

Appendix

The foreign population in Poland during the COVID-19 pandemic

The report on „The foreign population in Poland during the COVID-19 pandemic” describes how the size of selected foreign subpopulations in the ZUS register changed over time. The data, referring to the number of insured (natural) persons who indicated citizenship other than Polish in their application for old-age and invalidity pension, were compiled at the end of the February-April period. Additionally, these counts were compared to those at the end of 2019. In the course of cooperation with ZUS, more detailed information from the ZUS registers was obtained regarding the foreign population (in total and citizens of Ukraine). In particular, the newly acquired data contained information about:

- 1) Sex
- 2) Age group (aged 19 and younger, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, aged 65 and older)
- 3) NACE section

As regards sex and age groups, information was obtained on:

- 4) the number of insured natural persons who indicated citizenship other than Polish in their application for old-age and invalidity pension,
- 5) the number of insured employees (insurance codes 01xx) who indicated citizenship other than Polish in their application for old-age and invalidity pension,
- 6) the number of insured self-employed persons (insurance codes 05xx) who indicated citizenship other than Polish in their application for old-age and invalidity pension,

Regarding NACE section, the new data only contained information about the number of insured natural persons, who indicated citizenship other than Polish in their application for old-age and invalidity pension.

The data were compiled at the end of February, March and April 2020.

Summary of the most important information:

- 1) The number of foreigners (natural persons) registered for old-age and invalidity insurance at the end of April 2020 declined by 47.9 thousand compared to February 2020, including:
 - 21.5 thousand women (44.9%),
 - 26.4 thousand men (55.1%),
 - 43.8 thousand citizens of Ukraine (91.4%),
 - 7.7 thousand persons aged 25-29 (16%), 7.1 thousand persons aged 20-24 (14.7%),
 - the majority of foreigners were aged 20-49 (81.9%),
 - an average decline in employment among women amounted to 12.6%, and among men – 6.8%,
 - the biggest decreases in employment among women were recorded among foreigners aged 19 and younger (17.5 %), 55-59 (16.2%) and 60-64 (15%),
 - the biggest decreases in employment among men were recorded among foreigners aged 19 and younger (12.5 %) and 20-24 (12%).
- 2) The following changes were recorded in the number of foreigners (natural persons) registered for old-age and invalidity insurance at the end of April 2020 by NACE section:
 - a. the biggest decreases were observed for the following sections (numbers in brackets refer to percentage shares in the decline):
 - 26.9 thousand (55.5%) – section N – Administrative and support service activities
 - 7.3 thousand (15.2%) – section C – Manufacturing,
 - 4.0 thousand (8.3%) – section I – Accommodation and food service activities
 - 3.1 thousand (6.4%) – section H – Transportation and storage
 - b. slight increases were observed for the following sections:
 - 79 persons – section O – Public administration and defence; compulsory social security
 - 50 persons – section J – Information and communication.

Foreigners by sex and age

Counts by sex

Table 1 shows the average number of foreigners **registered for old-age and invalidity insurance** by insurance title (natural persons, employees and self-employed persons outside the agricultural sector), by population (in total and citizens of Ukraine) and by sex. The monthly data reflect register counts at the end of February, March and April. The columns March-February and April-February show the difference between the number of foreigners registered at the end of these months. The biggest declines observed for natural persons and employees, were already visible for March. In contrast, there are slight increases in the number of self-employed foreigners.

Table 1: The number of foreigners registered for old-age and invalidity insurance by insurance title, population and sex at the end of February, March and April 2020.

Title	Population	Sex	February	March	April	March - February	April - February
Natural persons	Total	Women	224 734	217 986	203 270	-6 748	-21 464
		Men	445 329	444 157	418 934	-1 172	-26 395
	Ukraine	Women	176 335	169 656	155 878	-6 679	-20 457
		Men	316 762	315 056	293 379	-1 706	-23 383
Employees	Total	Women	117 697	116 607	111 734	-1 090	-5 963
		Men	281 044	281 604	271 135	560	-9 909
	Ukraine	Women	85 801	84 604	80 192	-1 197	-5 609
		Men	193 561	193 683	184 981	122	-8 580
Self-employed	Total	Women	5 477	5 468	5 539	-9	62
		Men	14 184	14 235	14 426	51	242
	Ukraine	Women	2 090	2 100	2 137	10	47
		Men	2 947	2 966	3 045	19	98

Source: based on ZUS data.

Counts by age

Table 2 shows the number of foreigners registered for old-age and invalidity insurance by insurance title (natural persons, employees and self-employed persons), by population (in total and citizens of Ukraine) and by age. The monthly data reflect register counts at the end of February, March and April. The columns March-February and April-February show the difference between the number of foreigners registered at the end of these months.

Most declines can be observed among foreigners aged 20-54, with the biggest one recorded in among those aged 20-24 and 24-29. As in the previous table, decreases are mainly visible for natural persons.

A more in-depth analysis of data by sex, age and citizenship is presented in the following section.

Table 2: The number of foreigners registered for old-age and invalidity insurance by insurance title, population and age at the end of February, March and April 2020.

Title	Population	Age group	February	March	April	March - February	April - February
Natural persons	Total	19 and younger	4 323	4 328	3 798	5	-525
		20-24	64 435	63 595	57 377	-840	-7 058
		25-29	111 478	110 525	103 815	-953	-7 663
		30-34	111 915	111 369	105 839	-546	-6 076
		35-39	102 235	101 655	96 564	-580	-5 671
		40-44	92 040	90 894	85 886	-1 146	-6 154

		45-49	80 427	78 979	73 822	-1 448	-6 605
		50-54	54 841	53 679	50 474	-1 162	-4 367
		55-59	31 267	30 417	28 635	-850	-2 632
		60-64	12 560	12 242	11 653	-318	-907
		65 and older	4 651	4 570	4 451	-81	-200
	Ukraine	19 and younger	3 678	3 662	3 154	-16	-524
		20-24	53 707	52 776	47 123	-931	-6 584
		25-29	83 630	82 489	76 592	-1 141	-7 038
		30-34	79 124	78 382	73 536	-742	-5 588
		35-39	72 820	72 144	67 601	-676	-5 219
		40-44	68 336	67 071	62 642	-1 265	-5 694
		45-49	60 687	59 318	54 704	-1 369	-5 983
		50-54	40 381	39 276	36 466	-1 105	-3 915
		55-59	21 738	20 926	19 381	-812	-2 357
		60-64	7 334	7 060	6 532	-274	-802
		65 and older	1 703	1 649	1 567	-54	-136
Employees	Total	19 and younger	1 840	1 896	1 726	56	-114
		20-24	31 535	31 645	29 460	110	-2 075
		25-29	67 504	67 424	64 757	-80	-2 747
		30-34	71 961	71 974	69 669	13	-2 292
		35-39	64 593	64 661	62 586	68	-2 007
		40-44	55 238	55 201	53 370	-37	-1 868
		45-49	47 251	46 954	44 982	-297	-2 269
		50-54	31 618	31 473	30 270	-145	-1 348
		55-59	17 546	17 432	16 770	-114	-776
		60-64	7 076	7 001	6 772	-75	-304
		65 and older	2 619	2 590	2 547	-29	-72
	Ukraine	19 and younger	1 464	1 504	1 347	40	-117
		20-24	25 298	25 262	23 328	-36	-1 970
		25-29	48 238	47 937	45 664	-301	-2 574
		30-34	48 045	47 948	45 992	-97	-2 053
		35-39	43 671	43 689	41 901	18	-1 770
		40-44	39 200	39 091	37 544	-109	-1 656
		45-49	34 403	34 137	32 452	-266	-1 951
		50-54	22 561	22 417	21 409	-144	-1 152
		55-59	11 630	11 520	10 980	-110	-650
		60-64	3 920	3 858	3 661	-62	-259
		65 and older	944	936	907	-8	-37
Self-employed	Total	19 and younger	43	45	46	2	3
		20-24	371	392	411	21	40
		25-29	1 366	1 395	1 431	29	65
		30-34	2 474	2 511	2 569	37	95
		35-39	3 149	3 159	3 217	10	68
		40-44	3 241	3 236	3 300	-5	59
		45-49	3 081	3 080	3 117	-1	36
		50-54	2 640	2 622	2 624	-18	-16
		55-59	1 889	1 882	1 882	-7	-7
		60-64	1 047	1 037	1 026	-10	-21
		65 and older	386	371	369	-15	-17
	Ukraine	19 and younger	0	0	0	0	0

20-24	171	181	189	10	18
25-29	509	515	532	6	23
30-34	737	754	775	17	38
35-39	888	884	905	-4	17
40-44	876	878	899	2	23
45-49	776	777	799	1	23
50-54	541	538	544	-3	3
55-59	360	361	365	1	5
60-64	144	143	140	-1	-4
65 and older	35	35	34	0	-1

Source: based on ZUS data.

Foreigners by sex and age – detailed analysis

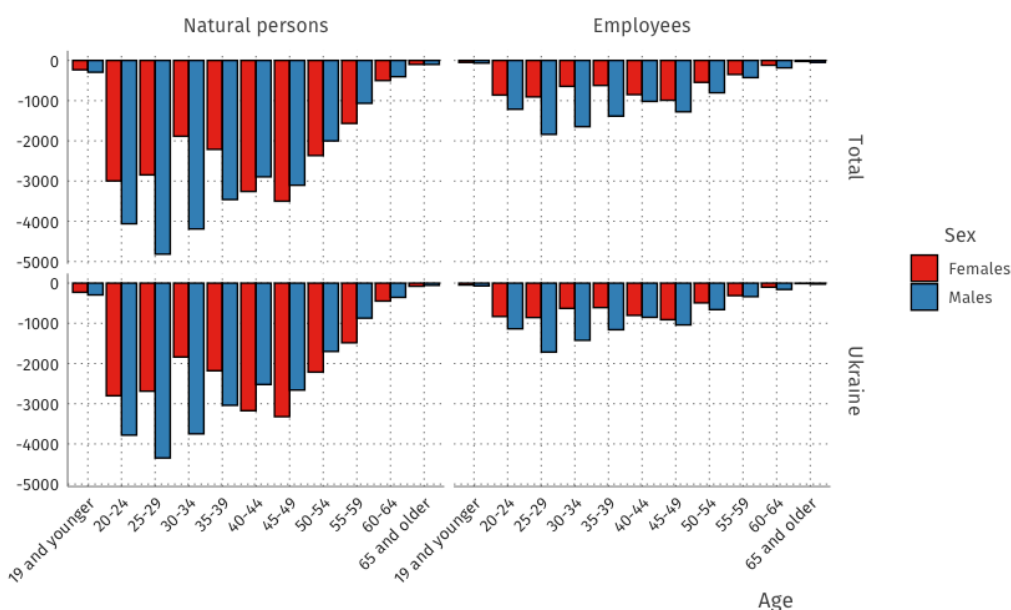
The figures below show a synthetic overview of ZUS data by sex, age and citizenship.

Figure 1 shows a decline in the number of foreigners **registered for old-age and invalidity insurance** by sex, age and insurance title and citizenship. In the case of younger foreigners (up to the age of 40), the biggest declines in absolute terms can be observed for men (blue bars). In the case of foreigners above the age of 40, this pattern is reversed, i.e. the biggest decreases involve women (red bars). This trend is evident for natural persons and employees (for the total foreign population and for citizens of Ukraine).

Figures 2 and 3 present a comparison between the sexes across **age groups** for natural persons and employees in relative terms. Values in the figures represent relative decreases in the number of insured persons compared to reference levels from February 2020. Although in absolute terms the decline in the number of men is bigger, in relative terms, it is considerable bigger for women. There are differences in percentage shares between women and men for all age groups, which increase with age and reach their maximum after the age of 40.

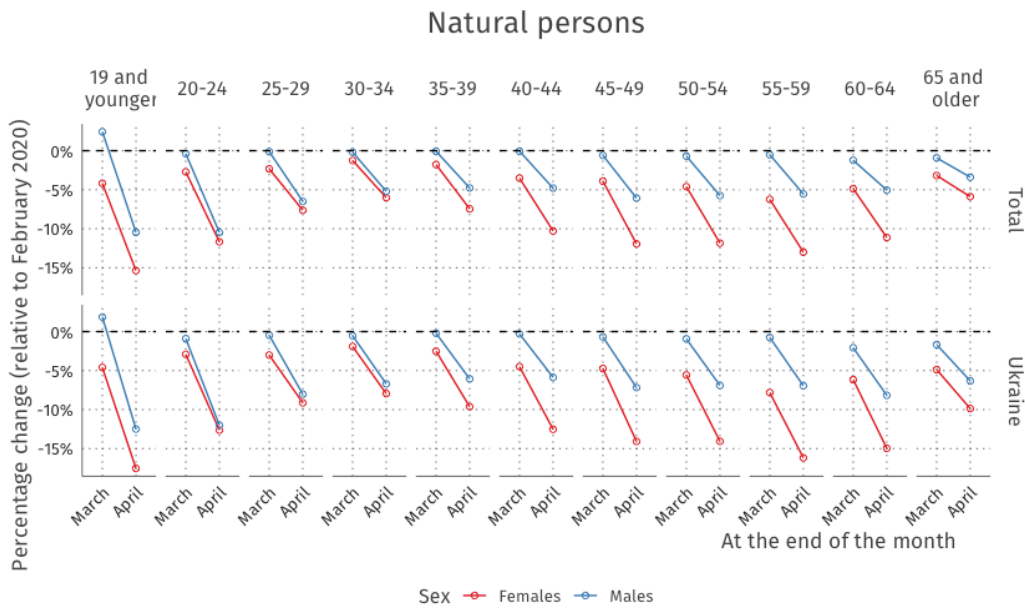
In order to highlight the fact that the changes are recorded mainly in the population of foreign women above the age of 40, Figure 4 presents two insights: changes in the employment structure (the relationship between men and women) and the relationship between declines in specific age groups

Figure 1: A decline in the number of foreigners registered for old-age and invalidity insurance by insurance title, sex, age and citizenship at the end of April relative to February 2020 (in absolute terms)



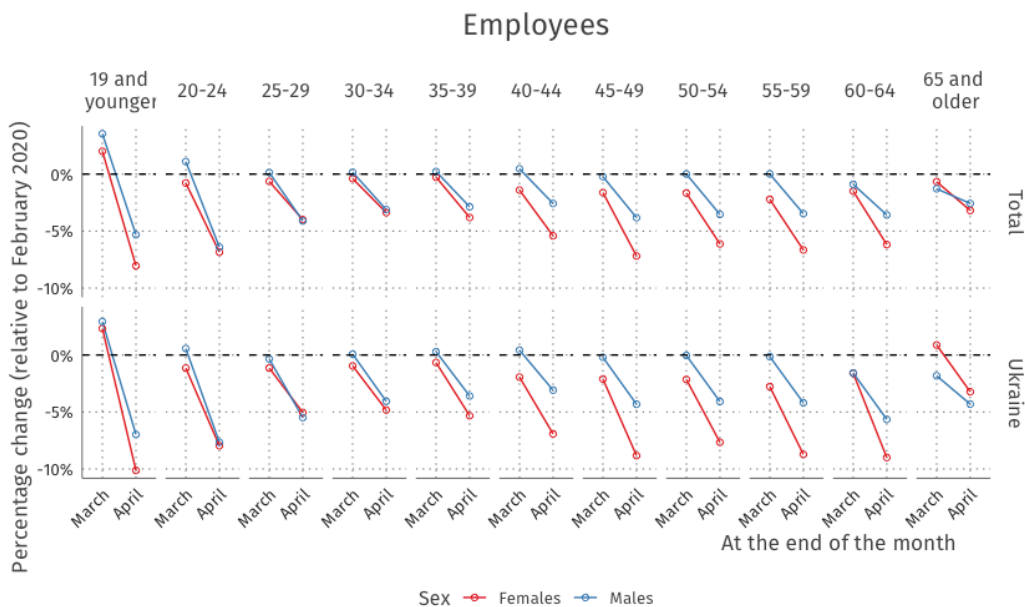
Source: based on ZUS data.

Figure 2: A decline in the number of foreigners (natural persons) registered for old-age and invalidity insurance by sex and age at the end of March and April relative to February 2020 (in relative terms)



Source: based on ZUS data.

Figure 3: A decline in the number of foreigners (employees) registered for old-age and invalidity insurance by sex and age at the end of March and April relative to February 2020 (in relative terms)



Source: based on ZUS data.

Figure 4: A decline in the number of foreigners (employees) registered for old-age and invalidity insurance by sex and age



Source: based on ZUS data.

Foreigners by NACE section

Data quality

This sections contains information about declines in the number of foreigners by NACE section. The first thing to notice is that in the case of 27 thousand foreigners ZUS data do not contain information about the industry in which a given foreigner is employed (Table 3). Consequently, values in Table 4 do not add up to those presented in Tables 1-3.

Table 2: Quality of ZUS data concerning information about NACE sections by citizenship at the end of February, March and April.

Month	Popula- tion	Total	NACE section available	NACE section unavailable
February	Total	670 172	642 861	27 311
	Ukraine	493 138	473 897	19 241
March	Total	662 253	633 953	28 300
	Ukraine	484 753	464 710	20 043
April	Total	622 314	594 606	27 708
	Ukraine	449 298	429 897	19 401

Source: based on ZUS data.

Basic information

Table 4 presents the number of foreigners (natural persons) **registered for old-age and invalidity insurance** by population (the total foreign population and citizens of Ukraine) and NACE section. The monthly data reflect register counts at the end of February, March and April. The columns March-February and April-February show the difference between the number of foreigners registered at the end of these months. The table shows all sections, while the figures only present sections with the largest shares of foreigners.

The table presents data for the following NACE sections:

- Section A – Agriculture, forestry and fishing
- Section B – Mining and quarrying
- Section C – Manufacturing

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

The biggest decline, already observed already at the end of March, exists for sections N (Administrative and support service activities), I (Accommodation and food service activities), C (Manufacturing) and F (Construction). Most decreases affected businesses involved in administrative and support service activities, which includes employment agencies. It should therefore be remembered that decreases can also affect other sections where foreigners are actually employed.

Slight increases have been recorded for section J (Information and communication), where the decline involves foreigners who are not citizens of Ukraine and section O (Public administration and defence; compulsory social security).

Table 3: The number of foreigners (natural persons) registered for old-age and invalidity insurance by NACE section and population at the end of February, March and April.

Section	Population	February	March	April	Difference (March - February)	Difference (April - February)
A	Total	4 710	5 088	4 552	378	-158
	Ukraine	4 047	4 394	3 877	347	-170
B	Total	718	735	693	17	-25
	Ukraine	552	574	531	22	-21
C	Total	111 451	110 140	104 056	-1 311	-7 395
	Ukraine	89 042	87 662	82 261	-1 380	-6 781
D	Total	366	370	369	4	3
	Ukraine	203	206	204	3	1
E	Total	2 615	2 615	2 475	0	-140
	Ukraine	2 153	2 133	2 013	-20	-140
F	Total	85 810	88 039	83 251	2 229	-2 559
	Ukraine	72 343	74 544	70 390	2 201	-1 953
G	Total	59 772	60 010	58 461	238	-1 311
	Ukraine	36 086	36 345	34 970	259	-1 116
H	Total	91 878	91 947	88 752	69	-3 126
	Ukraine	70 060	69 866	67 062	-194	-2 998
I	Total	37 830	36 281	33 781	-1 549	-4 049
	Ukraine	24 374	22 994	20 983	-1 380	-3 391
J	Total	19 631	19 922	19 681	291	50
	Ukraine	7 349	7 446	7 302	97	-47
	Total	5 456	5 410	5 329	-46	-127

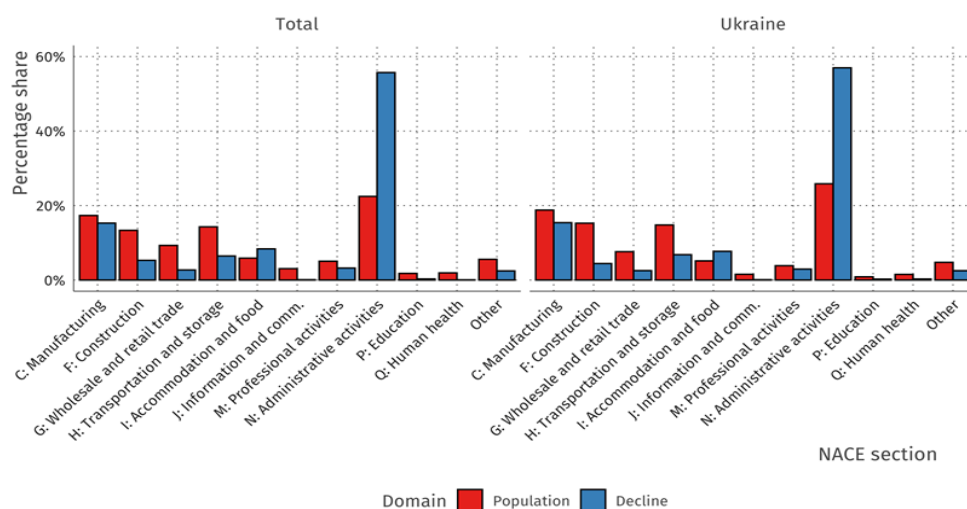
K	Ukraine	2 183	2 100	2 022	-83	-161
L	Total	4 659	4 658	4 427	-1	-232
	Ukraine	3 065	3 053	2 850	-12	-215
M	Total	32 495	32 185	30 938	-310	-1 557
	Ukraine	18 263	17 995	16 969	-268	-1 294
N	Total	144 366	135 401	117 427	-8 965	-26 939
	Ukraine	122 515	113 762	97 441	-8 753	-25 074
O	Total	1 829	1 838	1 908	9	79
	Ukraine	636	655	680	19	44
P	Total	11 463	11 439	11 316	-24	-147
	Ukraine	4 121	4 099	4 005	-22	-116
Q	Total	12 390	12 427	12 356	37	-34
	Ukraine	7 202	7 200	7 074	-2	-128
R	Total	3 698	3 683	3 503	-15	-195
	Ukraine	1 793	1 754	1 695	-39	-98
S	Total	11 606	11 648	11 212	42	-394
	Ukraine	7 897	7 915	7 555	18	-342
T	Total	4	4	4	0	0
	Ukraine	4	4	4	0	0
U	Total	114	113	115	-1	1
	Ukraine	9	9	9	0	0

Source: based on ZUS data.

Detailed analysis

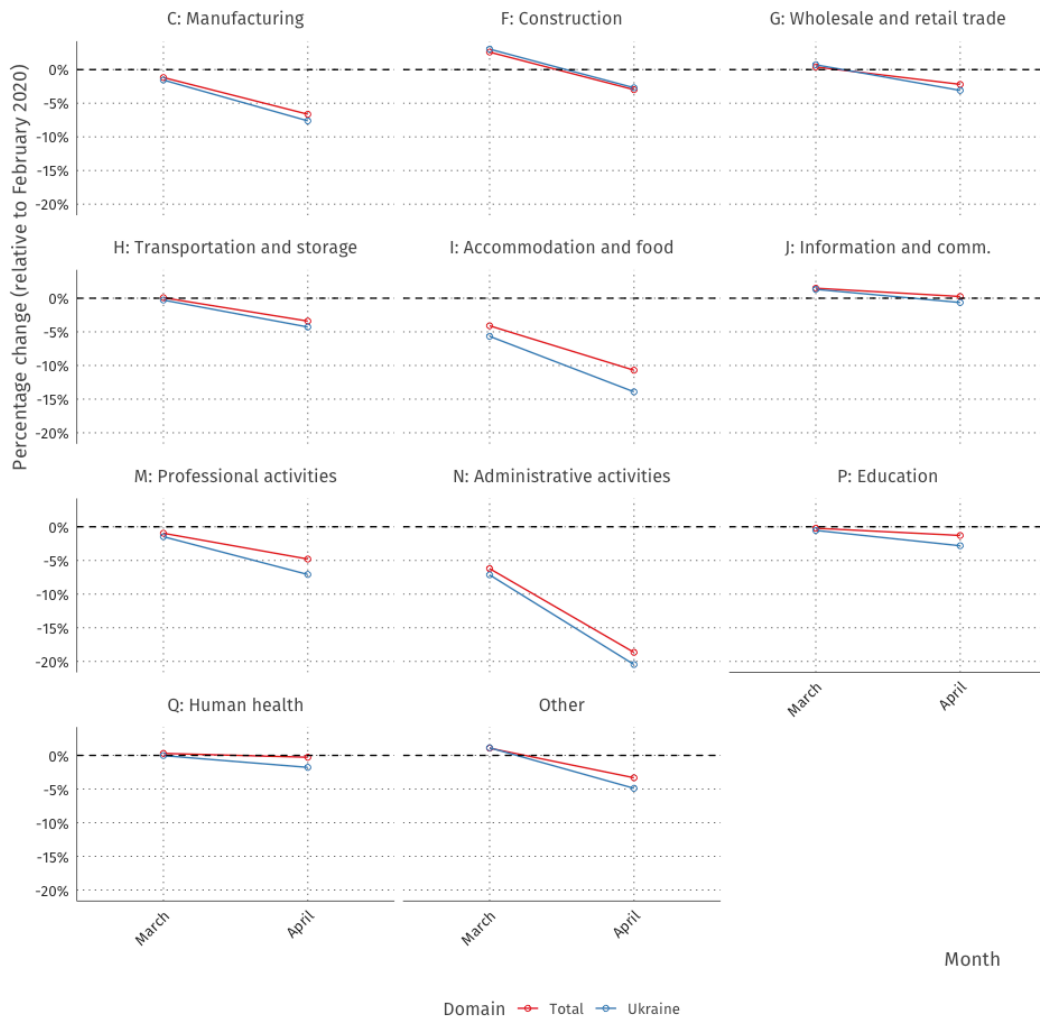
Figure 5 shows a comparison of percentage shares of foreigners (natural persons) registered for insurance at the end of February (red bars) and percentage declines recorded between February and April (blue bars) for different NACE sections. There are considerable differences between these two groups, which indicate that decreases were mainly observed among foreigners employed by recruitment agencies (section N, nearly 60% of foreigners) and companies providing accommodation and food service activities (section I). As regards the other sections, their share in the decline was smaller than the share in employment at the end of February 2020. Figure 6, presenting information about the decrease for the biggest NACE sections, confirms the previous findings.

Figure 5: A comparison between shares of foreigners (natural persons) registered for old-age and invalidity insurance at the end of February and those involved in the decline (difference between the population in April and that in February) by population and NACE section



Source: based on ZUS data.

Figure 6: Changes in the number of foreigners (natural persons) registered for old-age and invalidity insurance by sex and age



Source: based on ZUS data.

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The report was elaborated by :
dr Maciej Beręsewicz – Centre for Small Area Estimation, Statistical Office in Poznań

Distribution:
Spokesperson for the President of Statistics Poland
Karolina Banaszek
Tel: 695 255 011

Translation:

Grzegorz Grygiel – Centre for Small Area Estimation, Statistical Office in Poznań

Public Relations Department

Tel: 22 608 34 91, 22 608 38 04

e-mail: obslugaprasowa@stat.gov.pl



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Key concepts explained in the glossary

Concepts and terms used in official statistics

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