IARIW 2022

Monday 22 - Friday 26 August

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Paper prepared for the 37th IARIW General Conference

August 22-26, 2022

Session 4B-1, Measuring the Self-Employed, Contract Work, and Gig Workers I

Time: Wednesday, August 24, 2022 [14:00-15:30 CEST]

Development of self-employed in Hungary before and during Covid-19 pandemic related to selected economic activities

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Abstract

The Covid19 pandemic shocked the labour market in 2020. The effect differed across employment statuses and sectors. In our study, we analysed the impact on the development of the number of self-employed in four selected economic branches. We examined the number of individuals reallocating across sectors and employment statuses. To measure the influence of the pandemic, we contrasted data from the last year without Covid19 (2019) to data from 2020. We found evidence on the impact of the pandemic on the development of self-employed in Hungary. Sole proprietors reacted to the effects of Covid19 and the associated pandemic measures. We observed reallocation across employment statuses and sectors. However, the observed changes in the dynamics were insignificant in cross-sector reallocation across the two periods.

Keyword: Self-employed, Covid-19 pandemic, reallocation, Hungary

1. Introduction

The development of the labour market is influenced by many trends and factors. However, an unforeseen event has disrupted the market in the recent years. In 2020, a new coronavirus disease has spread around the world leading to a global crisis. The World Health Organization declared Covid-19 as a pandemic on the 11th of March. Policymakers around the world have introduced containment measures to limit the transmission of the virus. The Covid-19 and the imposed pandemic measures harmed the global economy causing a decrease in economic performance. The pandemic and the associated restrictive measures also shocked the labour market, affecting the lives of both employees and self-employed. The impact varied across economic sectors. Some sectors were hit hard by the closures and restrictions of business activities caused by the pandemic. Governments tried to mitigate the negative impacts by introducing supportive schemes. On the other hand, some sectors could benefit from trends accelerated by the challenges due to the Covid19 pandemic, such as digitalization and remote working.

The Covid-19 pandemic hit Hungary in two waves in 2020. The first wave of Covid-19 reached Hungary at the beginning of March 2020. The Hungarian Government declared a state of emergency on the 11th of March. Restrictive measures were introduced in March and April, including closing borders, limiting opening hours of stores, providing special shopping hours for senior citizens, imposing curfew restrictions, and close-down for restaurants. Restrictive measures were eased and lifted in May and June and finally, the state of emergency was terminated on 18 June. The second wave of the Covid-19 pandemic reached the country in the fall of 2020 when infections surged again. On 4 November 2020, the Hungarian Government re-announced the state of emergency. Containment measures were re-introduced in November and December, such as restricted opening hours of shops, limited curfew, and close-down for restaurants. During the two waves of Covid19, many had to suspend or reduce their economic activity.

The number of sole proprietors is significant in Hungary, although their contribution to GDP is less significant. Their numbers are particularly high in some economic sections of the national economy, such as professional, scientific and technical activities; construction; wholesale and retail trade, repair of motor vehicles and motorcycles; and other service activities. The impact of Covid19 and the associated restrictive measures affected sole proprietors differently across economic sectors. Some sole proprietors, such as those working in the accommodation and food service activities economic section, clearly suffered during this period. Others, for example, self-employed people in the transportation and storage economic section experienced positive effects too.

We chose the following four economic branches to analyse: transportation and storage, accommodation and food service activities, IT and other information services, and human health services. Our findings are based on the change in the number of self-employed and employees and their dynamics across sectors between the years 2018, 2019, and 2020. Data sources in our analysis are the Statistical Business Register (SBR) and Institutional Labour Data based on the Social Security Contribution Report of the National Tax Authority. We expect reallocation in the labour market, both across sectors and between the forms of employment. Covid19 and the pandemic measures hit hard sectors accommodation and food service activities, and human health services, while the effect was not as bad or even beneficial in sectors transportation and storage, and IT and other information services. Based on these four economic branches, we examined to what extent entrepreneurship has become an alternative livelihood for those who lost their job or had to work reduced hours. Have those who worked as employees in the accommodation and food service activities sector become self-employed, or have they also become sole proprietors in parallel with their employee statuses? Which economic branches did they choose? Are the increased number of self-employed in the sectors of transportation and storage, and IT and other information services related to this dynamic (e.g. did waiters become couriers)? If not, who chose to be sole proprietors in these sectors? The pandemic also placed a heavy burden on public health care, which led to backlogs of services and growing waiting lists. Due to the increased demand for private health care, has the number of self-employed increased in the human health services sector? Based on the answers to these questions, we can decide whether the Hungarian labour market, particularly sole proprietors reacted flexibly to the effects of Covid19 and imposed pandemic measures.

We proceed as follows. First, based on existing studies, we discuss the impacts of the pandemic and restrictive measures on labour market, with particular regard to self-employed in section 2. We then discuss data in section 3. Section 4 offers our main results of the development of self-employed in selected economic branches in Hungary before and during Covid19. We draw conclusions in Section 5. Finally, section 6 gives a short summary.

2. Literature review

There is a large number of studies that documented the impact of Covid19 and the associated restrictive measures on labour market. International Labour Organization released the first edition of their ILO monitor that focused exclusively on the impact of the pandemic on the labour market in March 2020 (ILO, 2020). In the study, ILO predicted a serious negative impact on the global labour market, but they underestimated the influence. According to ILO (2021), the global labour income declined by 8.3%. The global unemployment rate increased by 1.1 percentage points to 6.5%, while the labour force participation rate decreased by 2.2 percentage points to 58.7% in 2020. Based on the results, they argued that the losses in global employment "translated into rising inactivity rather than unemployment" (ILO, 2020 p. 11). However, they noted that unemployment rose more than inactivity in the United States, which was due to the differences in the use of job retention schemes. As Gros and Ounnas (2021) discussed, European Union countries used short-term work schemes to prevent workers from losing their jobs, and this is the main reason behind the difference in the development of the unemployment rate in the US and EU. This kind of government support – which was used in Hungary too – could have a reducing effect on labour market reallocation.

Considering social protection schemes, Battista (2020) discussed that governments had to introduce new protective measures to mitigate the Covid19 impact on sole proprietors because self-employed workers in EU countries are less protected than employees due to their special situations (i.e. lower level of social protection). Similarly, Adams-Prassl et al. (2020) found that workers in alternative work arrangements, such as self-employed, were more likely to experience job and earning losses. In Hungary, self-employed, similar to employees, are provided with statutory access to all insurance-based schemes, that is, sickness, unemployment and accident at work, and occupational injuries benefits (Spasova – Wilkens, 2018). Even if sole proprietors are well insured in some countries, they lost so much income that governments had to introduce supportive programs (e.g. tax deferrals and exemptions, one-off cash transfers, etc.), and even so, several self-employed people could not cover their living expenses (Battista, 2020).

The impact of Covid19 and pandemic measures on self-employed is well documented in many countries. Several papers focused on differential effects by individual characteristics, such as gender, parental status, education, or income level. Based on early results, Fairlie (2020) found that the number of self-employed dropped from February to April 2020 in the US. Fairlie (2020) also examined differences in the effect of the pandemic across gender and races and found that female self-employed, and those belonging to racial minorities were hit harder. Kalenkoski – Pabilonia (2020) considered differential effects by couple status and parental status besides gender. Graeber – Kritikos – Seebauer (2021) analysed the influence of lockdowns on female self-employed in Germany, and pointed out that "self-employed women work disproportionately often in industries that are more severely affected by the COVID-19 pandemic than men" (Graeber – Kritikos – Seebauer, 2021 p.1171). By examining Canadian labour data during Covid19, Beland – Fakorede – Mikola (2020) found that the increase in unemployment and decrease in labour force participation and actual hours worked were more severe among female, immigrants, and less-educated sole proprietors. Based on early results of the influence of Covid19 on self-employed in the United Kingdom, Blundell – Machin (2020) argued that the negative effects were more serious among women, lower-income, older and single people.

Sectoral differences in the effect of the pandemic and restrictive measures on self-employed were also documented. Blundell – Machin – Ventura (2020) found that more than a quarter of sole proprietors who find work through applications (also known as gig workers), such as food and parcel delivery and private-hire drivers (i.e. those belonging to the transportation and storage economic section) worked more in 2020 August compared to the same month of the previous year. This growth is related to the increase in demand for their services due to the growth in online shopping and distance keeping. According to Apouey et al. (2020), some gig workers expected increasing income due to growing demand. However, they found that only a small proportion of gig workers reported an increase in income, for one-third of the workers it remained the same, and the majority reported a decrease. Reuschke – Henley – Daniel (2020) discussed that self-employed were hit less in sectors of education; human health and social work; public administration; and advanced sector services. The latter group comprises sectors of administrative and support services; information and communication; professional, scientific and technical services; and financial, insurance and real estate services, where sole proprietors could easily switch to home office. Self-employed workers belonging to this group could maintain, or even increase their earnings. On the other hand, self-employed in the sectors of art and entertainment; manufacturing; construction; transport and storage; and other services were the most severely affected. According to Block et al. (2020), self-employed working industries like tourism, restaurants, and events suffered the most severe hit, while those in manufacturing, trade, health and social care, education, professional services, information and communication were less affected. In Hungary, Tóth – Kálmán – Poór (2021) found that the total number of self-employed decreased in the second quarter of 2020. The greatest drop was in manufacturing; industry (except construction); wholesale and retail trade, transport, accommodation, and food service activities economic section. An increase in the number of self-employed was observed in agriculture, forestry, and fishing; and construction sections.

Some papers documented reallocation in the labour market due to Covid19 lockdowns. Anayi et al. (2021) argues that job reallocation across industries doubled compared to the pre-Covid19 average in the UK and US. According to Barrero et al. (2021, p. 5.), “relative employment growth trends shifted towards industries with a high capacity of employees to work from home”. They found that the leisure and hospitality industry suffered the hardest hit during Covid19, followed by the construction, and real estate and rental industries. The greatest employment growth rate was in the information industry, while it was also positive in education, professional and business services, nondurable manufacturing, and finance and insurance.

Carrillo-Tudela et al. (2021) discusses that the target sectors of job searchers in the UK were those that could grow during the pandemic. The increased net mobility across industries suggests that workers left badly hit sectors to join better-performing sectors. However, gross mobility decreased, suggesting a reduced willingness to switch sectors during Covid19. “The decrease in gross mobility then suggests that many individuals decided not to reallocate during the pandemic, perhaps waiting for the recovery to change careers and/or due to the effects of the Job Retention Scheme, which kept a significant part of the employment population in their jobs.” (Carrillo-Tudela et al, 2021 p. 26.). They found accommodation and food as the hardest hit industry, followed by wholesale, and manufacturing. The greatest increase in employment was in the industry of public administration, while it was also positive in the group of IT, finance, professional, scientific, and technical services industry, as well as in natural resources, and education industries. Kónya – Krekó (2021) analysed data on employees in Hungary and found that there was reallocation in the labour market. The greatest loss in the number of employees was in wholesale and retail trade, and food services activities and they observed the greatest increase in the number of highly qualified executives and software developers.

Based on the literature, Covid19 and the associated restriction measures shocked the labour market, which was more severe for sole proprietors than employees. The effect on self-employed differs by individual characteristics, such as gender, parental status, income, and education level, and also differs by sector. The fact that some sectors were hit harder than others suggests that there was a labour market reallocation during Covid19. However, governmental support that aimed to mitigate the negative impact of the pandemic had a reducing effect on reallocation too. In our paper, we study if the development in the number of self-employment in Hungary suggests a labour market reallocation, and if so, then how significant is the reallocation.

3. Data

We used Statistical Business Register (SBR) and Institutional Labour Data based on the Social Security Contribution Report of the National Tax Authority to analyse the impact of the Covid19 pandemic and restriction measures on the Hungarian labour market, particularly on self-employed. The former data source contains daily updated information on the legal form, status, and regional data of all organizations with tax numbers in Hungary. The latter data source consists of two data collection: one is the social security contribution of employees reported by employers (report ’08), other is the social security contribution of self-employed reported by themselves (report ’58). A significant proportion of self-employed are not obliged to fill out report ’58 as they are not paying social security contributions separately, instead, they pay the Fixed-Rate Tax of Low Tax-Bracket Enterprises and on Small Business Tax (Hungarian abbreviation: KATA). Therefore, we had to correct data on self-employed by including KATA payers. The social security contribution database consists of individual data, where individuals could appear several times if they have several simultaneous employment statuses, therefore, we aggregated these entries on individual level. Although we know that it results in information loss, we only kept one entry for every individual. This step was necessary, so we could allocate every individual to an economic branch. The best approach would have been to keep that form of employment that results in the greatest amount of income for an individual, however, we have no such information on KATA payers, which is a very significant group among self-employed. There was no good solution for this issue, we decided to keep those statuses that belong to service sectors.

We examined the data for 2020, as it was the year when Covid19 spread all over the world. We also looked at the data for 2019, so we could compare 2020 with a year that was not influenced by the pandemic. In the case of SBR, we have the latest data on self-employed for all of the years. As for the other data source, we have monthly data, where if individuals appeared in any month of a particular year, then we included them in our study. We took into account the most recent data regarding their economic activity for all years.

In our study, we analysed sole proprietors classified by economic activities aggregated into 38 branches (A38 of NACE). Our focus was on four NACE branches that we expected to be most affected by the Covid19 pandemic. Undoubtedly, Accommodation and food service activities (branch I in A38 level of NACE) belongs to the worst affected sectors. We also examined Transportation and storage (branch H) and IT and other information services (branch JC) sectors, which might be positively influenced by Covid19. Lastly, we took a look at the Human health services (branch QA) sector that had an important role during the pandemic.

4. Results

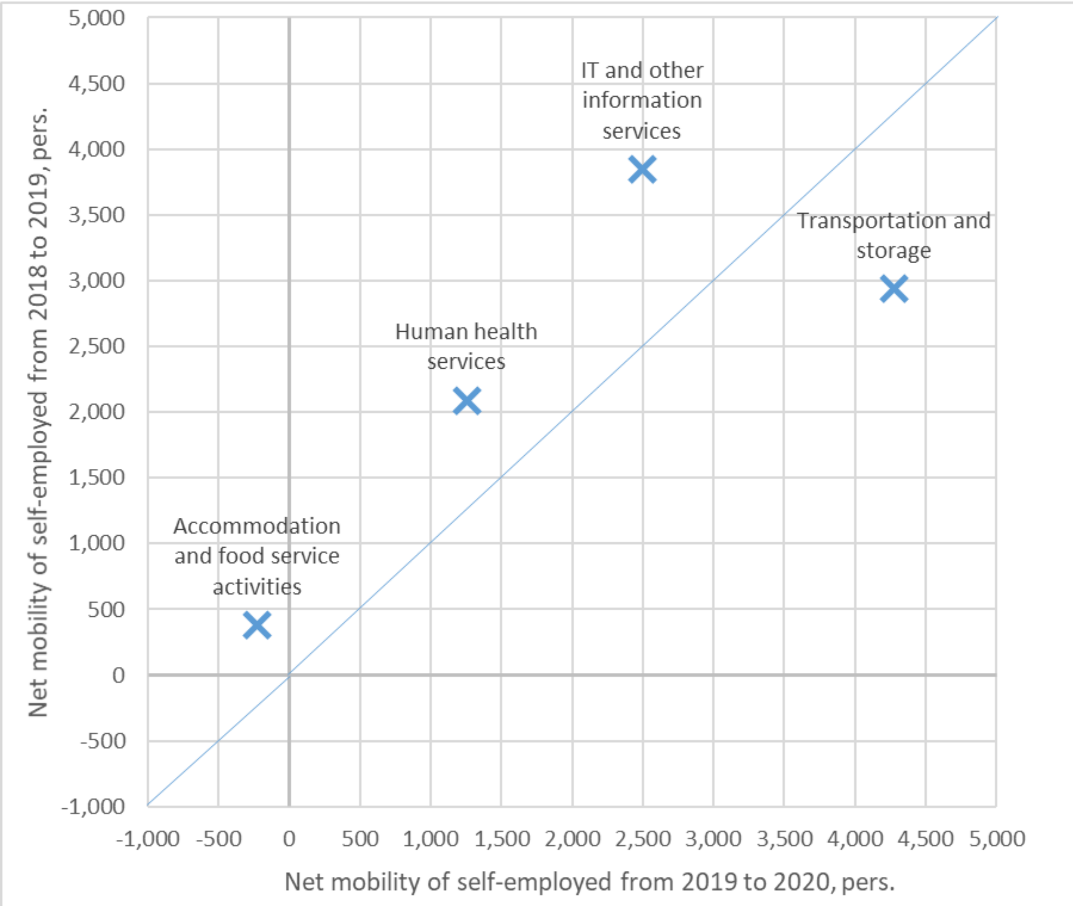
If Covid19 and the pandemic measures have affected sole proprietors, then it must be reflected in their numbers. This section consists of four subsections. First, we analysed the development of self-employed workers and their cross-sector movement in subsection 4.1. Then we examined the development in reallocation from employee status to self-employed in subsection 4.2. In subsection 4.3, we looked at the change in the number of people who gave up their simultaneous employment statuses to fully pursue their self-employed careers. Lastly, we examined the development in the number of those individuals, who decided to start a self-employed career parallel to their employee statuses in subsection 4.4.

4.1 Development of self-employed and cross-sector movement

Firstly, we examined the development of the number of self-employed in the four selected economic branches. The headcounts increased in almost all four sectors, except accommodation and food service activities in 2020. However, we can not draw any conclusions without comparing the results to the dynamics of a pre-Covid19 year. The growth was greater in sectors of IT and other information services and human health services in 2019. The increase in the number of sole proprietors accelerated only in the transportation and storage sector. The number of self-employed in accommodation and food services remained at the same level in both periods. Among the four selected sectors, the transportation and storage was the most, while the accommodation and food services was the least populated economic branches in 2018. Both sectors maintained their positions throughout the two periods. The gap in the number of sole proprietors between the economic branches widened as their number stagnated in the accommodation and food services and grew at an increasing rate in the transportation and storage sector. We can conclude that Covid19 and the imposed restrictive measures slowed down the growth in the number of self-employed in sectors of IT and other information services and human health services. On the other hand, it accelerated the increase in the transportation and storage economic branch.

We looked at the development in the net and the gross mobility by examining the dynamics in the number of sole proprietors who entered or left the selected economic branches. Net mobility decreased in every sector except transportation and storage from 2019 to 2020. At the same time, gross mobility increased in every branch. Net and gross mobility are shown in Figure 1 and Figure 2.

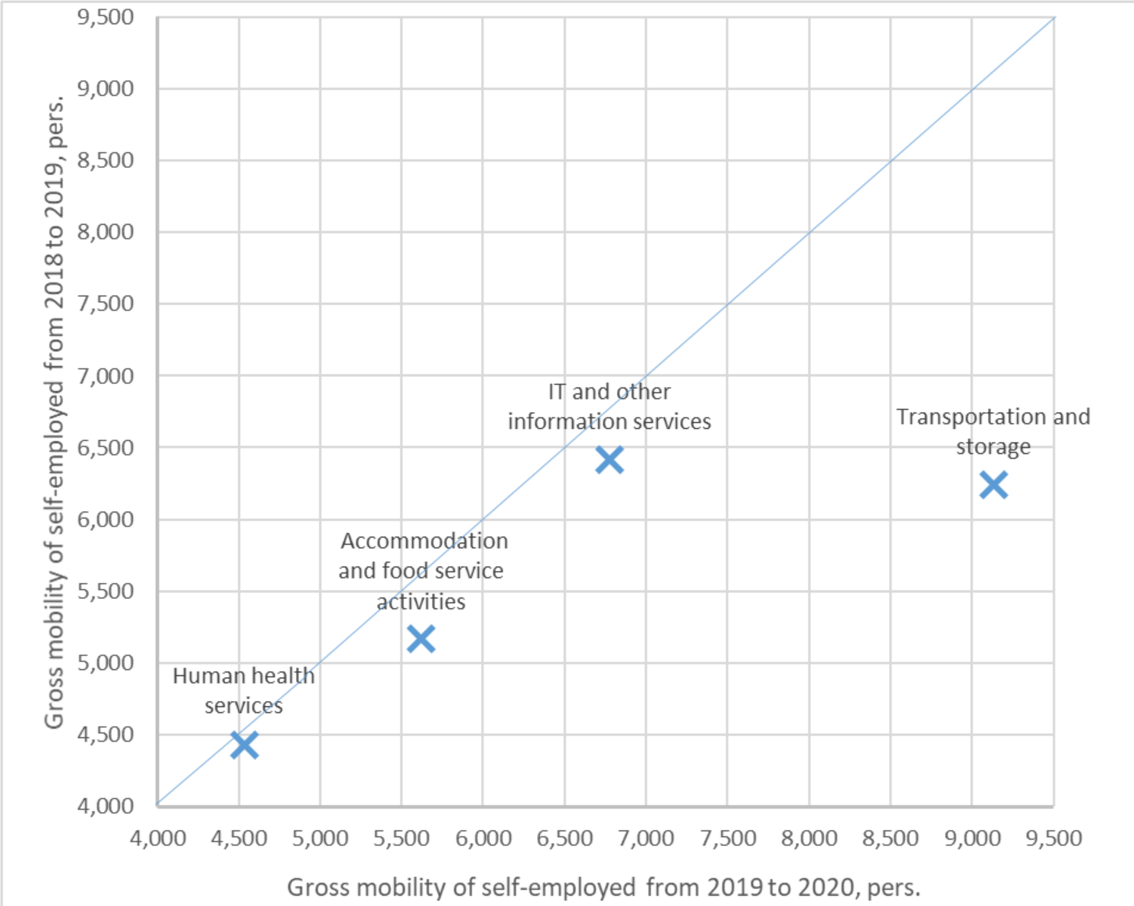
Figure 1: Net mobility in selected sectors



Source: own elaboration

Mobility in the number of self-employed increased in economic branches that are below the 45-degree line, while there was a decrease in sectors, which are above the line.

Figure 2: Gross mobility in selected sectors



Source: own elaboration

Gross mobility increased in every economic branch, despite fewer individuals became self-employed in the selected sectors in 2020, except for transportation and storage. The increase in the number of new entrants to the transportation and storage sector was close to 50%. The number of individuals who left the sectors increased in all four cases. The number of people who left accommodation and food service activities was greater than the number of people entering the sector, therefore, resulting in negative net growth in the number of self-employed. The number of sole proprietors who entered or left the selected sectors is presented in Table 1.

We also examined cross-sector movement, though, the number of self-employed entering the chosen sectors by leaving another or leaving the selected sectors and joining another was less significant in both Covid19-affected and pre-Covid19 years. Therefore, most of the entrants were not in self-employed status a year earlier, while most of those who left the selected sectors also stopped being sole proprietors. The results are given in Table 1.

Table 1: The number of people who left or joined selected sectors

Number of people left:					
Period	Movement	*Trasp.*	*Accomm.*	*IT*	*H. health*
From 2018 to 2019	Total	1,652	2,391	1,283	1,171
	Of which: to another sector*	184	545	111	196
From 2019 to 2020	Total	2,427	2,925	2,142	1,638
	Of which: to another sector*	232	628	139	202

Number of people entered:					
Period	Movement	*Trasp.*	*Accomm.*	*IT*	*H. health*
From 2018 to 2019	Total	4,593	2,776	5,131	3,262
	Of which: from another sector**	331	335	375	335
From 2019 to 2020	Total	6,708	2,698	4,637	2,895
	Of which: from another sector**	403	354	420	382

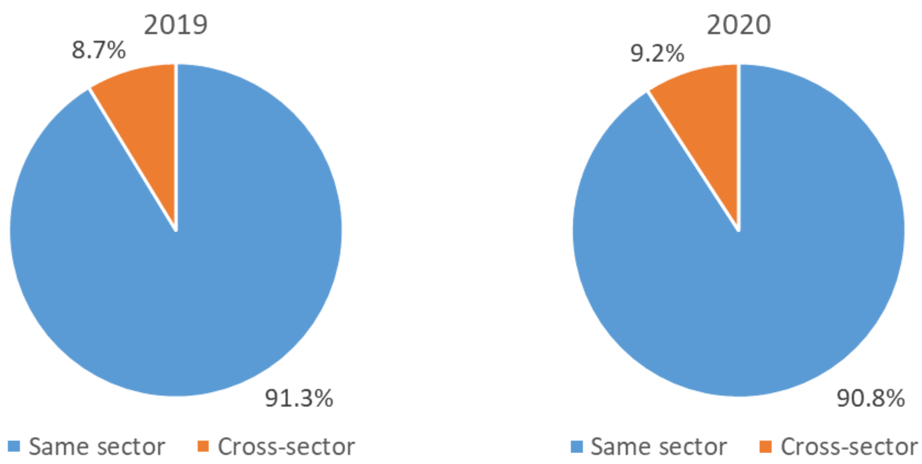
Notes: *The rest of the total left self-employed status (e.g. by termination without legal successor). **The rest of the total had no self-employment status before (e.g. worked as an employee)

Source: own elaboration

Only a few hundred self-employed switched sectors in the examined periods. The largest proportion of those who changed economic branch was in accommodation and food service activities, where more than 20% left the sector to become sole proprietors in another. The absolute value of percentage points change of self-employed leaving to or coming from another sector between the two periods was small, from one to four percentage points.

The proportion of cross-sector movement remained at the same level from 2019 to 2020. The results are presented in figure 3.

Figure 3: Change in the proportion of cross-sector movement in the total reallocation (sum of all selected sectors)



Source: own elaboration

Although the number of cross-sector reallocating self-employed is small, we looked at their movement. The largest number of sole proprietors, who switched to sectors IT and other information services or human health services came from real estate activities. Economic branches of transportation and storage and accommodation and food service activities were the most popular among self-employed from agriculture, forestry and fishing sector, followed by those from wholesale and retail trade, repair of motor vehicles and motorcycles sector in both periods. Among those, who switched from sectors of accommodation and food service activities and transportation and storage the most popular destinations were administrative and support service activities and wholesale and retail trade, repair of motor vehicles and motorcycles. From human health services, the largest number of self-employed moved to the other services sector in both periods. We could not observe a notable change in the dynamic of cross-sector reallocation in the selected economic activities between the two periods.

4.2 Reallocation from employee status to self-employed

We can find additional information if we include the status of employee in our analysis and look at the dynamics among employment statuses and economic branches. However, SBR does not include data on employees, therefore, we turned to our second data source. At this point, we have to note that the number of self-employed in the two data sources is not the same, they differ.

First, we examined the number of employees who decided to leave their job and became self-employed in one of the four selected economic branches. Therefore, we could see how self-employed has become an alternative way of living. However, we found that only a few hundred people decided to switch employment statuses. The most popular sector among new self-employed was transportation and storage, with almost 500 new entrants in both periods. The greatest proportion of employees who decided to switch to self-employed status left accommodation and food service activities economic branch, that is, 570 people in the Covid19-free period and near 500 in the first year of the pandemic. Similarly, a decline can be observed in the other three sectors too, hence, Covid19 and the imposed restriction measures reduced the willingness to switch from employee to self-employed status. Not just the number of people who left their jobs from the selected sectors and became self-employed in one of the economic branches decreased, but also the number of those, who left their employee status from one of the sectors to become sole proprietors in the selected branches. The results are given in Table 2.

Table 2: Number of reallocating people to/from selected economic branches

Number of people left employee status from selected sectors to become self-employed				
Period	*Trasp.*	*Accomm.*	*IT*	*H. health*
From 2018 to 2019	294	570	254	134
From 2019 to 2020	210	499	175	97

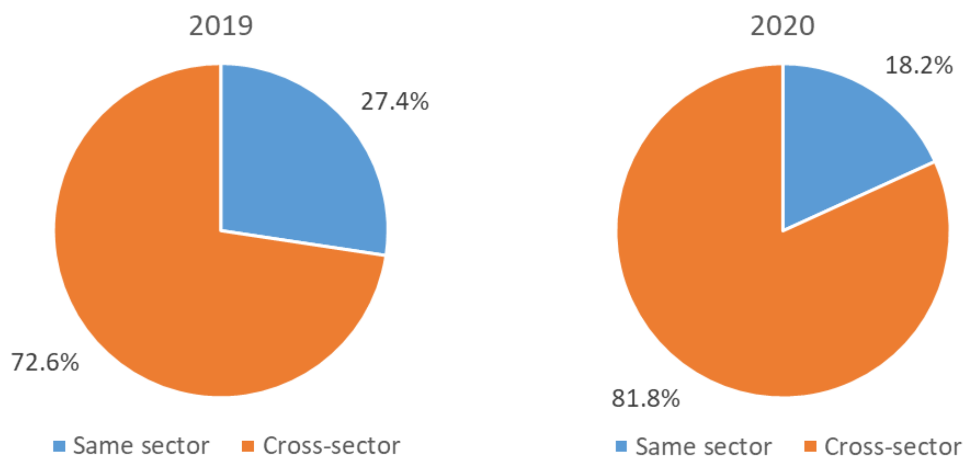
Number of people became self-employed in selected sectors by leaving employee status				
Period	*Trasp.*	*Accomm.*	*IT*	*H. health*
From 2018 to 2019	470	308	397	147
From 2019 to 2020	498	230	395	103

Source: own elaboration.

The only sector, where the number of new entrants did not decrease is transportation and storage. In IT and other information services, it stayed at the same level. Employees saw the opportunity in switching to self-employed in these economic branches, while they found the other two sectors less attractive than in the pre-Covid19 year.

Although, the proportion of cross-sector reallocation in the total movement is high, it represents a small number of people. The majority of new self-employed in selected economic branches switched both employment statuses and sectors in 2019 and 2020. The proportion of people who shifted across sectors increased from 2019 to 2020, as shown in figure 4.

Figure 4: Change in the proportion of cross-sector movement in the total reallocation (sum of all selected sectors; from employee status to self-employed)



Source: own elaboration

The largest number of those, who switched sectors, moved to the chosen branches from the public administration and defence, compulsory social security sector in 2019. This statement remained valid in accommodation and food service activities and human health services during the first year of Covid19. However, the largest amount of new sole proprietors in transportation and storage shifted from administrative and support service activities economic branch, followed by public administration and defence, compulsory social security; wholesale and retail trade, repair of motor vehicles and motorcycles; and accommodation and food service activities. Hence, the increased number of new self-employed in transportation and storage in 2020 was due to the new entrants from other economic branches. It means that some employees from different sectors saw the opportunity in becoming sole proprietors in transportation and storage sector. In the case of IT and other information services, the greatest number of people switched from being employees from administrative and support service activities, which means increased popularity of the sector among them.

4.3 From parallel employment statuses to self-employed

People can be employees and self-employed at the same time. Therefore, we look at the change in the number of people, who had simultaneous employment statuses but decided to fully pursue a self-employed career. Among workers, who had parallel employment statuses, but decided to leave their employers and remain sole proprietors, the most popular sector was IT and other information activities, followed by transportation and storage, human health services, and accommodation and food services. Similarly, the greatest number of those who remained only self-employed had parallel employment statuses in IT and other information activities, followed by the other sectors in the same order as before. The results are given in Table 3.

Table 3: Number of people reallocating from parallel employment statuses to self-employed from/to selected sectors

Number of people remained only self-employed by giving up parallel employment statuses from selected sectors				
Period	*Trasp.*	*Accomm.*	*IT*	*H. health*
From 2018 to 2019	1,465	962	1,473	976
From 2019 to 2020	1,622	944	1,788	1,137

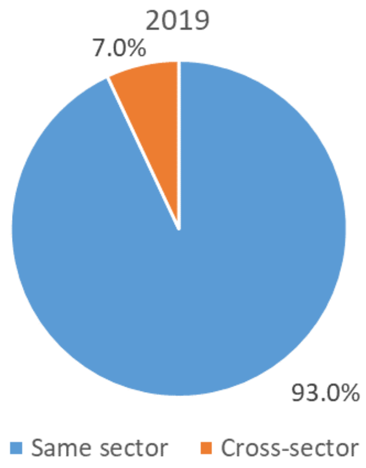
Number of people became only self-employed in selected sectors by giving up parallel employment statuses				
Period	*Trasp.*	*Accomm.*	*IT*	*H. health*
From 2018 to 2019	1,520	904	1,552	962
From 2019 to 2020	1,681	848	1,908	1,157

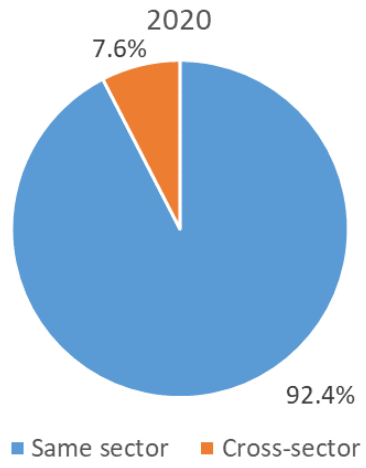
Source: own elaboration

The number of people reallocating increased in all sectors except accommodation and food service activities. Fewer people with simultaneous employment statuses from accommodation and food service activities economic branch decided to remain only self-employed during Covid19 than a year earlier. In addition, fewer people decided to remain only sole proprietors in accommodation and food service activities, who had parallel employment statuses. The reason for the latter could be that fewer people thought that they could make a living as only sole proprietors in this particular economic branch. The former indicates that fewer people with simultaneous employment statuses in accommodation and food service activities thought that they could get along if they resign from their job.

Cross-sector movement is insignificant in this case, most of the people who gave up their parallel employment statuses to fully pursue self-employed careers remained in the same sectors. The results are presented for both periods in figure 5.

Figure 5: Change in the proportion of cross-sector movement in the total reallocation (sum of all selected sectors; from simultaneous employment statuses to self-employed)





Source: own elaboration

Less than 10% changed sector, except in the case of accommodation and food service activities, where this ratio is a few percentage points higher.

4.4 From employee to simultaneous employment statuses

We examined the change in the number of people who decided to become self-employed parallel to their employee status. In 2019, the greatest number of employees who embarked on self-employed careers simultaneously to their jobs was in human health services, followed by transportation and storage, accommodation and food service activities, and IT and other information services. This order changes for 2020 as follows: accommodation and food service activities, transportation and storage, human health services, and IT and other information services. The order of those who were employees in a sector but decided to also embark on a self-employed career in the selected branches changed too. The greatest number of reallocations was in human health services, followed by transportation and storage, IT and other information services, and accommodation and food service activities in the pre-Covid19 year. In this order, the first and the second sectors switched places during the first year of the pandemic. The results are presented in Table 4.

Table 4: Number of people reallocating from employee to simultaneous employment statuses from/to selected sectors

Number of people who were only employees in selected sectors, but started parallel self-employed status				
Period	*Trasp.*	*Accomm.*	*IT*	*H. health*
From 2018 to 2019	3,892	3,017	2,622	4,720
From 2019 to 2020	2,398	3,249	1,592	2,242

Number of people who were only employees, but started parallel self-employed status in selected sectors				
Period	*Trasp.*	*Accomm.*	*IT*	*H. health*
From 2018 to 2019	3,555	1,905	3,244	5,241
From 2019 to 2020	3,517	1,617	2,110	2,616

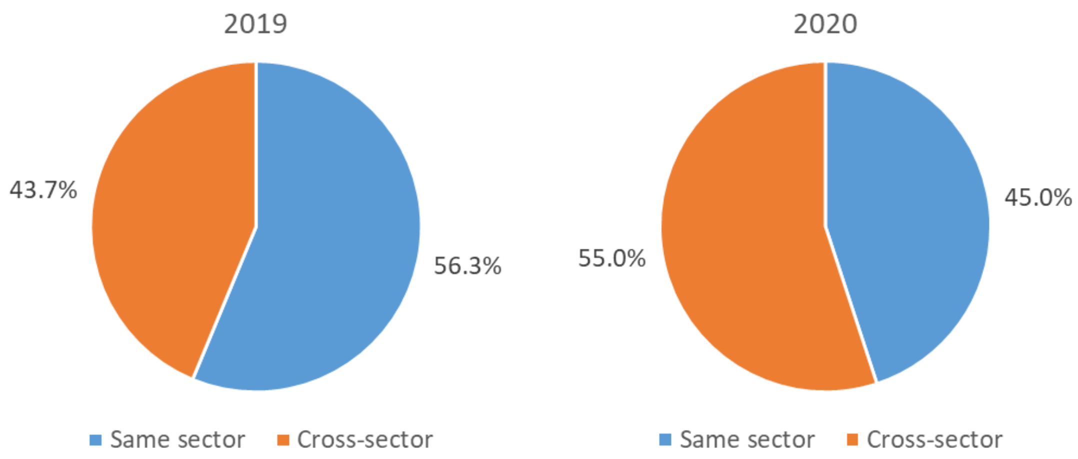
Source: own elaboration

The number of employees from the human health services sector, who became sole proprietors as well more than halved from the pre-pandemic year to the Covid19-affected year. A similar decrease was observed among those employees who decided to pursue parallel employment statuses in the human health services sector. Therefore, Covid19 and the associated restriction had a significant negative effect on the intention of employees to embark on a self-employed career in or from the human health services sector. We also examined the development in the number of individuals who had simultaneous employment statuses in human health services, and we found increasing numbers, hence, although the pandemic decreased the intention of people to become employees and self-employed simultaneously in human health services, it could not stop the growth in their numbers.

The only sector where more employees decided to become also self-employed during Covid19 was accommodation and food service activities. As many employees in this sector could not work due to the pandemic measures, they saw an opportunity in starting a self-employed career. The supportive programs of the government helped employers to keep their employees, hence, those working in accommodation and food service activities as employees could retain their jobs. Although their working hours dropped to zero, they received – a reduced amount of – salary thanks to the support of the government. By embarking on self-employed careers, they could make up for the lost part of their salary.

The number of employees who simultaneously started a self-employed career in transportation and storage remained almost the same in the two periods. The greatest number of them stayed in the same sector in both periods. Among those who reallocated between economic branches the largest number came from the sector of wholesale and retail trade, repair of motor vehicles and motorcycles, followed by administrative and support services, and public administration and defence, compulsory social security in the pre-Covid19 year. In 2020, there was a change in cross-sector movement, the greatest number of people came from accommodation and food service activities, and their number tripled compared to the previous period. Similarly, the greatest number of employees in accommodation and food service activities who also became self-employed and also switched between sectors went to the transportation and storage economic branch in 2020. The willingness to reallocate across sectors increased during Covid19 as shown in figure 6. We looked at the development in the number of individuals who were employees in accommodation and food service activities and self-employed in transportation and storage simultaneously, and we found that their numbers doubled, reaching 500 people in 2020.

Figure 6: Change in the proportion of cross-sector movement in the total reallocation (sum of all selected sectors, from employee to simultaneous employment statuses)



Source: own elaboration

5. Conclusions

Covid19 and the imposed restriction measures shocked the global economy and the labour market. Reuschke – Henley – Daniel (2020), and several other studies pointed out that self-employed workers were hit particularly by the effect of the pandemic. The influence of Covid19 on self-employed was documented in several countries. The differences in the impact was observed across genders, races, different parental statuses, education and income levels, and sectors. Some economic branches were severely hit, while others could even grow during the pandemic.

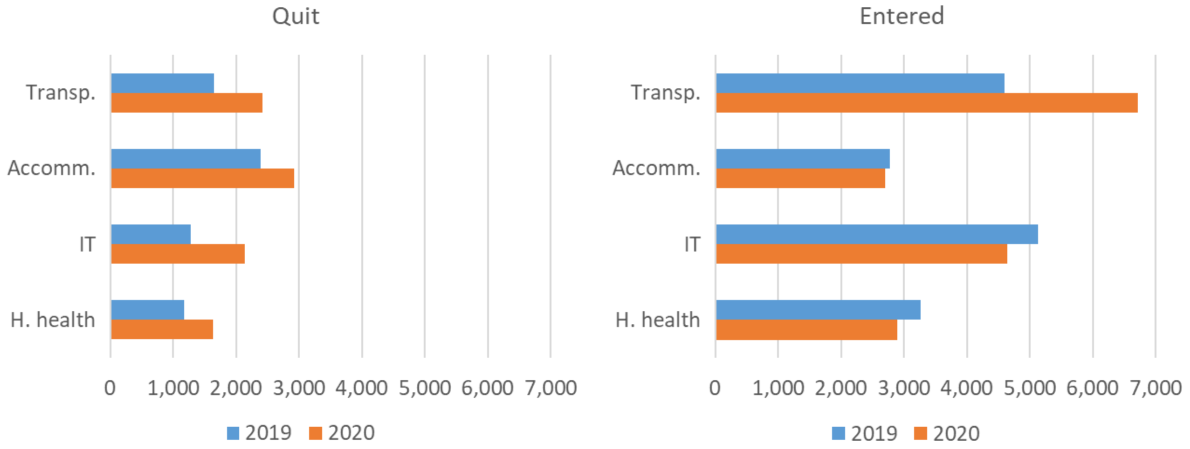
Self-employed in accommodation and food service activities, for example, was among the most affected sector in Germany (Block et al., 2020) and Hungary, too (Tóth – Kálmán – Poór, 2021). Different impacts were observed on sole proprietors in the transportation and storage sector, for example, a negative effect was observed in France (Apouey et al., 2020), while Blundell – Machin – Ventura (2020) documented a partially positive impact in the UK. Both IT and other information services and human health services belong to the less hit sectors in Germany (Block et al., 2020), and in the UK (Reuschke – Henley – Daniel, 2020).

We examined the development of self-employed in four selected economic branches during Covid19 in Hungary. Our two data sources were Statistical Business Register and Institutional Labour Data based on the Social Security Contribution Report of the National Tax Authority. The former database contains every self-employed in contrast to the latter. However, to examine the movement between employment statuses, we also needed the latter database.

We found that Covid19 and the associated pandemic measures had an influence on the development of self-employed in Hungary and led to a moderate reallocation in the labour market. The gross mobility slightly increased in every sector except transportation and storage, where the growth was much more significant. It means that sole proprietors were more willing to enter or quit the labour market as self-employed or to reallocate between sectors. In the selected four economic branches, the willingness to reallocate between sectors increased, which is in contrast to the findings of Carrillo-Tudela (2021) et al. that documented a general decline in the willingness in the UK. However, the results showed that employment reallocations across sectors accounted for only a small proportion of total reallocation, in line with the findings of Barrero – Bloom – Davis (2020).

The impact of Covid19 was the most significant in the transportation and storage sector, where the growth in the number of new self-employed increased from the pre-Covid19 year to the first year of the pandemic. The reason behind the growth is that many people stayed at home and many switched to home office for safety, which boosted online shopping and food ordering, and – as Blundell – Machin – Ventura (2020, p. 4.) remarked – “wages were good and workers were prepared to take the risks.”. The other sector, where we expected a similarly positive effect, due to the recent trend of digitalization and their advantage of the ability to easily shift to home office was the IT and other information services. However, the growth in the number of new self-employed slowed down in the sector in the first year of the pandemic. The growth in the number of sole proprietors in human health services decreased, too. The movements in the four chosen sectors are given in figure 7.

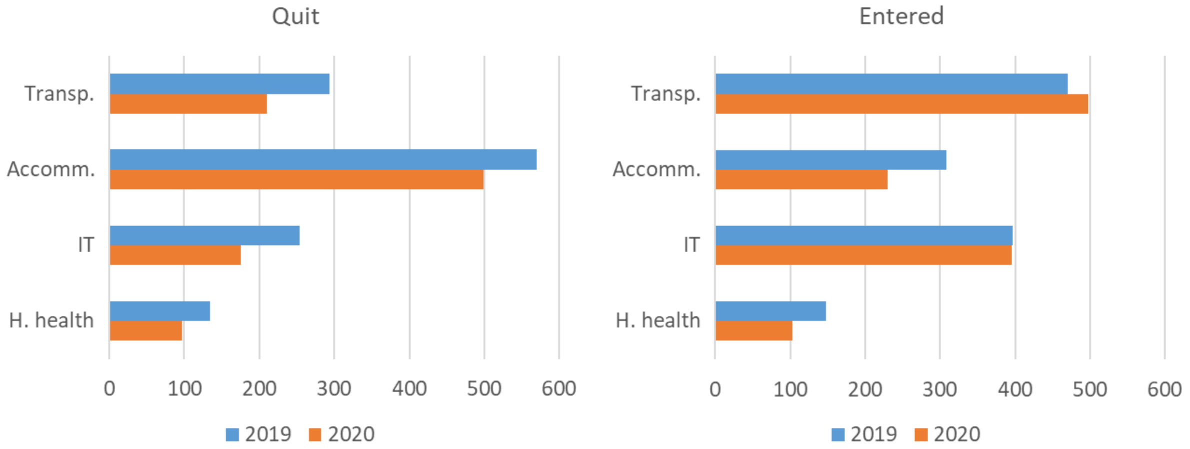
Figure 7: Number of self-employed entered or left the selected economic branches



Source: own elaboration

Since only a minor part of the movement in self-employed can be attributed to cross-sector mobility, we, therefore, examined some specific cases of reallocation between forms of employment. We looked at the number of transitions from employee status to self-employed in selected sectors, which can indicate how much being a sole proprietor has become an alternative way of living. The change in reallocation between the two periods are shown in figure 8.

Figure 8: Number of people who left employee status from the selected sectors to become self-employed regardless the sector of destination (left); number of people who became self-employed in the selected sectors by changing form of employment regardless the sector of origin (right)

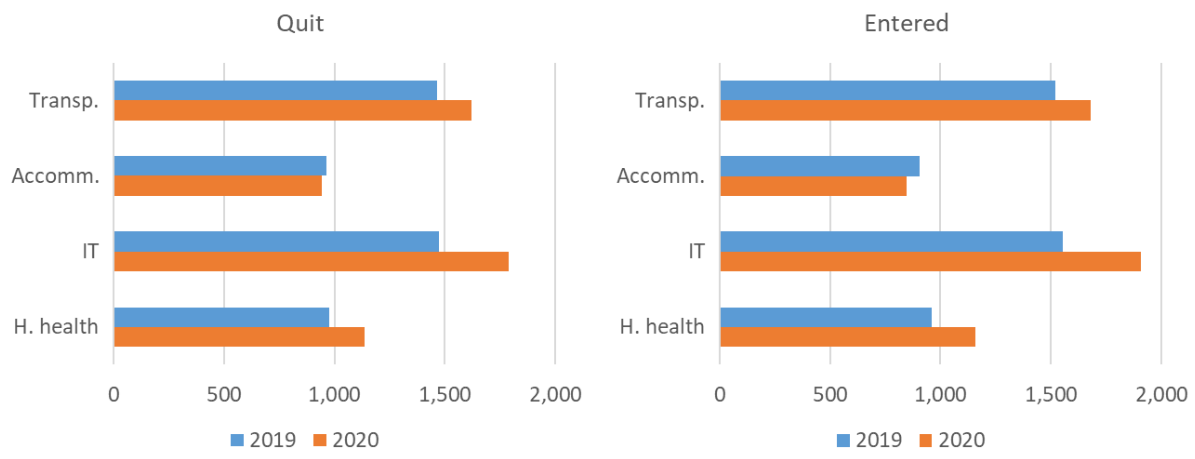


Source: own elaboration

We found that less number of employees left selected sectors to become self-employed in 2020 compared to 2019. However, we observed a growth in the number of those new sole proprietors in the transportation and storage sector who were employees a year before in 2020. In the case of IT and other information services, the number of newcomers remained at the same level between the two periods. The willingness to shift from employee status to self-employed generally decreased in the four selected sectors, except for the cases when someone left their job to become sole proprietor in transportation and storage or IT and other information services. As discussed earlier, these sectors were in a more favourable position (digitalization, home office, increasing demand). We also looked at cross-sector movement, but we found insignificant numbers.

The development in the number of workers who gave up their simultaneous employment statuses to remain only self-employed is also a good indicator of how the perception of being sole proprietors evolved. The development of the numbers are given in figure 9.

Figure 9: Number of people who left simultaneous employment statuses from the selected sectors to remain only self-employed regardless the sector of destination (left); number of people who remained only self-employed in the selected sectors by giving up simultaneous employment statuses regardless the sector of origin (right)



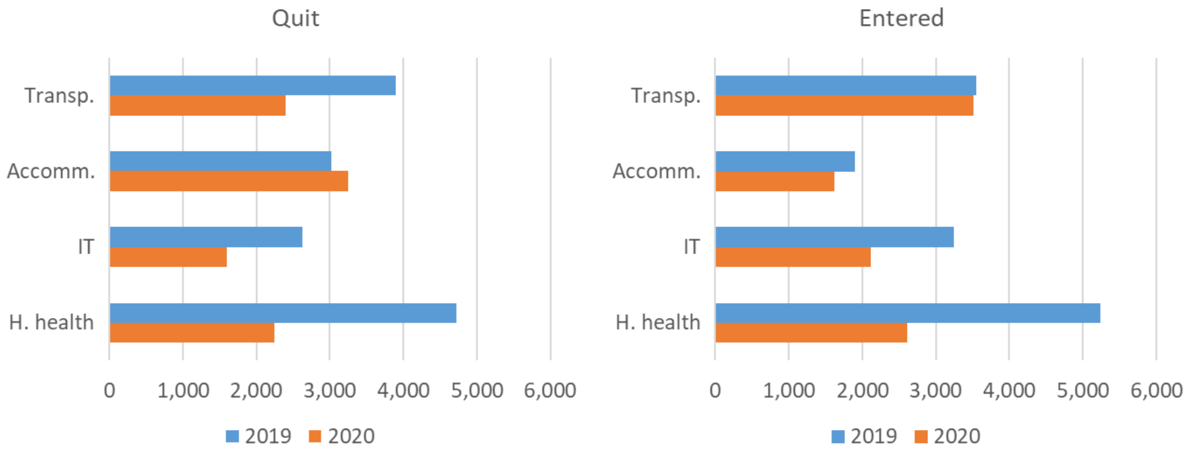
Source: own elaboration

We mostly found increasing numbers during the first year of Covid19 compared to the pre-Covid19 period. The results indicate that the willingness among employees to change their employment statuses and prosper as a sole proprietor was greater among those who already had a self-employed status. The economic branch where the number of reallocators decreased in

2020 was accommodation and food service activities, which confirms that it was the most negatively affected sector among the selected fours.

The results show that individuals who were only employees before Covid19 were less likely to take up a self-employed status instead of or simultaneously to their existing employee status in 2020. The change in the number of people taking up self-employed status parallel to their employee status is presented in figure 10.

Figure 10: *Number of people who were only employees in the selected sectors, but took up self-employed status as well regardless the sector of destination (left); number of people who embarked on self-employed career parallel to their employee status in the selected sectors regardless the sector of origin (right)*



Source: own elaboration

The only sector where there was an increase in the number of employees who simultaneously became self-employed as well, was accommodation and food service activities. Those who worked in the accommodation and food service activities sector rather became self-employed parallel to their employee status, than switching to only sole proprietorship. Their most favoured cross-sector destination was transportation and storage, therefore, they significantly contributed to the increase in the number of self-employed in this economic branch. On the other hand, just a few tens of them take up sole proprietorship and reallocated to IT and other information services sector, which might be due to the fact, that IT requires specific knowledge that just a few of them possesses. The most significant drop in the willingness to embark on a self-employed career simultaneous to employee status was in the sector of human health services. Despite that, the number of people working in public and private health care increased in the first year of the pandemic, still, we expected a much greater growth based on the increased demand for private health care during Covid19.

6. Summary

Covid19 and the imposed restriction measures influenced the development of self-employed in Hungary. The effect was mostly negative, but for some sectors, the impact was less negative or even positive. The pandemic induced reallocation in the labour market, however, mostly between employment statuses, while the movement across sectors was insignificant in many cases. We conclude that the Hungarian labour market, particularly sole proprietors reacted to the effects of Covid19 and the associated pandemic measures, however, this reallocation was less flexible than we expected.

We acknowledge the limitations of our study. First, we lost information on workers who had two or more simultaneous employment statuses when we took into account only one of their statuses, so we could match them to sectors. This limitation made it harder to interpret reallocations when simultaneous employment statuses was considered. Second, we cannot draw general conclusions on the development of self-employed in Hungary based on our limited information on four selected sectors. Third, the impact of the pandemic extended beyond 2020, as it was just the first year of Covid19, hence, we observed only the initial effect of the pandemic.

As for future research direction, we would like to include data on the year 2021, so we could see how the labour force, particularly self-employed developed as they had time to adjust to the new circumstances. We plan to map the income of KATA-payers and incorporate other sectors in our research, hence providing a bigger and more accurate picture of the development of self-employed in Hungary.

7. References

1. Adam-Prassl, A et al. (2020): Inequality in the impact of the coronavirus shock: Evidence from real time surveys. *Journal of Public Economics*, Vol. 189. September 2020, 1042245. https://doi.org/10.1016/j.jpubeco.2020.104245

2. Anayi, L. et al. (2021): Labour market reallocation in the wake of Covid-19. VoxEU, https://voxeu.org/article/labour-market-reallocation-wake-covid-19

3. Apouey, B. et al. (2020): Gig Workers during the COVID-19 Crisis in France: Financial Precarity and Mental Well-Being. *Journal of Urban Health*, Vol. 97. No. 6. pp. 776–795.

4. Barrero, J. M. – Bloom, N. – Davis, S. J. (2020): COVID-19 Is Also a Reallocation Shock. Working Paper No. 27137. National Bureau of Economic Research. https://www.doi.org/10.3386/w27137

5. Barrero, J. M. et al. (2021): COVID-19 Is a Persistent Reallocation Shock. Becker Friedman Institute for Economics Working Paper No. 2021-02. Chicago: University of Chicago. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3763443

6. Battista, L (2020): Covid-19 and Self-employment: emergency measures and unsolved challenges. *Italian Labour Law E-Journal*, Vol. 13. No. 1. pp. 85–101. https://doi.org/10.6092/issn.1561-8048/11133

7. Beland, L. P. – Fakorede, O. – Mikola, D. (2020): Short-Term Effect of COVID-19 on Self-Employed Workers in Canada. *Canadian Public Policy*, Vol. 46. No. 1. pp. 66-81.

8. Block, J. H. et al. (2020): Emergency aid for self-employed in the COVID-19 pandemic: A flash in the pan? DIW Discussion Papers No. 1924. Berlin: Deutsches Institut für Wirtschaftsforschung.

9. Blundell, J – Machin, S. – Ventura, M. (2020): Covid-19 and the self-employed: Six months into the crisis. Centre for Economic Performance Covid-19 analysis, Paper No. 012. London: London School of Economics and Political Science.

10. Blundell, J. – Machin, S. (2020): Self-employment in the Covid-19 crisis. Centre for Economic Performance Covid-19 analysis, Paper No. 003. London: London School of Economics and Political Science.

11. Carrillo-Tudela, C. et al. (2021): Search and Reallocation in the COVID-19 Pandemic: Evidence from the UK. IZA Discussion Papers, No. 14582. Bonn: Institute of Labor Economics (IZA). https://www.econstor.eu/handle/10419/245633

12. Fairlie, R. W. (2020): The Impact of COVID-19 on Small Business Owners: Evidence of Early-Stage Losses from the April 2020 Current Population Survey. Working Paper No. 27309. National Bureau of Economic Research. https://doi.org/10.3386/w27309

13. Graeber, D. – Kritikos, A. S. – Seebauer, J. (2021): COVID-19: a crisis of the female self-employed. *Journal of Population Economics*, Vol. 34. No. 4. pp. 1141–1187.

14. Gros, D. – Ounnas, A. (2021): Labour market responses to the Covid-19 crisis in the United States and Europe. CEPS Working Document No. 2021-01. Centre for European Policy Studies.

15. International Labour Organization (2020): ILO Monitor: COVID-19 and the world of work. First edition. Switzerland: ILO.

16. International Labour Organization (2021): ILO Monitor: COVID-19 and the world of work. Seventh edition. Switzerland: ILO.

17. Kalenkoski, C. M. – Pabilonia, S. W. (2020): Initial Impact of the COVID-19 Pandemic on the Employment and Hours of Self-Employed Coupled and Single Workers by Gender and Parental Status. IZA Discussion Papers, No. 13443. Bonn: Institute of Labor Economics (IZA). https://www.econstor.eu/handle/10419/223885

18. Kónya, I. – Krekó, J. (2021): Állásvesztés, munkahely- és foglalkozásváltás a járulékbevallások adatai alapján. In: Fazekas, K. – Kónya, I. – Krekó, J. (eds.): *Munkaerőpiaci tükör, 2020*. Budapest: Centre for Economic and Regional Studies, pp. 87-96.

19. Reuschke, D. – Henley, A. – Daniel, E. (2020): First findings on the impact of COVID-19 on self-employment in the UK – evidence from the Understanding Society household survey. Enterprise Research Centre Insight Paper, August 2020.

20. Spasova, S. – Wilkens, M. (2018): The social situation of the self-employed in Europe: labour market issues and social protection. In: Vanhercke, B. – Ghailani, D. – Sabato, S. (eds.): *Social policy in the European Union: state of play 2018*. Brussels: European Trade Union Institute, pp. 97-116.

21. Tóth, A. – Kálmán, B. – Poór, J. (2021): Employment in Hungarian economy as a result of the Covid-19 pandemic. *Acta Oeconomica Universitatis Selye*, Vol. 10. No. 1. pp. 84-96.