Policy Brief
No. 6

Job retention scheme and firm performance during the pandemic

Evidence from firm-level data

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Slovak firms receiving state aid during the pandemic (called first aid) were in good financial condition before the pandemic but in some respects were more vulnerable than the rest of the firms. They were mostly profitable, less indebted firms particularly exposed to the pandemic and the subsequent containment measures. On the other hand, they operated with a higher share of wage expenditures in overall costs and with lower profitability before the pandemic. Most of the first aid went into loss mitigation; however, this substantially differed among industries. In accommodation and catering services and other services, FA support mainly mitigated losses. On the other hand, in the automotive industry and motor vehicle trade, FA acted to boost profits.

- Before the pandemic, firms receiving first aid were financially healthy, mostly profitable and without extensive debt.
- First aid scheme subsidized only a small number of already ineffective firms (zombie firms).
- Firms affected by the pandemic and restrictive measures and that received first aid, defaulted at a lower rate and did not face debt increases.
- First aid mostly mitigated losses in the hospitality sector, arts and recreation, education, and other services.
- In automotive industry and motor vehicle trade, first aid mainly increased profits.
- Higher use of liquidity support is sufficient for a significant number of firms and is fiscally less costly.

First aid scheme structure and coverage

The total amount of state aid in the first aid (FA) scheme in the three years of 2020-2022 was almost 2.5 bil. euros (2.3% of GDP[1]), partially (18%) financed from EU sources[2]. The scheme was divided into 6 measures (Chart 1), where measures 1, 3A and 3B were aimed at helping employers (firms) and measures 2, 4A and 4B were aimed at self-employed and one-person limited liability companies (individuals).

More than 70% of the state aid was aimed at firms. In the first year of the roll-out, most of the aid went to firms through measure 3B, which was conditional on a significant decrease in revenues. In the following year, individual recipients accounted for much of the annual increase. There were three major waves of FA, which matched the waves of the pandemic:

(i) The first wave was at the beginning of the pandemic, mainly in April/May 2020. No more than 30 deaths from COVID-19 were recorded in these months; however, the restrictive measures were significant.

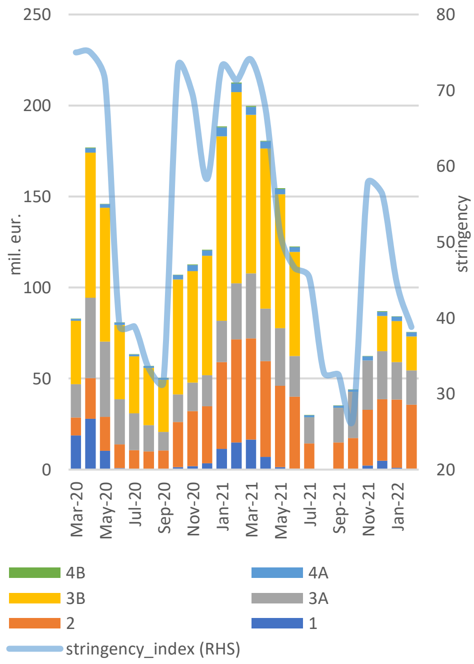
(ii) The second wave was the major wave culminating in February 2021, matching the harsh wave of the pandemic. Relaxation occurred in the summer months.

(iii) The third wave, regarding state aid to firms, was minor and came between the end of 2021 and the first months of 2022, at which point the FA scheme ended.

Aid covered the largest share of revenue in accommodation and catering services, representing almost 6% of overall revenue in 2021. This reflects the substantial effect of restrictive measures on this sector, while other highly subsidized sectors (aid surpassing 1% of overall revenue) were retail trade and education. In contrast, the share of revenue covered by the FA scheme was the lowest in energies, IT, industry and transport (Chart 2).

Chart 1

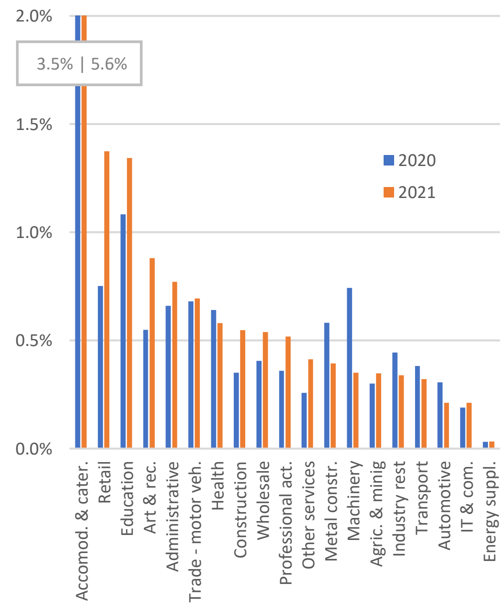
Structure of FA and stringency index



Source: MPSVaR SR, Ourworldindata.org, NBS calculations

Chart 2

Share of 2019 revenue covered by FA (%)



Source: Finstat, MPSVaR SR, NBS calculations

[1] GDP for 2022

[2] Part of the sources from the 3rd programming period of the EU were reallocated to this purpose.

Which firms received aid: Evidence from annual data

In this section, we looked at the firms that received aid from the FA scheme in comparison with the rest of the firms. The main aim was to unveil whether the aid went to firms that would have had problems even in normal times (already inefficient firms) or whether the FA scheme rescued firms otherwise functioning efficiently. Since a major portion of aid recipients were in services, some characteristics of the FA recipients were affected by the nature of the sample. However, valuable results stem from the differing development of these two groups (recipients and nonrecipients) before and after the pandemic.

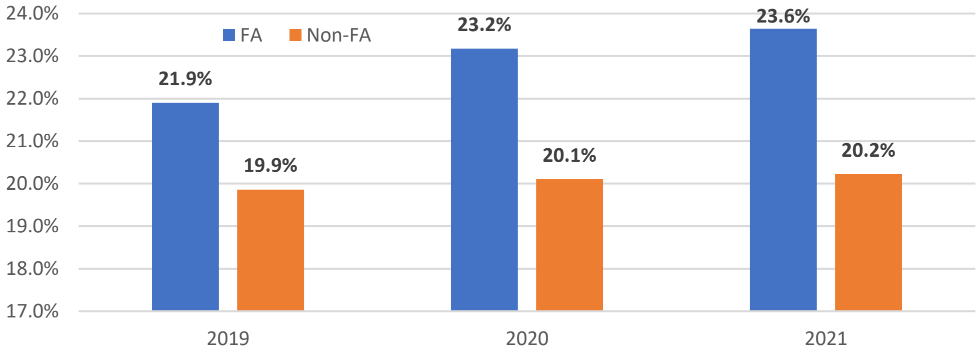
We looked at three major areas to examine the financial conditions of FA recipients before and during the pandemic: the share of wage costs, profitability, and indebtedness. Annual data were mainly used to maximize the extent of matching the aid receivers on financial data. However, the largest firms could also be inspected on a quarterly basis, which we do in the section below.

SHARE OF WAGE COSTS

Firms that received state aid had a higher share of wage expenditure out of overall expenditure before the pandemic than did non-FA firms. These firms are mostly in services, where the higher share of wages makes them less flexible in accommodating the sudden revenue decline. During the pandemic, the share of wage costs even increased by 1.7 p.p. within two years, in contrast to relatively stable development in the non-FA firms. This may be because FA firms could not cancel jobs due to the nature of the aid, in contrast to non-FA firms, which could accommodate a shock to revenues by reducing wage costs.

Chart 3

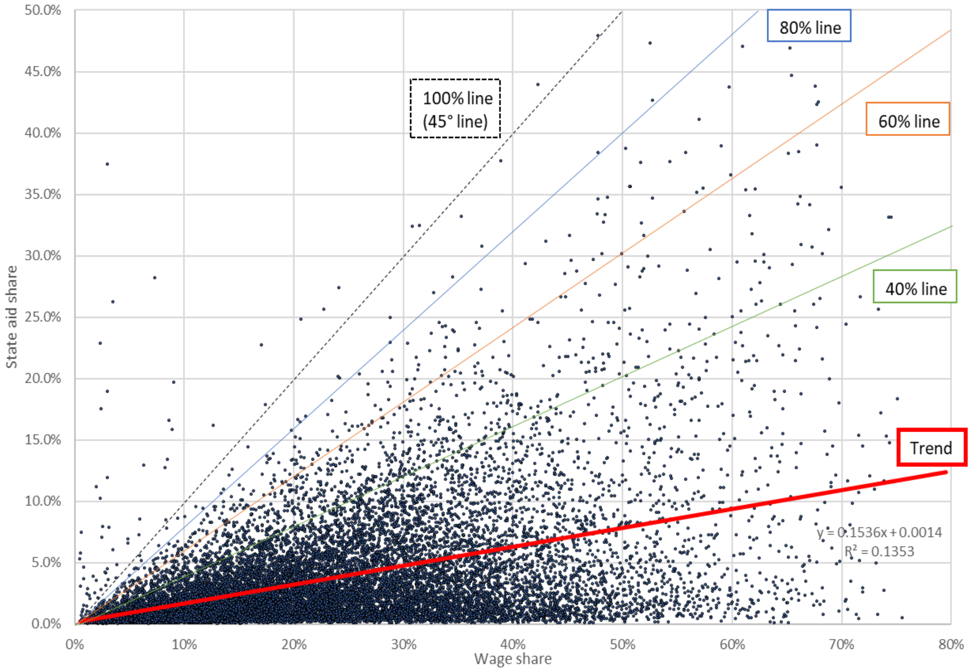
Share of wages on total costs (%)



Source: Finstat, MPSVaR SR, NBS calculations
Note: Nonweighted average of individual firms with non-0 observations.

For the vast majority of firms, aid compensated for no more than 40% of their wage costs. The rules were designed to compensate only a proportion (most of the rules at first 80% and in the end 100%, more in Baliak et al., 2022) of the labour costs, which also dependent on the degree of the revenue decrease. Almost all firms were below the 80% threshold, and most were compensated for only less than half of their wage costs (illustratively in Chart 4 for 2020 but also applies to 2021). Only a negligible number of firms received higher aid than their share of wage costs.

Chart 4
Proportion of wage costs and state aid in total costs (2020)



Source: Finstat, MPSVaR SR, NBS calculations
Note: Only includes firms with both nonzero observations.

PROFITABILITY

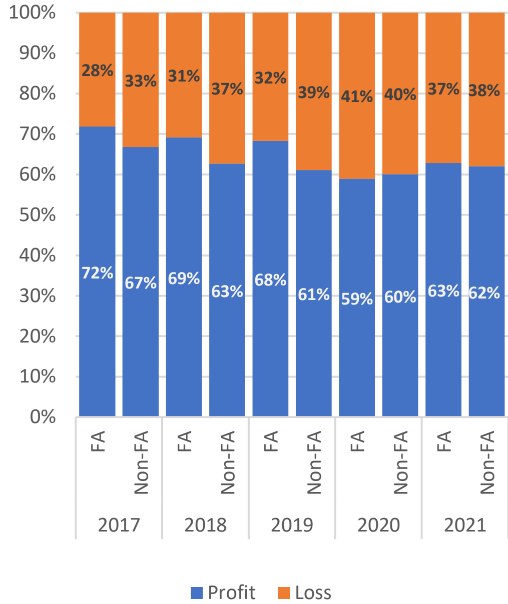
Generally, there was a higher share of profitable firms among the receivers of FA than among the rest of the firms (Chart 5). This effect is present 3 years prior to the pandemic, shortly vanishes in 2020 due to the profit decline caused by the pandemic and then reappears in 2021, although to a lesser extent. However, among the FA receivers, almost 12% of firms recorded losses in all three years before the pandemic (2017-2019), which means that state aid also partially subsidized these less efficient firms (however, these firms had a lower probability of receiving state aid than did productive firms, as shown in Lalinský, 2021).

Prior to the pandemic, FA receivers on average operated with much lower profit margins[3] (Chart 6). This was on the one hand by design: the FA scheme covered mainly industries that operated generally with lower profitability (e.g. accommodation and catering services, art, entertainment and recreation). On the other hand, the effect of the profitability mismatch between receivers and nonreceivers prior to the pandemic is observed in almost all industries, with only a few exceptions (Chart 7).

The profitability of FA receivers declined during the first year of the pandemic but returned sharply the year after. In contrast, nonreceivers did not record a decline in profitability on average and remained on an increasing trajectory in both pandemic years (Chart 5). This development is also backed by the quarterly data of the largest firms (Section 3).

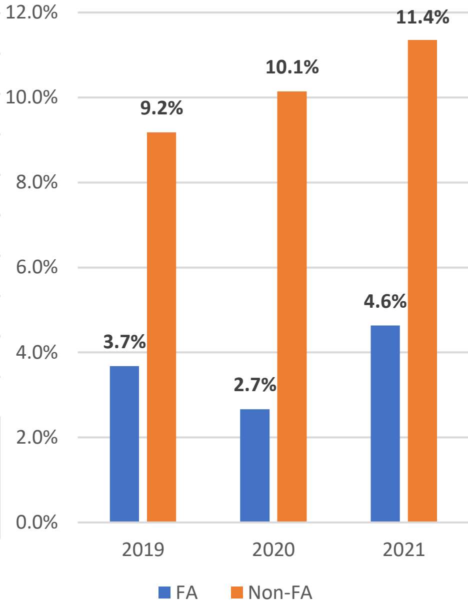
[3] GPM = profits/revenue

Chart 5
Number of firms with profit/loss (%)



Source: Finstat, MPSVaR SR, NBS calculations

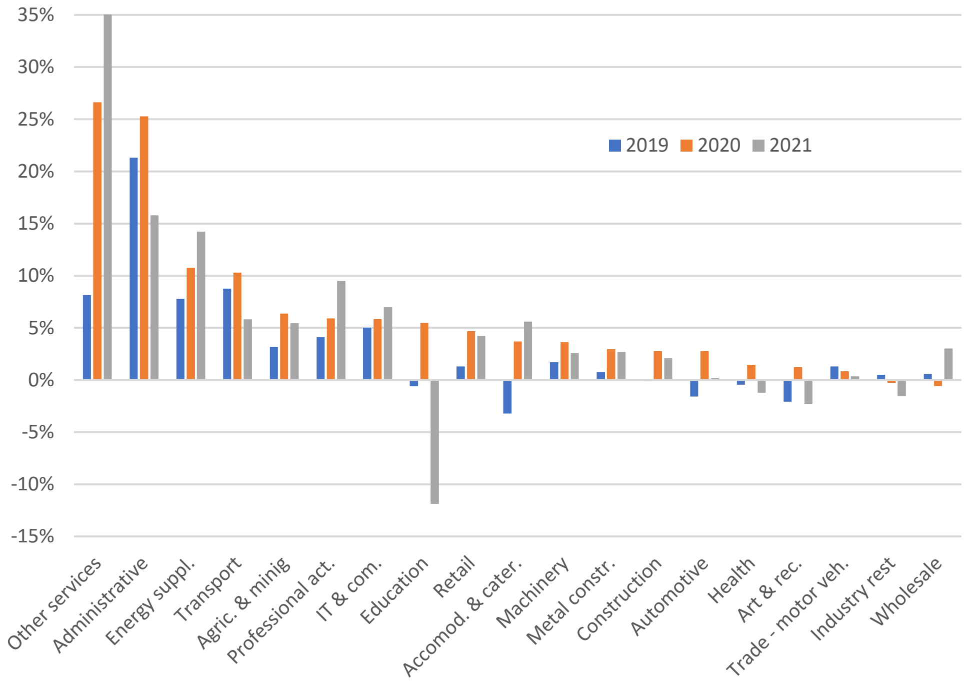
Chart 6
Weighted profit margin (%)



Source: Finstat, MPSVaR SR, NBS calculations
Note: Weighted by total revenue.

Firms covered by the FA scheme in most industries operated with lower profitability before the pandemic than did nonreceivers. This is shown at the aggregate level but also in most industries, except for 6: automotive, construction, accommodation and catering, education, health care and arts and recreation. This lower starting point, together with the decline in profitability in 2020 due to the pandemic, contributed to the vulnerability of firms, which had to be patched by the FA scheme.

Chart 7
Difference in weighted profitability between receivers and nonreceivers of state aid by industry (p.p.)

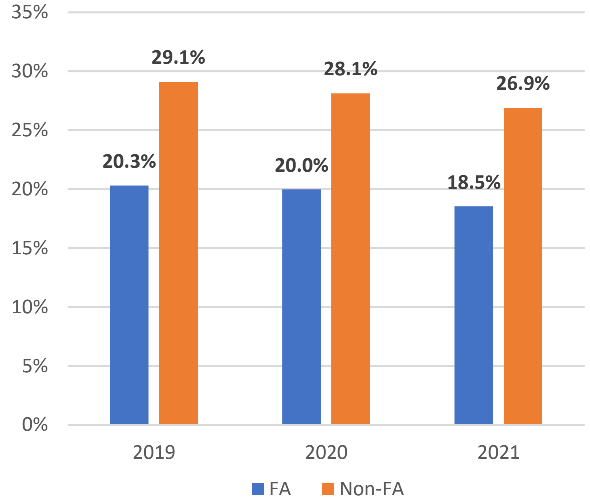


Source: Finstat, MPSVaR SR, NBS calculations
Note: Profitability of non-FA firms minus profitability of FA firms.

INDEBTEDNESS

Firms that received state aid from the FA scheme before the pandemic were almost one-third less indebted than non subsidized firms. During the pandemic, no unmanageable debt spree went on, and the average debt rate in both groups gradually declined (Chart 8). Interestingly, although the debt ratio of nonreceivers decreased more sharply throughout the pandemic than that of FA firms, the average debt of these firms slightly increased.

Chart 8
Debt to assets ratio (%)

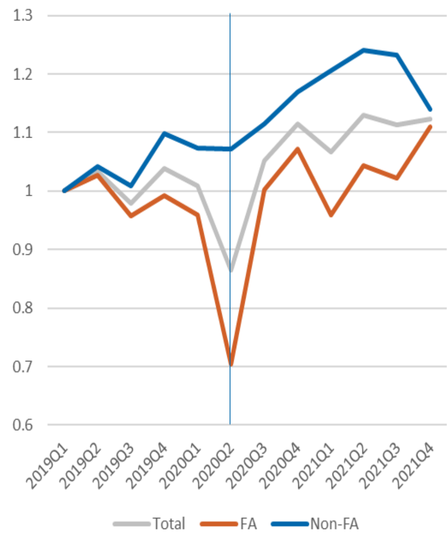


Source: Finstat, MPSVaR SR, NBS calculations

Which firms received the aid: Evidence from quarterly data on large firms[4]

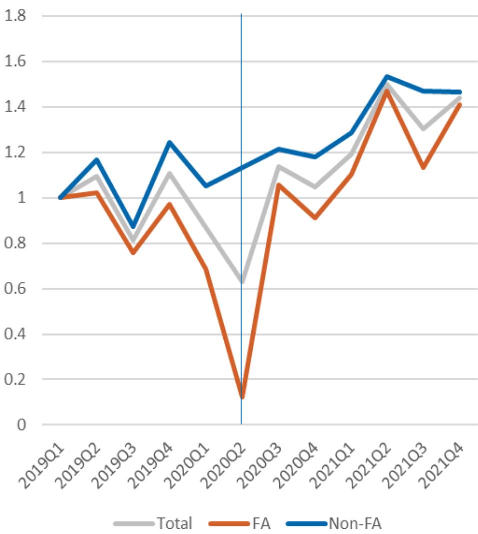
Recipients of the FA scheme recorded a substantial decline in earnings and value added at the beginning of the pandemic. From this sample, there is a significant mismatch between the development of recipients and nonrecipients. Nonrecipients recorded almost no immediate impact in the first quarters of the pandemic regarding profit and value-added development, in contrast to firms in the FA scheme. In later quarters, the rebound in FA recipients was strong, with these two indicators coming closer together in between groups.

Chart 9
Value added (index, 2019Q1=1)



Source: SO SR, MPSVaR SR, NBS calculations

Chart 10
Earnings before taxes (index, 2019Q1=1)



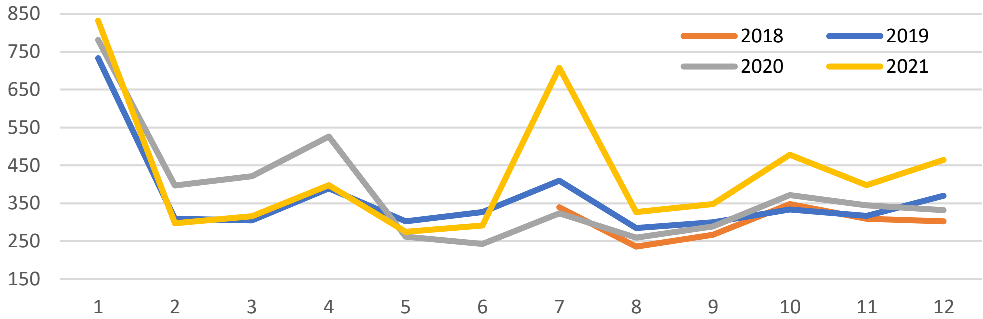
Source: SO SR, MPSVaR SR, NBS calculations

[4] Includes firms with 20+ employees and firms with 0-19 employees and turnover 5+ mil. €. Includes ca. 4500 firms.

Aid recipients and firm exits

We used microdata from VAT reports to estimate the exit rate of firms. The advantage of this approach is that a firm may need substantial time to default – from the point of the "real" end of business to the point of the legal liquidation of a firm – which does not relate to the period when the business stopped operating. The rationale of the VAT report approach is (similarly as in NBS, 2022) that when a firm paid VAT regularly for a length of time (for instance, a minimum of 4 months in the past 6 months) and then suddenly stops (and up to the end of the time series does not pay any more), we considered this firm as having defaulted. This approach gave us data with a rather stable seasonal profile (see Chart 11), with peaks in first months in a quarter (1, 4, 7, 10), which likely carries information about the termination of VAT payments to the last month of a quarter (and then "default" from the next month).

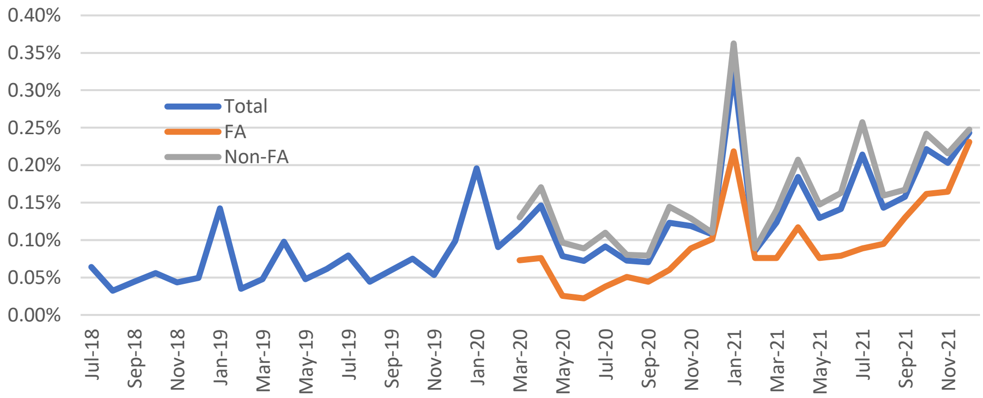
Chart 11
Monthly profile of estimated exits



Source: Finančná správa SR, NBS calculations

During the whole duration of the pandemic, the exit rate of FA recipients was significantly lower (Chart 12). When dividing these defaults into FA recipients and nonrecipients, we saw that recipients continued to pay VAT regularly, and the estimated exit rate is below that of the nonrecipients. This is partially caused by the selection process of the FA recipients, where among other criteria was also a condition of not being currently (prior to drawing the aid) in liquidation, not to have unpaid liabilities towards certain public institutions, and others. Only viable companies therefore complied with these criteria. Interestingly, however, towards the end of the FA scheme, when the amount of aid decreased, the default rate of FA firms started to increase and approached the levels registered by FA nonrecipients.

Chart 12
Estimated exit rates



Source: Finančná správa SR, NBS calculations

Was state aid necessary?

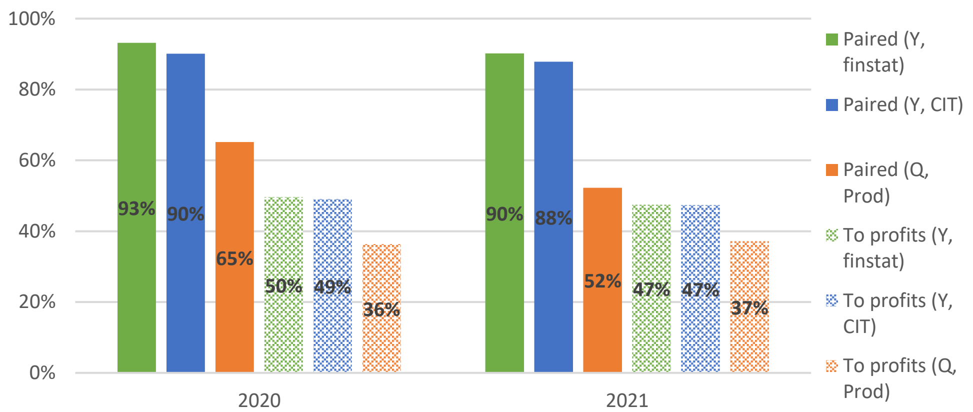
To assess whether firms would have handled the situation without the aid, we looked at a simple indicator. This indicator expresses how much aid increased the profits of firms or lowered their losses.

From the annual data, approximately 50% of the aid went to firms that remained profitable even without aid in both observed years (Chart 13, green and blue bars). We looked at the yearly data because it enabled us to cover more than 90% of the volume of aid to firms (solid bars), which we paired with financial data. Almost half of the volume of aid (transparent bars), if unpaid, would not increase the annual losses of firms but eliminate their profits. While the source of the profits can vary (e.g., rebound in the automotive sector after the 1st wave of the pandemic because of strong demand), FA in these companies reduced the need for them to use their resources to retain jobs and thus helped increase their overall profits.

However, a major argument against this approach could be, that firms may need help in specific quarters, whereas profits are generated in quarters where they do not receive any aid (e.g., a liquidity problem). Therefore, we looked at the same issue in the quarterly data (Chart 13, orange bars), where only 1/3 of the aid went to profitable quarters. However, through this approach, we covered only approximately 50%–65% of firms' aid (solid bars). This, however, leads to the question of whether the sudden lack of cash flow in the most affected quarters of the pandemic cannot be addressed in a way that is substantially less costly for public finances.

Chart 13

Coverage of different frequency approaches and share of aid to profits

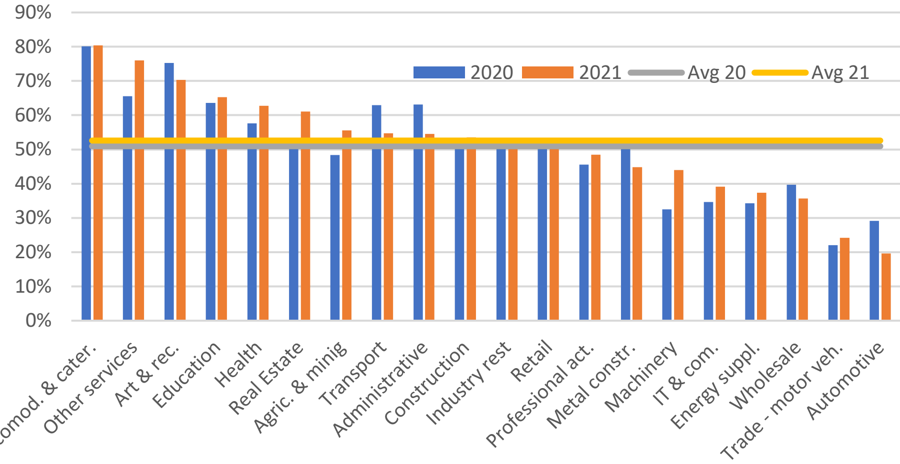


Source: NBS calculations

Note: CIT = Corporate income tax returns, Prod = Prod 3-04 statement (large firms). Solid bars represent coverage of aid that was paired on financial statements by different data sources, and transparent bars represent the share of aid received by firms that would remain profitable even without aid.

The greatest amount of FA that covered losses was in accommodation and catering services, and the greatest amount of increasing profits was in the automotive industry (Chart 14). When looking at the industrial decomposition of the FA covering losses, we see sectors most affected by the pandemic at the top. Accommodation and catering services, art, entertainment and recreation and other services suffered the most during the pandemic, which means that the aid here partially covered their losses. On the other hand, the automotive industry and trade and repair of motor vehicles received cumulative FA amounting to almost 200 mil. in 2020 and 2021 but managed to stay fairly profitable.

Chart 14
Share of FA volume covering losses (% of total aid)



Source: Finančná správa SR, MPSVaR SR, NBS calculations

Conclusions

It is far easier to assess the setup of the FA scheme after the implementation than during the process in the middle of the pandemic. Therefore, any conclusions should not be viewed as a condemnation of the FA framework but rather as a lesson for the future setting of similar aid schemes. The most important factor in a sudden shock is timeliness – even ineffectively designed schemes if implemented in a timely manner are better than no help at all. The current FA scheme helped preserve jobs (Modhurima, 2023), prevented defaults by a number of effective firms and restrained unmanageable debt increases.

However, to increase the effectiveness of the FA scheme, a more precise definition of the eligibility conditions and possible sector differentiation seems appropriate. A substantial part of the FA scheme was rather fiscally costly and went to firms with only a moderate to low need for help of this kind (the low efficiency of measure 3B was also found by Vaľková and Peciar, 2022). To address this issue, a better definition of eligible firms could eliminate the inefficient portion of state aid, and differentiation in schemes for sectors facing the highest impact of restrictions on their economic activity could also help.

Higher use of other, complementary schemes for cash flow problems in certain periods would decrease the high fiscal cost of the FA scheme. For firms/sectors facing more of a liquidity problem in specific periods but book a profit for the overall year, other schemes seem to be more appropriate – short term loans, state guarantees, tax deferrals and such. Higher promotion of these relatively inexpensive schemes could serve similar purposes while creating less pressure on public finances.

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