structure and performance.
In our view, the study leads to the following key conclusions and recommendations.

- A whole range of signals suggests that the Czech economy began to cool down even before the onset of the covid-19 pandemic. We recommend this to be taken into account when formulating economic and social policy in the post-covid period. In other words, not all of the issues faced by the Czech economy have been caused by the pandemic and adopted measures, and thus they may persist even after the pandemic is over;
- The Czech economy's strong regional divergence is still ongoing. Regardless of covid-19, the Karlovy Vary Region has been increasingly lagging behind in recent years. We recommend to keep focusing on this problem and analyse the factors which contribute to this regional divergence;
- On request of the ordering party, the study was completed in June 2021, i.e. before a variety of statistical data could be published by the Czech Statistical Office on June 29, 2021. Thus, the study uses a lot of preliminary, or even incomplete data. We recommend our key conclusions to be verified, using newly published information;
- There are persisting remuneration differences based on age and gender. On a positive note, they have been decreasing over the past six years as the wages of the worst remunerated workers and women in both the private and public sector grew. We recommend to keep paying due attention to this issue and analyse the causes behind these differences;
- Over the past few years, development has been much faster in the public than in the private sector. We recommend to focus on this area, both in terms of a potentially increasing

competitiveness and wage costs in the private sector, and of the sustainability of public finances in the following period;

- On the other hand, the difference in average earnings between the private and public sector can be partly explained by the workforce composition effect. We strictly recommend considering this factor when discussing the development of the relationship between the public and private sector, avoiding simplified and simplifying conclusions;
- Over the past few years, remuneration differences based on educational attainment have been slightly decreasing, especially in regard to the least-educated. We recommend engaging in a sensitive discussion on setting the minimum wage, primarily in respect to the guaranteed wage which affects a non-negligible portion of jobs;
- Regional differences in the remuneration of workers have been decreasing over the past few years. We recommend analysing the causes of differences in the development of added value and earnings;
- Regarding remuneration differences by citizenship, Slovak citizens are quite ahead of the Czech population both in the private and public sector. We recommend analysing the causes behind these differences;
- Wages in the private sector in the Karlovy Vary Region have been slowly converging with the wages received in Czechia as a whole, dropping to 6 % over the past six years. Wages of women in the Karlovy Vary Region are approaching both the nationwide average, and those of men in the Karlovy Vary Region. This convergence of wages has so far had no effect on the convergence of the Karlovy Vary Region in terms of gross value added or the regional gross domestic product. In the public sector, there is no convergence of earnings and the earnings of women even diverge slightly;
- In the private sector in the Karlovy Vary Region, the wage premium for having a university degree is much lower what the nationwide average would assume. While the university-educated in the Karlovy Vary Region lag behind their counterparts in the rest of Czechia rather significantly, the wages of people with secondary education with matura are lower only by ca 8 %. Additionally, there are essentially no differences in the case of those with elementary education and secondary education without matura. In the long term, this can cause an outflow of the university-educated in favour of regions with better earnings while those less-educated will not feel the need to leave the region (e.g. due to cheaper housing);
- We arrive at similar results if we monitor remuneration differences by occupation. We recommend paying great attention to this phenomenon.

Sources

ČSÚ (2021). Databáze ročních národních účtů. www.czso.cz

Fischer, J. a kol. (2019). Základní metody statistického srovnávání. Praha : Nakladatelství Oeconomica, 2019. 88 stran.

Fischer, J., Doseděl, T., Vltavská, K. (2019). Sociální stratifikace v České republice a polarizace české společnosti. Praha : Asociace samostatných odborů – ASO, 2019. 88 s.

Fischer, J. (2020). Role kolektivního vyjednávání na centrální i podnikové úrovni v době digitalizace práce. Praha : Asociace samostatných odborů – ASO, 2020. 112 s.

Hindls, R. a kol. (2018). Statistika v ekonomii. Příbram: Professional Publishing, 2018. ISBN 978-80-88260-09-7.

Hronová, S. a kol. (2019). Národní účetnictví (Od výroby k bohatství). 1. vyd. Praha : Nakladatelství C. H. Beck, 2019. 401 stran.

Informační systém o průměrném výdělku – archiv výsledků šetření.

Košťáková, T. (2019). O složitém jednoduše. Praha : ČSÚ, 2019. 100 stran.

Musil, P., Fischer, J. (2015). Měření výstupu vzdělávacích služeb. Politická ekonomie [online]. 2015, roč. 63, č. 2, s. 167–184. ISSN 0032-3233. DOI: 10.18267/j.polek.995.

Palíšková, M. (2019). Diskriminace na trhu práce a kritická analýza fungování nástrojů používaných pro zmírnění diskriminace. Praha, 2019.

Annexes

Annexe 1—Data source description[1]

This chapter uses an extensive structural earnings survey as a data source, commissioned by the Ministry of Labour and Social Affairs and conducted by TREXIMA, spol. s r. o.

The survey is done at the place of employers who supply records both on behalf of employers and employees, containing these key items[2]:

- Employer's identification (company registration number, name of business, address);
- Territorial unit code;
- Total clearance of gross wages, with the premium and bonus totals listed separately;
- Total number of hours worked, unworked, and overtime hours;
- Average number of employees;
- Other personal costs (agreements to complete a job and perform work) and the number of hours worked on the basis of these agreements.

Employees' records contain these key items[3]:

- Unique natural person code;
- Year of birth;
- Gender;
- Citizenship;
- Educational attainment;
- Disability pension type;
- Field of education, including the school's code;
- Place of work;
- Job position code;
- Employment classification code;
- Working hours code;
- Employment term at the stated employer's;
- Number of hours worked, unworked, and overtime hours (in different classifications);

[1] Partially using the text of Fischer, Doseděl, Vltavská (2019).

[2] Extract listed only. The complete description is available on https://ispv.cz/getdoc/7fa806f6-292b-489b-a067-cfd4f1f22c5b/Popis-polozek-MI.aspx. Quoted on June 25, 2021.

[3] Extract listed only. The complete description is available on https://ispv.cz/getdoc/6df66f3c-d04e-4dfc-96ce-9d2507cb46a8/Popis-polozek-MP.aspx. Quoted on June 25, 2021.

- Cleared wages (divided into the basic wage, bonuses, premiums and rewards, compensations for hours unworked);
- Average earnings as a basis for calculating a wage compensation.

Data is being surveyed separately for the private sector (employer remunerating employees as per Section 109, Paragraph 2, Labour Code) **and for the public sector** (employers remunerating employees as per Section 109, Paragraph 3, Labour Code).

In the private sector, businesses are selected via a single-stage stratified process where selection areas (strata) are defined by the institutional sector, size, industry, and region. Businesses with 250 and more employees are examined comprehensively within the sector of non-financial businesses and households; businesses with 1 to 249 employees selectively, with the latter's representation ranging from 1.2 % to 15 % by size (i.e. larger businesses are more likely to be included). In other sectors (finance, government, and NGOs), comprehensive examination is done for businesses with as few employees as 50 or 65.[4]

In the public sector, data is ascertained comprehensively for all employees remunerated in the public sector.

In the private sector, data is published quarterly; in the public sector biannually. However, data from the Average Earnings Information System is not directly comparable with the wage statistics of the Czech Statistical Office based on corporate reporting[5]. **Thus, earnings listed in this chapter cannot be compared with the indicator of average wages in the national economy**, used primarily in various documents of legislative and non-legislative nature. For instance, this indicator's values are used as a basis for calculating minimum public health insurance or social insurance payments by the self-employed. Similarly, the indicator of average wages in the national economy is used for calculating pension adjustments.

Outcomes of ISPV-based examination allow us to analyse earnings, using a classification based not only on corporate characteristics, but also on the personal characteristics of employees. Moreover, they allow us to conduct various structural analyses, including those concerning earnings structure (basic wages, bonuses, rewards, compensations), with the option of comparing structures over time or cross-sectionally by individual characteristics. Last but not least, they make it possible to monitor wage differentiation.

[4] For more details see https://www.ispv.cz/cz/Vysledky-setreni/Metodika.aspx#odst1. Quoted on June 25, 2021.

[5] Main differences are described on https://www.ispv.cz/getfile/cdd634ea-d483-4d6e-9b2b-f8b244b2b3d6/www_CSU_ISPV_2011.aspx?disposition=attachment, quoted on June 25, 2021.

Data on incomes (not only from employment) can be also sourced from selected household surveys, be it the Labour Force Survey or the Living Conditions Survey (a part of the Pan-European EU-SILC survey). Data from these sources can be monitored along with other socio-economic-demographic indicators of a given household; on the other hand, the selection set is significantly smaller and there is a possibility of non-sampling errors due to an unwillingness or impossibility of providing income data to CSO inquirers.

Annexe 2—Data tables used as a source for charts in Chapter 1

Table P.1 GDP development in constant prices in 2015, millions of CZK

Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Production	9225762	9934290	10118909	9298076	9725227	9983549	9758838	9754077	10115629	10634751	10917190	11564120	12036292	12299290	11589945
Intermediate consumption	5623843	6139418	6189422	5579240	5895660	6086153	5896855	5892780	6142380	6469577	6647958	7073841	7395050	7556068	7100235
Gross value added	3599127	3789407	3924814	3717603	3829223	3896473	3863790	3863175	3973593	4165174	4269232	4491268	4643301	4745299	4490246
Product taxes	520463	558297	528102	533610	520926	527240	518165	511372	499982	546676	562630	588096	596551	615653	577764
Product subsidies (-)	-108520	-103448	-102863	-99390	-102742	-99266	-89614	-83459	-84665	-86472	-89125	-91435	-92187	-94199	-96666
Gross domestic product	4016919	4240675	4354597	4151789	4252881	4327747	4293774	4291803	4388888	4625378	4742737	4987876	5147421	5266512	4971466

Source: Annual national accounts database, CSO, table M000101c, as of June 25, 2021.

Table P.2 GDP development, volume indices, SOPR=100

Name	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Production	109,6	107,7	101,9	91,9	104,6	102,7	97,7	100	103,7	105,1	102,7	105,9	104,1	102,2	94,2
Intermediate consumption	111,1	109,2	100,8	90,1	105,7	103,2	96,9	99,9	104,2	105,3	102,8	106,4	104,5	102,2	94
Gross value added	107,3	105,3	103,6	94,7	103	101,8	99,2	100	102,9	104,8	102,5	105,2	103,4	102,2	94,6
Product taxes	101,7	107,3	94,6	101	97,6	101,2	98,3	98,7	97,8	109,3	102,9	104,5	101,4	103,2	93,8
Product subsidies (-)	99,2	95,3	99,4	96,6	103,4	96,6	90,3	93,1	101,4	102,1	103,1	102,6	100,8	102,2	102,6
Gross domestic product	106,8	105,6	102,7	95,3	102,4	101,8	99,2	100	102,3	105,4	102,5	105,2	103,2	102,3	94,4

Source: Annual national accounts database, CSO, table M000101d, as of June 25, 2021.

Table P.3 Development of the gross value added by industry, going prices, millions of CZK

NACE	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
TOTAL	**3 209 206**	**3 495 330**	**3 667 964**	**3 578 059**	**3 613 528**	**3 668 903**	**3 677 512**	**3 713 015**	**3 930 576**	**4 165 174**	**4 314 719**	**4 592 620**	**4 875 019**	**5 189 666**	**5 139 125**
A Agriculture, forestry, and fishing	76 442	80 622	77 620	69 469	61 514	80 536	92 049	97 968	104 883	102 277	100 113	105 159	104 766	111 331	109 212
B Mining and quarrying	41 706	44 784	50 889	43 837	45 032	46 579	42 979	33 759	39 198	37 558	31 561	32 813	33 162	29 338	23 587
C Manufacturing	821 118	895 355	888 059	805 216	836 892	898 056	897 263	909 902	1 030 576	1 106 468	1 152 741	1 202 728	1 226 882	1 286 976	1 234 525
D Electricity, gas, steam and air conditioning supply	111 712	118 906	149 928	165 527	145 800	142 966	146 889	154 929	136 595	140 043	138 789	138 138	135 540	147 759	159 400
E Water supply; sewerage, waste management and remediation activities	34 439	36 624	39 324	40 621	41 852	43 385	41 997	40 431	42 593	42 872	43 741	46 605	49 719	52 752	55 622
F Construction	203 290	223 625	232 531	249 238	254 889	236 009	217 037	213 444	221 617	235 596	235 771	251 353	272 646	291 555	306 728
G Wholesale and retail trade; repair of motor vehicles and motorcycles	364 824	387 284	400 460	370 105	380 926	379 177	389 277	385 707	412 947	457 816	466 536	514 431	540 132	568 581	557 576
H Transportation and storage	218 332	236 685	240 158	214 388	220 760	213 846	213 466	212 506	221 541	237 863	249 056	266 076	275 642	291 231	275 642
I Accommodation and food service activities	77 709	84 420	98 011	79 410	76 036	79 729	72 228	73 312	74 341	78 089	84 346	95 478	100 188	106 243	61 705
J Information and communication	160 941	181 812	188 822	190 648	185 549	189 939	189 499	188 646	199 234	216 062	228 179	252 822	284 123	305 100	320 935
K Financial and insurance activities	98 668	125 809	149 207	157 226	167 283	166 317	164 556	170 714	167 529	177 664	179 461	188 073	207 955	217 294	210 271
L Real estate activities	257 326	276 868	309 341	330 172	330 243	329 417	331 381	334 226	345 742	356 041	375 082	395 036	446 155	483 701	495 071
M Professional, scientific, and technical activities	150 479	167 123	178 606	173 132	174 843	172 255	187 651	192 034	199 030	213 109	228 014	244 094	260 615	282 597	272 164
N Administrative and support service activities	58 213	69 322	75 177	72 535	70 687	66 857	65 525	69 630	71 504	75 073	80 469	90 203	98 312	104 790	89 392
O Public administration and defence; compulsory social security	210 588	222 925	231 216	237 255	236 712	225 045	224 966	227 492	235 412	245 433	254 852	269 465	292 066	310 410	325 773
P Education	129 642	139 575	144 402	151 567	151 665	155 487	158 355	162 832	168 919	174 498	180 310	195 081	216 980	243 571	262 980
Q Human health and social work activities	118 854	123 953	136 590	148 782	149 320	152 266	160 400	163 471	174 310	179 356	190 981	205 482	225 533	245 900	276 148
R Arts, entertainment and recreation	37 032	38 431	39 599	39 091	37 612	40 125	36 963	37 031	38 465	41 707	44 211	46 543	48 758	52 599	45 025
S Other service activities	36 289	39 534	35 879	37 069	43 292	48 342	42 163	41 830	42 806	44 185	46 313	48 207	50 278	51 895	51 764
T Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	1 602	1 673	2 145	2 771	2 621	2 570	2 868	3 151	3 334	3 464	4 193	4 833	5 567	6 043	5 605
U Activities of extraterritorial organisations and bodies	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:

Source: Annual national accounts database, CSO, table M000104a, as of June 25, 2021.

Table P.4 GDP structure development, going prices, %

NACE	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
TOTAL	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
A Agriculture, forestry, and fishing	2,382	2,307	2,116	1,942	1,702	2,195	2,503	2,639	2,668	2,456	2,320	2,290	2,149	2,145	2,125
B Mining and quarrying	1,300	1,281	1,387	1,225	1,246	1,270	1,169	0,909	0,997	0,902	0,731	0,714	0,680	0,565	0,459
C Manufacturing	25,586	25,616	24,211	22,504	23,160	24,478	24,399	24,506	26,219	26,565	26,716	26,188	25,167	24,799	24,022
D Electricity, gas, steam and air conditioning supply	3,481	3,402	4,087	4,626	4,035	3,897	3,994	4,173	3,475	3,362	3,217	3,008	2,780	2,847	3,102
E Water supply; sewerage, waste management and remediation activities	1,073	1,048	1,072	1,135	1,158	1,183	1,142	1,089	1,084	1,029	1,014	1,015	1,020	1,016	1,082
F Construction	6,335	6,398	6,340	6,966	7,054	6,433	5,902	5,749	5,638	5,656	5,464	5,473	5,593	5,618	5,968
G Wholesale and retail trade; repair of motor vehicles and motorcycles	11,368	11,080	10,918	10,344	10,542	10,335	10,585	10,388	10,506	10,992	10,813	11,201	11,080	10,956	10,850
H Transportation and storage	6,803	6,771	6,547	5,992	6,109	5,829	5,805	5,723	5,636	5,711	5,772	5,794	5,654	5,612	5,364
I Accommodation and food service activities	2,421	2,415	2,672	2,219	2,104	2,173	1,964	1,974	1,891	1,875	1,955	2,079	2,055	2,047	1,201
J Information and communication	5,015	5,202	5,148	5,328	5,135	5,177	5,153	5,081	5,069	5,187	5,288	5,505	5,828	5,879	6,245
K Financial and insurance activities	3,075	3,599	4,068	4,394	4,629	4,533	4,475	4,598	4,262	4,265	4,159	4,095	4,266	4,187	4,092
L Real estate activities	8,018	7,921	8,434	9,228	9,139	8,979	9,011	9,001	8,796	8,548	8,693	8,602	9,152	9,320	9,633
M Professional, scientific, and technical activities	4,689	4,781	4,869	4,839	4,839	4,695	5,103	5,172	5,064	5,116	5,285	5,315	5,346	5,445	5,296
N Administrative and support service activities	1,814	1,983	2,050	2,027	1,956	1,822	1,782	1,875	1,819	1,802	1,865	1,964	2,017	2,019	1,739
O Public administration and defence; compulsory social security	6,562	6,378	6,304	6,631	6,551	6,134	6,117	6,127	5,989	5,893	5,907	5,867	5,991	5,981	6,339
P Education	4,040	3,993	3,937	4,236	4,197	4,238	4,306	4,385	4,298	4,189	4,179	4,248	4,451	4,693	5,117
Q Human health and social work activities	3,704	3,546	3,724	4,158	4,132	4,150	4,362	4,403	4,435	4,306	4,426	4,474	4,626	4,738	5,373
R Arts, entertainment and recreation	1,154	1,099	1,080	1,093	1,041	1,094	1,005	0,997	0,979	1,001	1,025	1,013	1,000	1,014	0,876
S Other service activities	1,131	1,131	0,978	1,036	1,198	1,318	1,147	1,127	1,089	1,061	1,073	1,050	1,031	1,000	1,007
T Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	0,050	0,048	0,058	0,077	0,073	0,070	0,078	0,085	0,085	0,083	0,097	0,105	0,114	0,116	0,109

Source: author's calculations as per Annual national accounts database, CSO, table M000104a, as of June 25, 2021.

Table P.5 Development of the gross value added by industry, prices in 2015, millions of CZK

NACE	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
TOTAL	**3 599 127**	**3 789 407**	**3 924 814**	**3 717 603**	**3 829 223**	**3 896 473**	**3 863 790**	**3 863 175**	**3 973 593**	**4 165 174**	**4 269 232**	**4 491 268**	**4 643 301**	**4 745 299**	**4 490 246**
A Agriculture, forestry, and fishing	112 857	87 131	88 610	115 398	92 416	83 865	91 094	89 531	95 812	102 277	107 652	103 566	107 792	113 851	119 296
B Mining and quarrying	50 913	49 332	43 816	40 021	38 403	35 024	35 673	30 635	38 076	37 558	34 656	31 481	29 327	23 706	19 270
C Manufacturing	837 987	892 545	965 413	845 085	943 516	1 047 818	1 005 598	992 971	1 028 474	1 106 468	1 157 070	1 257 336	1 281 055	1 319 571	1 228 763
D Electricity, gas, steam and air conditioning supply	205 436	205 767	240 555	195 497	188 074	175 183	172 802	160 754	152 151	140 043	130 535	139 327	137 702	134 620	121 835
E Water supply; sewerage, waste management and remediation activities	60 667	60 854	61 105	67 465	53 957	53 867	48 316	40 191	41 568	42 872	44 597	42 081	44 399	48 894	49 215
F Construction	223 481	232 263	227 525	236 043	244 215	231 158	217 047	219 761	230 859	235 596	226 842	228 565	229 784	223 852	216 021
G Wholesale and retail trade; repair of motor vehicles and motorcycles	324 945	359 440	359 572	337 414	357 784	370 211	378 179	379 524	413 181	457 816	454 280	487 495	509 819	526 811	504 221
H Transportation and storage	309 451	316 717	310 202	264 702	267 923	253 366	247 110	239 667	228 360	237 863	245 968	271 146	289 074	298 287	259 868
I Accommodation and food service activities	101 750	110 158	122 390	92 269	85 580	92 087	80 319	79 213	76 975	78 089	80 320	82 453	80 719	81 492	43 368
J Information and communication	153 174	171 937	177 451	177 218	176 759	180 387	177 526	182 666	196 880	216 062	224 503	245 144	270 310	277 272	281 561
K Financial and insurance activities	104 799	127 203	142 263	154 266	154 472	152 678	156 088	170 751	167 488	177 664	189 205	207 369	229 448	239 119	232 533
L Real estate activities	295 682	303 487	313 560	311 602	314 306	321 909	330 107	341 744	352 024	356 041	370 031	358 450	368 880	368 125	356 617
M Professional, scientific, and technical activities	169 887	184 046	184 862	172 735	178 873	175 067	193 080	194 073	198 462	213 109	223 096	235 971	248 337	265 129	251 464
N Administrative and support service activities	58 534	68 068	70 316	65 814	64 881	65 317	65 910	70 369	71 800	75 073	79 140	87 073	88 607	87 857	70 064
O Public administration and defence; compulsory social security	241 689	246 748	253 589	254 478	259 425	248 132	250 108	246 877	244 346	245 433	248 694	250 130	255 245	259 285	260 962
P Education	161 956	164 151	163 780	164 504	164 035	168 267	168 587	171 921	174 142	174 498	175 272	180 736	185 551	189 613	190 575
Q Human health and social work activities	174 609	172 996	177 925	183 381	184 088	171 744	176 145	177 519	182 405	179 356	183 852	187 483	190 407	191 421	197 297
R Arts, entertainment and recreation	40 250	39 851	38 476	35 558	34 171	36 360	35 570	35 918	36 766	41 707	45 687	47 728	51 198	57 745	47 371
S Other service activities	47 520	50 172	42 227	42 433	48 270	53 573	45 808	44 566	44 559	44 185	43 668	43 489	43 174	42 214	39 524
T Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	1 930	1 960	2 364	3 024	2 818	2 711	2 928	3 172	3 344	3 464	4 164	4 504	4 959	5 236	4 724
U Activities of extraterritorial organisations and bodies	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:

Annual national accounts database, CSO, table M000104c, as of June 25, 2021.

Table P.6 Development of the gross value added by industry, two-digit classification, manufacturing, going prices, millions of CZK

NACE	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TOTAL	3 209 206	3 495 330	3 667 964	3 578 059	3 613 528	3 668 903	3 677 512	3 713 015	3 930 576	4 165 174	4 314 719	4 592 620	4 875 019	5 189 666
10 Manufacture of food products	50 913	52 251	52 993	56 212	53 471	53 817	52 329	52 498	56 332	58 734	60 746	63 404	64 976	67 816
11 Manufacture of beverages	25 750	25 864	26 081	25 739	24 542	24 143	25 969	24 057	24 597	25 215	27 121	27 285	29 557	31 105
12 Manufacture of tobacco products	3 762	3 835	4 071	5 456	4 317	4 547	4 496	4 220	4 518	4 812	5 264	6 221	6 782	7 359
13 Manufacture of textiles	15 910	16 158	16 525	14 648	12 909	12 985	12 696	13 395	15 055	14 918	15 175	15 638	15 187	15 093
14 Manufacture of wearing apparel	8 674	8 976	8 209	7 899	7 953	7 989	6 493	6 842	7 422	7 700	8 349	9 182	9 274	10 413
15 Manufacture of leather and related products	2 194	2 430	2 691	2 847	2 669	2 589	2 416	2 296	2 248	2 472	2 714	2 686	2 305	2 481
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	24 268	25 923	26 614	22 309	21 129	21 077	21 280	20 620	22 957	24 581	26 493	28 248	31 392	32 833
17 Manufacture of paper and paper products	16 288	16 909	14 653	14 117	14 974	14 152	13 768	13 740	16 335	18 937	20 119	21 896	21 971	24 795
18 Printing and reproduction of recorded media	13 350	16 038	16 491	14 551	15 686	14 260	12 507	12 148	13 152	14 070	14 350	14 198	15 177	15 507
19 Manufacture of coke and refined petroleum products	6 640	5 632	6 629	5 818	5 363	4 656	4 540	4 777	4 664	4 848	5 046	3 671	1 031	1 150
20 Manufacture of chemicals and chemical products	27 781	29 601	30 503	24 227	24 027	25 955	29 108	27 050	34 138	40 617	39 035	47 815	45 244	48 391
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	14 943	14 611	13 951	15 203	16 917	15 729	16 334	16 527	18 491	17 998	17 872	18 865	17 644	20 807
22 Manufacture of rubber and plastic products	58 880	59 782	61 860	61 421	62 611	64 751	65 219	67 460	77 803	87 236	90 303	89 781	87 244	93 062
23 Manufacture of other non-metallic mineral products	51 642	54 587	53 289	44 758	41 326	44 225	41 515	41 473	46 227	51 192	49 100	50 917	55 628	59 283
24 Manufacture of basic metals	50 975	52 123	44 964	28 423	25 831	32 235	28 942	31 980	39 497	41 149	39 294	36 348	38 622	36 005
25 Manufacture of fabricated metal products, except machinery and equipment	84 100	91 421	93 653	80 377	87 163	94 669	98 443	100 986	114 739	125 235	129 508	135 157	140 689	150 526
26 Manufacture of computer, electronic and optical products	41 166	47 243	46 395	41 861	44 394	47 207	56 208	53 845	58 675	63 299	67 420	73 467	78 149	71 632
27 Manufacture of electrical equipment	49 322	58 676	54 835	53 635	59 595	71 427	69 404	70 956	80 643	86 208	86 067	90 642	93 093	99 018
28 Manufacture of machinery and equipment n.e.c.	74 966	87 828	88 112	75 547	80 654	89 904	89 861	94 443	100 983	105 077	102 509	107 037	105 497	108 868
29 Manufacture of motor vehicles, trailers and semi-trailers	127 277	142 388	139 474	127 573	149 787	160 948	156 488	158 868	195 087	212 561	238 257	252 271	253 603	271 237
30 Manufacture of other transport equipment	10 080	12 465	14 618	15 533	16 044	19 634	19 548	19 801	22 319	24 525	25 387	22 686	23 455	24 525
31 Manufacture of furniture	13 109	13 898	15 079	13 682	12 172	13 199	12 394	12 390	12 943	12 966	15 410	15 988	15 881	16 645
32 Other manufacturing	17 546	18 814	18 072	17 262	18 076	19 136	19 108	20 025	20 872	22 228	24 837	26 614	28 250	29 367

Source: Annual national accounts database, CSO, table TB0001B1Ga, as of June 25, 2021.

Table P.7 Development of the structure of gross value added by industry, two-digit classification, manufacturing, going prices, %

NACE	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TOTAL	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
10 Manufacture of food products	6,448	6,094	6,236	7,309	6,670	6,263	6,091	6,032	5,692	5,507	5,471	5,466	5,503	5,478
11 Manufacture of beverages	3,261	3,016	3,069	3,347	3,062	2,810	3,023	2,764	2,485	2,364	2,443	2,352	2,503	2,513
12 Manufacture of tobacco products	0,476	0,447	0,479	0,709	0,539	0,529	0,523	0,485	0,457	0,451	0,474	0,536	0,574	0,594
13 Manufacture of textiles	2,015	1,884	1,945	1,905	1,610	1,511	1,478	1,539	1,521	1,399	1,367	1,348	1,286	1,219
14 Manufacture of wearing apparel	1,099	1,047	0,966	1,027	0,992	0,930	0,756	0,786	0,750	0,722	0,752	0,792	0,785	0,841
15 Manufacture of leather and related products	0,278	0,283	0,317	0,370	0,333	0,301	0,281	0,264	0,227	0,232	0,244	0,232	0,195	0,200
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	3,074	3,023	3,132	2,901	2,636	2,453	2,477	2,369	2,320	2,305	2,386	2,435	2,659	2,652
17 Manufacture of paper and paper products	2,063	1,972	1,724	1,836	1,868	1,647	1,603	1,579	1,651	1,775	1,812	1,888	1,861	2,003
18 Printing and reproduction of recorded media	1,691	1,870	1,941	1,892	1,957	1,660	1,456	1,396	1,329	1,319	1,292	1,224	1,285	1,253
19 Manufacture of coke and refined petroleum products	0,841	0,657	0,780	0,756	0,669	0,542	0,528	0,549	0,471	0,455	0,454	0,316	0,087	0,093
20 Manufacture of chemicals and chemical products	3,519	3,452	3,590	3,150	2,997	3,021	3,388	3,108	3,449	3,808	3,515	4,122	3,832	3,909
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	1,893	1,704	1,642	1,977	2,110	1,831	1,901	1,899	1,868	1,687	1,610	1,626	1,494	1,681
22 Manufacture of rubber and plastic products	7,458	6,972	7,280	7,986	7,811	7,536	7,592	7,750	7,861	8,179	8,133	7,740	7,389	7,518
23 Manufacture of other non-metallic mineral products	6,541	6,366	6,271	5,820	5,155	5,147	4,833	4,765	4,671	4,800	4,422	4,389	4,712	4,789
24 Manufacture of basic metals	6,456	6,079	5,291	3,696	3,222	3,752	3,369	3,674	3,991	3,858	3,539	3,133	3,271	2,909
25 Manufacture of fabricated metal products, except machinery and equipment	10,652	10,662	11,021	10,451	10,873	11,018	11,459	11,602	11,593	11,742	11,663	11,651	11,916	12,160
26 Manufacture of computer, electronic and optical products	5,214	5,510	5,460	5,443	5,538	5,494	6,543	6,186	5,929	5,935	6,072	6,333	6,619	5,786
27 Manufacture of electrical equipment	6,247	6,843	6,453	6,974	7,434	8,313	8,079	8,152	8,148	8,083	7,751	7,814	7,885	7,999
28 Manufacture of machinery and equipment n.e.c.	9,495	10,243	10,369	9,823	10,062	10,463	10,460	10,851	10,203	9,852	9,232	9,227	8,935	8,794
29 Manufacture of motor vehicles, trailers and semi-trailers	16,120	16,606	16,413	16,587	18,686	18,732	18,216	18,252	19,712	19,929	21,457	21,747	21,480	21,911
30 Manufacture of other transport equipment	1,277	1,454	1,720	2,020	2,001	2,285	2,275	2,275	2,255	2,299	2,286	1,956	1,987	1,981
31 Manufacture of furniture	1,660	1,621	1,774	1,779	1,518	1,536	1,443	1,423	1,308	1,216	1,388	1,378	1,345	1,345
32 Other manufacturing	2,222	2,194	2,127	2,244	2,255	2,227	2,224	2,301	2,109	2,084	2,237	2,294	2,393	2,372

Source: Author's calculations as per Annual national accounts database, CSO, table TB0001B1Ga, as of June 25, 2021.

Table P.8 Development of the gross value added by industry, two-digit classification, manufacturing, prices in 2015, millions of CZK

NACE	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TOTAL	3 209 206	3 495 330	3 667 964	3 578 059	3 613 528	3 668 903	3 677 512	3 713 015	3 930 576	4 165 174	4 314 719	4 592 620	4 875 019	5 189 666
10 Manufacture of food products	54 505	57 771	52 342	50 158	53 846	57 094	54 740	52 582	53 193	58 734	63 049	66 106	64 954	67 697
11 Manufacture of beverages	46 033	29 070	29 244	25 732	25 848	28 088	28 230	26 037	25 076	25 215	27 141	28 946	29 949	30 081
12 Manufacture of tobacco products	6 875	8 587	9 928	10 309	7 306	7 719	7 373	5 299	4 762	4 812	5 063	5 811	5 642	5 929
13 Manufacture of textiles	21 229	17 589	21 615	17 112	15 343	14 751	14 197	15 081	15 458	14 918	15 159	15 574	14 713	13 873
14 Manufacture of wearing apparel	11 528	11 135	11 869	9 581	9 241	9 038	6 655	7 717	7 411	7 700	8 182	9 047	9 136	9 079
15 Manufacture of leather and related products	2 807	2 402	2 422	2 696	2 236	2 009	1 756	2 121	2 070	2 472	2 740	2 766	2 276	2 096
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	29 217	26 991	30 695	25 347	27 246	26 288	27 090	23 616	23 008	24 581	22 789	24 594	23 471	24 288
17 Manufacture of paper and paper products	15 558	16 137	16 299	17 204	17 986	17 245	16 870	16 010	17 245	18 937	20 547	22 085	21 783	23 670
18 Printing and reproduction of recorded media	9 880	12 393	13 015	11 218	14 232	13 515	12 004	11 854	12 950	14 070	14 504	14 334	15 802	15 244
19 Manufacture of coke and refined petroleum products	- 7 293	- 1 651	- 4 015	- 11 874	9 292	3 446	7 153	7 317	2 703	4 848	5 738	2 397	334	408
20 Manufacture of chemicals and chemical products	25 802	29 036	36 319	36 989	29 697	26 966	29 715	26 755	29 914	40 617	42 392	49 752	52 139	55 303
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	13 311	12 941	13 421	13 727	15 384	15 843	15 778	17 037	18 965	17 998	17 972	19 149	17 996	21 143
22 Manufacture of rubber and plastic products	59 624	63 407	74 053	72 754	82 528	85 792	79 708	79 361	81 051	87 236	90 403	95 590	98 968	103 571
23 Manufacture of other non-metallic mineral products	51 313	54 394	55 689	45 867	44 345	49 160	45 462	44 880	47 850	51 192	48 244	51 547	55 543	55 464
24 Manufacture of basic metals	116 762	81 916	52 437	44 366	39 972	37 382	32 061	39 216	40 414	41 149	46 117	41 043	30 492	35 323
25 Manufacture of fabricated metal products, except machinery and equipment	94 497	95 446	96 110	80 944	97 044	103 801	105 476	106 462	114 756	125 235	131 129	139 336	139 544	141 860
26 Manufacture of computer, electronic and optical products	30 840	38 368	41 030	35 616	50 637	56 505	59 664	55 586	58 399	63 299	67 591	79 649	90 905	88 491
27 Manufacture of electrical equipment	45 473	54 880	57 042	52 718	61 528	76 045	71 956	70 344	78 260	86 208	83 566	95 259	99 671	106 380
28 Manufacture of machinery and equipment n.e.c.	73 314	88 780	101 919	75 593	89 354	108 272	104 949	104 155	102 180	105 077	100 713	112 169	108 880	106 326
29 Manufacture of motor vehicles, trailers and semi-trailers	122 035	144 278	181 953	141 550	185 438	230 135	202 381	193 612	195 983	212 561	236 804	274 137	288 476	300 572
30 Manufacture of other transport equipment	13 512	16 211	16 860	14 260	15 691	20 638	18 794	19 623	23 365	24 525	26 395	22 972	22 966	23 378
31 Manufacture of furniture	11 241	12 229	14 518	11 521	11 065	12 860	12 217	12 378	12 751	12 966	14 615	16 219	16 135	16 589
32 Other manufacturing	17 248	19 149	20 044	17 191	18 031	19 548	19 922	21 687	21 570	22 228	24 676	26 622	28 246	29 103

Source: Annual national accounts database, CSO, table TB0001B1Ga, as of June 25, 2021.

Table P.9 Regional GDP development, constant prices in 2015, 1995=100

Territory	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Czechia	104,3	103,7	103,4	104,8	109,0	112,3	114,1	118,1	123,8	132,0	140,9	148,8	152,8	145,7	149,2	151,8	150,7	150,6	154,0	162,3	166,4	175,0	180,6	184,8
Prague	105,8	109,1	113,0	117,2	123,0	129,5	134,3	142,3	152,1	164,1	172,6	188,4	193,3	183,0	191,0	188,4	188,9	192,4	199,6	212,9	219,1	228,8	241,1	245,2
Central Bohemian Region	103,3	103,6	107,9	113,3	119,5	123,4	130,3	131,9	139,4	146,1	166,0	178,4	191,7	179,5	180,4	193,6	192,4	187,6	191,9	203,3	214,3	229,5	235,0	247,1
South Bohemian	104,4	104,0	103,7	104,3	107,9	108,8	108,9	110,7	116,4	126,2	131,4	132,7	132,0	126,6	128,0	127,8	128,6	126,5	126,9	131,9	133,4	142,4	146,2	151,4
Plzeň Region	105,7	102,5	99,5	100,6	105,8	109,4	109,8	115,3	125,8	130,5	143,4	144,9	141,0	140,3	146,6	150,6	144,4	148,7	152,5	158,8	162,6	171,7	175,9	176,4
Karlovy Vary Region	98,8	95,1	93,2	92,4	96,7	95,6	96,7	99,7	99,6	102,5	103,7	107,8	104,6	102,1	99,8	98,8	97,0	97,0	97,5	98,7	100,5	103,5	102,6	103,2
Ústí nad Labem Region	102,1	98,0	95,2	94,2	95,1	95,0	95,4	101,0	101,2	107,2	117,1	119,3	121,0	122,3	117,2	114,6	115,6	113,2	113,5	122,0	120,7	123,9	124,0	129,4
Liberec Region	101,7	102,5	99,8	102,6	107,1	109,5	110,2	105,4	109,9	123,3	131,2	132,6	137,2	128,2	133,9	138,2	136,8	137,0	139,2	145,7	148,9	157,8	161,6	165,8
Hradec Králové Region	104,2	105,9	104,2	105,6	111,1	112,6	111,3	113,6	120,2	127,0	131,7	139,1	142,6	138,2	141,1	143,7	140,7	141,1	142,9	151,1	157,3	170,9	175,9	182,2
Pardubice Region	102,2	102,3	102,6	101,9	105,5	107,8	109,2	113,3	117,3	123,4	136,4	144,2	146,5	141,2	147,0	154,1	142,8	143,4	148,2	155,8	160,6	171,8	177,1	177,2
Vysočina Region	104,3	101,3	100,6	104,3	110,3	117,2	118,2	121,5	124,9	134,7	143,7	150,5	149,0	144,1	145,7	150,1	150,2	148,3	151,1	155,5	158,8	167,2	166,7	172,1
South Moravian Region	104,4	102,6	101,9	101,5	105,0	108,3	108,6	113,6	118,9	125,6	132,6	142,5	151,0	142,5	146,3	150,9	150,7	154,4	154,1	163,4	164,1	171,3	179,6	182,4
Olomouc Region	106,8	103,0	98,6	100,2	104,0	105,6	104,3	108,9	116,3	119,9	124,6	130,3	133,7	128,6	133,2	137,5	136,1	134,6	138,3	146,1	150,3	159,1	162,6	166,8
Zlín Region	102,2	106,0	102,7	101,7	105,4	109,0	110,6	115,3	119,0	129,0	140,7	148,2	159,6	152,6	156,1	160,3	156,7	157,1	163,0	168,7	172,8	182,7	185,7	193,0
Moravian-Silesian Region	105,7	102,0	97,8	95,7	97,1	99,6	99,0	100,6	102,0	109,9	114,9	117,7	117,9	108,8	112,0	115,5	115,1	110,4	113,5	117,5	120,8	125,0	128,3	128,2

Source: Annual national accounts database, CSO, table REG_HDP_SC_V, as of June 25, 2021.

Annexe 3—Breakdown of the variable composition index[6]

The index analysis apparatus, specifically the variable index breakdown, is clearly described e.g. in Hindls et al. (2018). It breaks down the variable composition index (IPS) into the constant composition index (SS), and structure index (STR). The index breakdown is described in Equations P3.1 to P3.7.

However, the IPS breakdown has one flaw—it is based on the so-called gradual change method which assumes that either wages first change in individual education groups, followed by changes in the educational structures, or that it is the educational structure which changes first, followed by wages in the individual groups. If both changes are independent on each other, breakdowns performed in both ways yield similar results.

We use Equations P3.1 to P3.7 for the method of breaking down the variable composition index and determine the effect of structure or composition. The former breakdown method is described in Equations P3.2, P3.5, and P3.6, the latter in Equations P3.3, P3.4 a P3.7.

Letter $p_{t,i}$ shows the average wage amount in year t for the education group i; letter $q_{t,i}$ stands for the number of people whose highest educational attainment is i in the time t. Letter $Q_{t,i}$ is a product of p and q, expressing the total amount of earnings received by people from the education group i in the time t.

[6] Partially using texts from Fischer, Doseděl, Vltavská (2019).

$$\bar{I}_p = \frac{\bar{p}_1}{\bar{p}_0} = \frac{\frac{\sum_{i=1}^{n} Q_{1,i}}{\sum_{i=1}^{n} q_{1,i}}}{\frac{\sum_{i=1}^{n} Q_{0,i}}{\sum_{i=1}^{n} q_{0,i}}} = \frac{\frac{\sum_{i=1}^{n} p_{1,i} q_{1,i}}{\sum_{i=1}^{n} q_{1,i}}}{\frac{\sum_{i=1}^{n} p_{0,i} q_{0,i}}{\sum_{i=1}^{n} q_{0,i}}} = \frac{\frac{\sum_{i=1}^{n} Q_{1,i}}{\sum_{i=1}^{n} \frac{Q_{1,i}}{p_{1,i}}}}{\frac{\sum_{i=1}^{n} Q_{0,i}}{\sum_{i=1}^{n} \frac{Q_{0,i}}{p_{0,i}}}}$$

Equation P3.1—Variable composition index

$$I_{SS}^{(q_0)} = \frac{\frac{\sum_{i=1}^{n} p_{1,i} q_{0,i}}{\sum_{i=1}^{n} q_{0,i}}}{\frac{\sum_{i=1}^{n} p_{0,i} q_{0,i}}{\sum_{i=1}^{n} q_{0,i}}} = \frac{\sum_{i=1}^{n} p_{1,i} q_{0,i}}{\sum_{i=1}^{n} p_{0,i} q_{0,i}}$$

Equation P3.2—Constant composition index, weights from situation 0

$$I_{SS}^{(q_1)} = \frac{\frac{\sum_{i=1}^{n} p_{1,i} q_{1,i}}{\sum_{i=1}^{n} q_{1,i}}}{\frac{\sum_{i=1}^{n} p_{0,i} q_{1,i}}{\sum_{i=1}^{n} q_{1,i}}} = \frac{\sum_{i=1}^{n} p_{1,i} q_{1,i}}{\sum_{i=1}^{n} p_{0,i} q_{1,i}}$$

Equation P3.3—Constant composition index weights from situation 1

$$I_{STR}^{(p_0)} = \frac{\frac{\sum_{i=1}^{n} p_{0,i} q_{1,i}}{\sum_{i=1}^{n} q_{1,i}}}{\frac{\sum_{i=1}^{n} p_{0,i} q_{0,i}}{\sum_{i=1}^{n} q_{0,i}}}$$

Equation P3.4—Structure index, weights from situation 0

$$I_{STR}^{(p_1)} = \frac{\frac{\sum_{i=1}^{n} p_{1,i} q_{1,i}}{\sum_{i=1}^{n} q_{1,i}}}{\frac{\sum_{i=1}^{n} p_{1,i} q_{0,i}}{\sum_{i=1}^{n} q_{0,i}}}$$

Equation P3.5—Structure index, weights from situation 1

$$\bar{I}_p = I_{SS}^{(q_0)} \cdot I_{STR}^{(p_1)}$$

Equation P3.6—Relationship between the variable composition index, constant composition index with weights from situation 0, and structure index with weights from situation 1

$$\bar{I}_p = I_{SS}^{(q_1)} \cdot I_{STR}^{(p_0)}$$

Equation P3.7—Relationship between the variable composition index, constant composition index with weights from situation 1, and structure index with weights from situation 0

Using the breakdown to evaluate the effect of a different workforce composition on remuneration differences between the private and public sector: we will try to learn which part of the difference between the private and public sector can be ascribed to differences in average wages in individual sectors (constant composition index), and which part can be explained by a different workforce structure. Therefore, in Equations P3.1–P3.7, letter p_{it} marks the average wage, with *i* standing for job type (manual/non-manual) and *t* for type of sector (private/public).

Annexe 4—Charts for the Karlovy Vary Region

Table P.10a Basic indicators for the Karlovy Vary Region 1995–2006

Indicator	UoM	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Gross value added in going prices	mil. CZK	40 799	44 461	46 831	50 554	51 610	55 197	57 466	59 827	62 453	64 507	66 879	69 175
Gross domestic product in going prices	mil. CZK	44 905	48 992	51 402	55 413	56 829	60 593	62 966	65 426	68 316	71 246	73 947	76 109
Gross domestic product per 1 inhabitant	CZK	147 184	160 583	168 628	181 712	186 482	198 927	207 201	215 386	224 666	234 576	242 778	249 888
Gross domestic product in prices for the previous year	mil. CZK	:	44 352	47 197	50 372	54 935	59 478	59 870	63 701	67 466	68 221	73 316	74 809
Gross domestic product, volume indices, previous year = 100	%	:	98,8	96,3	98,0	99,1	104,7	98,8	101,2	103,1	99,9	102,9	101,2
Gross domestic product, volume indices, 1995 = 100	%	0,0	98,8	95,1	93,2	92,4	96,7	95,6	96,7	99,7	99,6	102,5	103,7
Net disposable household income	mil. CZK	23 435	27 199	31 412	33 179	33 925	37 338	38 247	39 390	41 385	42 264	44 621	46 982
Net disposable household income per 1 inhabitant	CZK	76 812	89 151	103 049	108 801	111 323	122 581	125 859	129 674	136 100	139 154	146 497	154 255
Gross fixed capital formation	mil. CZK	14 108	19 077	14 410	13 845	13 482	13 918	21 532	20 673	21 554	20 995	22 841	20 951
Gross fixed capital formation per 1 inhabitant	CZK	46 242	62 531	47 274	45 402	44 242	45 694	70 853	68 058	70 882	69 127	74 990	68 786
Total employment (people)	people	157 585	158 953	157 105	151 964	152 229	153 601	151 320	147 222	150 010	145 919	150 603	147 768
Employees (people)	people	142 199	141 700	139 895	134 634	130 835	134 070	132 056	125 528	124 678	125 454	130 458	125 605
Total employment (hours worked)	thous. hours	285 322	287 179	285 872	278 930	284 102	287 527	271 998	264 036	267 366	262 569	268 766	262 240
Employee compensations	mil. CZK	17 861	20 164	21 354	22 294	22 822	24 294	25 473	27 362	27 430	28 826	30 578	32 086
Mid-period population	people	305 094	305 088	304 825	304 950	304 743	304 599	303 888	303 761	304 078	303 722	304 587	304 573

Source: National accounts database, table REG_KVK_CZ.

Table P.10b Basic indicators for the Karlovy Vary Region, 2007–2019

Indicator	UoM	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gross value added in going prices	mil. CZK	75 029	75 958	76 121	74 099	74 173	72 915	73 239	75 654	77 284	79 123	83 841	86 337	90 888
Gross domestic product in going prices	mil. CZK	82 847	83 722	84 126	81 878	82 127	81 072	81 717	83 645	85 823	87 965	93 300	95 806	100 680
Gross domestic product per 1 inhabitant	CZK	271 078	271 316	273 170	266 167	270 583	268 021	271 486	278 928	287 508	295 863	315 090	324 453	341 512
Gross domestic product in prices for the previous year	mil. CZK	79 108	80 415	81 750	82 175	81 103	80 622	81 032	82 164	84 693	87 366	90 640	92 474	96 347
Gross domestic product, volume indices, previous year = 100	%	103,9	97,1	97,6	97,7	99,1	98,2	100,0	100,5	101,3	101,8	103,0	99,1	100,6
Gross domestic product, volume indices, year 1995 = 100	%	107,8	104,6	102,1	99,8	98,8	97,0	97,0	97,5	98,7	100,5	103,5	102,6	103,2
Net disposable household income	mil. CZK	49 059	51 716	54 506	54 448	54 276	53 301	54 061	55 905	58 435	60 321	65 500	68 026	71 590
Net disposable household income per 1 inhabitant	CZK	160 523	167 595	176 989	176 998	178 822	176 211	179 605	186 425	195 758	202 884	221 205	230 374	242 837
Gross fixed capital formation	mil. CZK	20 466	23 011	21 004	24 561	24 338	24 875	18 077	20 225	23 163	19 970	23 080	23 155	:
Gross fixed capital formation per 1 inhabitant	CZK	66 966	74 573	68 204	79 842	80 186	82 236	60 056	67 445	77 596	67 167	77 945	78 416	:
Total employment (people)	people	146 452	150962 *)	145 096	142 492	140 940	138 151	133 643	135 227	139 408	137 490	141 079	138 897	138 843
Employees (people)	people	122 963	124358 *)	123 374	123 839	120 821	114 857	116 259	120 344	123 713	122 153	127 140	122 322	123 572
Total employment (hours worked)	thous. of hours	256 821	267155 *)	254 610	253 191	251 574	244 585	236 171	242 820	247 408	249 676	255 897	250 174	246 307
Employee compensations	mil. CZK	33 529	36 103	35 501	34 916	35 130	35 421	35 087	35 945	37 529	40 070	43 648	46 438	48 845
Mid-period population	people	305 620	308 577	307 962	307 619	303 519	302 484	300 999	299 880	298 506	297 317	296 106	295 285	294 807

Source: National accounts database, table REG_KVK_CZ.

Table P.11 Industry structure gross value added, going prices, mil. CZK

Territory	Gross value added in going prices	Agriculture, forestry, and fishing	Industry, mining and quarrying		Construction	Sale, transportation, accommodation and food services	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific, and administrative activities	Public administration and defence, education, human health and social work activities	Other service activities
			TOTAL	from that: Manufacturing								
NACE		A	B+C+D+E	C	F	G+H+I	J	K	L	M+N	O+P+Q	R+S+T+U
Czechia	5 189 666	111 331	1 516 825	1 286 976	291 555	966 055	305 100	217 294	483 701	387 387	799 881	110 537
Cohesion regions - NUTS2												
Prague	1 413 709	4 983	145 670	95 005	64 579	313 139	196 848	142 537	140 519	188 277	186 173	30 984
Central Bohemia	602 458	14 785	245 126	227 758	28 317	118 618	11 868	8 620	61 066	33 275	69 920	10 863
Southwest	505 933	19 288	177 498	147 313	29 778	86 980	10 491	11 299	46 428	26 392	85 108	12 671
Northwest	377 079	7 559	135 700	100 513	25 475	61 077	6 331	6 624	37 198	16 348	72 087	8 680
Northeast	601 866	17 260	234 849	212 773	34 538	95 379	14 438	14 716	52 093	26 658	100 604	11 331
Southeast	742 823	26 092	216 908	181 705	52 176	131 660	40 854	15 652	68 702	50 597	123 684	16 498
Central Moravia	479 423	13 610	183 479	168 813	30 985	78 161	8 397	8 350	43 406	20 982	82 884	9 169
Moravian-Silesian	466 375	7 754	177 595	153 096	25 707	81 041	15 873	9 496	34 289	24 858	79 421	10 341
Regions - NUTS3												

Prague	1 413 709	4 983	145 670	95 005	64 579	313 139	196 848	142 537	140 519	188 277	186 173	30 984
Central Bohemian Region	602 458	14 785	245 126	227 758	28 317	118 618	11 868	8 620	61 066	33 275	69 920	10 863
South Bohemian	254 365	11 137	87 374	69 219	15 687	45 697	4 640	6 052	22 102	11 450	44 615	5 611
Plzeň Region	251 568	8 151	90 124	78 094	14 091	41 283	5 851	5 247	24 326	14 942	40 493	7 060
Karlovy Vary Region	**90 888**	**2 188**	**25 513**	**18 430**	**5 122**	**17 223**	**919**	**1 757**	**11 491**	**3 538**	**19 987**	**3 150**
Ústí nad Labem Region	286 191	5 371	110 187	82 083	20 353	43 854	5 412	4 867	25 707	12 810	52 100	5 530
Liberec Region	164 504	2 683	64 587	60 178	9 634	24 497	3 684	3 844	14 957	8 560	28 351	3 707
Hradec Králové Region	238 507	7 317	97 772	87 611	12 338	37 447	5 321	5 382	19 874	9 102	39 822	4 132
Pardubice Region	198 855	7 260	72 490	64 984	12 566	33 435	5 433	5 490	17 262	8 996	32 431	3 492
Vysočina Region	199 574	11 986	75 112	64 505	13 891	31 343	2 761	2 918	21 025	6 853	30 825	2 860
South Moravian Region	543 249	14 106	141 796	117 200	38 285	100 317	38 093	12 734	47 677	43 744	92 859	13 638
Olomouc Region	238 835	7 550	78 153	70 218	15 515	42 200	4 574	4 723	22 700	10 061	48 828	4 531
Zlín Region	240 588	6 060	105 326	98 595	15 470	35 961	3 823	3 627	20 706	10 921	34 056	4 638

Moravian-Silesian Region	466 375	7 754	177 595	153 096	25 707	81 041	15 873	9 496	34 289	24 858	79 421	10 341

Source: National accounts database CSO, table REG_HDP_NACE.

Table P.12 Industry structure of the gross value added, differences in structures when compared to the Czech average

Territory	Gross value added in going prices	Agriculture, forestry, and fishing	Industry, mining and quarrying TOTAL	Construction	Sale, transportation, accommodation and food services	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific, and administrative activities	Public administration and defence, education, human health and social work activities	Other service activities
NACE		A	B+C+D+E	F	G+H+I	J	K	L	M+N	O+P+Q	R+S+T+U
Cohesion regions - NUTS2											
Prague	,0	-1,79	-18,92	-1,05	3,54	8,05	5,90	0,62	5,85	-2,24	0,06
Central Bohemia	,0	0,31	11,46	-0,92	1,07	-3,91	-2,76	0,82	-1,94	-3,81	-0,33
Southwest	,0	1,67	5,86	0,27	-1,42	-3,81	-1,95	-0,14	-2,25	1,41	0,37
Northwest	,0	-0,14	6,76	1,14	-2,42	-4,20	-2,43	0,54	-3,13	3,70	0,17
Northeast	,0	0,72	9,79	0,12	-2,77	-3,48	-1,74	-0,67	-3,04	1,30	-0,25
Southeast	,0	1,37	-0,03	1,41	-0,89	-0,38	-2,08	-0,07	-0,65	1,24	0,09
Central Moravia	,0	0,69	9,04	0,84	-2,31	-4,13	-2,45	-0,27	-3,09	1,88	-0,22
Moravian-Silesian	,0	-0,48	8,85	-0,11	-1,24	-2,48	-2,15	-1,97	-2,13	1,62	0,09
Regions - NUTS3											
Prague	0	-1,79	-18,92	-1,05	3,54	8,05	5,90	0,62	5,85	-2,24	0,06

Central Bohemian Region	0	0,31	11,46	-0,92	1,07	-3,91	-2,76	0,82	-1,94	-3,81	-0,33
South Bohemian	0	2,23	5,12	0,55	-0,65	-4,05	-1,81	-0,63	-2,96	2,13	0,08
Plzeň Region	0	1,09	6,60	-0,02	-2,20	-3,55	-2,10	0,35	-1,53	0,68	0,68
Karlovy Vary Region	0	**0,26**	**-1,16**	**0,02**	**0,33**	**-4,87**	**-2,25**	**3,32**	**-3,57**	**6,58**	**1,34**
Ústí nad Labem Region	0	-0,27	9,27	1,49	-3,29	-3,99	-2,49	-0,34	-2,99	2,79	-0,20
Liberec Region	0	-0,51	10,03	0,24	-3,72	-3,64	-1,85	-0,23	-2,26	1,82	0,12
Hradec Králové Region	0	0,92	11,77	-0,44	-2,91	-3,65	-1,93	-0,99	-3,65	1,28	-0,40
Pardubice Region	0	1,51	7,23	0,70	-1,80	-3,15	-1,43	-0,64	-2,94	0,90	-0,37
Vysočina Region	0	3,86	8,41	1,34	-2,91	-4,50	-2,72	1,21	-4,03	0,03	-0,70
South Moravian Region	0	0,45	-3,13	1,43	-0,15	1,13	-1,84	-0,54	0,59	1,68	0,38
Olomouc Region	0	1,02	3,49	0,88	-0,95	-3,96	-2,21	0,18	-3,25	5,03	-0,23
Zlín Region	0	0,37	14,55	0,81	-3,67	-4,29	-2,68	-0,71	-2,93	-1,26	-0,20
Moravian-	0	-0,48	8,85	-0,11	-1,24	-2,48	-2,15	-1,97	-2,13	1,62	0,09

Silesian Region											

Source: National accounts database CSO, table REG_HDP_NACE, author's calculations.