3.2 MANIFEST SHORTAGE – VACANCIES AND IDLE CAPACITIES

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This subchapter discusses the kind of shortage termed "manifest" for the purpose of brevity, whereby companies are not able to fill already existing positions or fully utilise already available capacities, citing labour shortage as the cause. We have analysed how such shortage relates to certain enterprise characteristics (size, sector, region, ownership structure, share of exports, business prospects). The analysis relies on the data of the Hungarian Labour Market Forecast Survey (HLMF).[1] The relationship between shortages and wages is investigated in Subchapter 3.3, based on a smaller sample compiled by merging the HLMF and the Wage Survey databases.

Persisting vacancies

The HLMF assesses the number of persisting vacancies and their specific characteristics annually by surveying 4200 firms from the business sector, with at least 10 employees.[2] Due to a uniform data collection methodology and sampling procedure, the survey enables year-on-year comparison.

The proportion of companies reporting persisting vacancies[3] grew continuously between 2013 and 2016 by about 8 percentage points annually (*Figure 3.2.1*): while in 2013 only 9 per cent of companies reported recruitment difficulties, the proportion was 33 per cent in 2016.
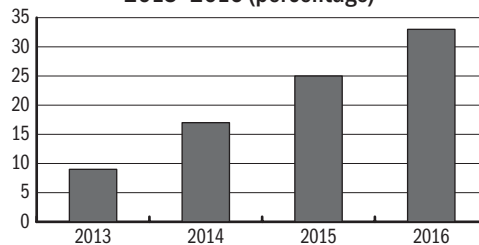
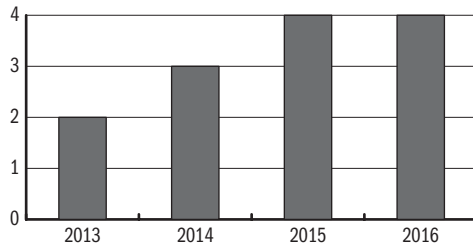Figure 3.2.1: The proportion of firms with persisting vacancies, 2013–2016 (percentage)

Note: N = 4215–4252. The original data of the annual surveys were weighted according to the contribution of the responding companies to the aggregate employment. For more details on the weighting see *IEER* (2016).
Source: *HLMF*.

The figures reveal that although the proportion of firms reporting recruitment difficulties increased three and a half times during the period, the median value of the proportion of persisting vacancies relative to the total number of jobs[4] grew from 2 per cent to 4 per cent, i.e. twofold, and its level was considerably lower (*Figure 3.2.2*).

1 The Hungarian Labour Market Forecast (HLMF) is an online database of the joint national labour market survey of the Ministry for National Economy and the Institute for Economic and Enterprise Research (IEER) of the Hungarian Chamber of Commerce and Industry.

2 The surveys taking place in September and October once a year, coordinated by IEER cover about 7000 companies. The analysis presented here, however, only covers a subsample, since we did not assess persisting vacancies among companies with a headcount of 2–9. The most recent results of the research are available here.

3 Companies with persisting vacancies include companies that have at least one such vacancy.

4 It is the sum of persisting vacancies and the number of employees.

Figure 3.2.2: The proportion of persisting vacancies
relative to the statistical headcount, 2013–2016 (percentage)

Note: N = 522–1847. The figure is based on the subsample of firms reporting
     persisting vacancies. The original data of the annual surveys were weight-
     ed according to the contribution of the responding companies to the aggre-
     gate employment. For more details on the weighting see *IEER* (2016).
     Source: *HLMF*.

Idle capacities

The firms participating in the HLMF survey are asked about the scope of idle
capacities and to what extent this idle capacity is attributable to the short-
age of skilled and unskilled workers. The idle capacity attributable to labour
shortage is measured by the product $C = (1 - c)l$, where c is the utilization rate
of capacity $(0 \leq c \leq 1)$ and l is the extent of idle capacity attributable to the
shortage of skilled and unskilled workers $(0 \leq l \leq 1)$, as reported by companies.
The survey includes separate questions on the extent of idle capacity attrib-
utable to unskilled worker shortage and skilled worker shortage. Changes in
the related indicators are presented in *Figure 3.2.3*.

Figure 3.2.3: The incidence of idle capacity due to skilled and unskilled worker
shortage and the level of idle capacity, 2013–2016 (percentage)
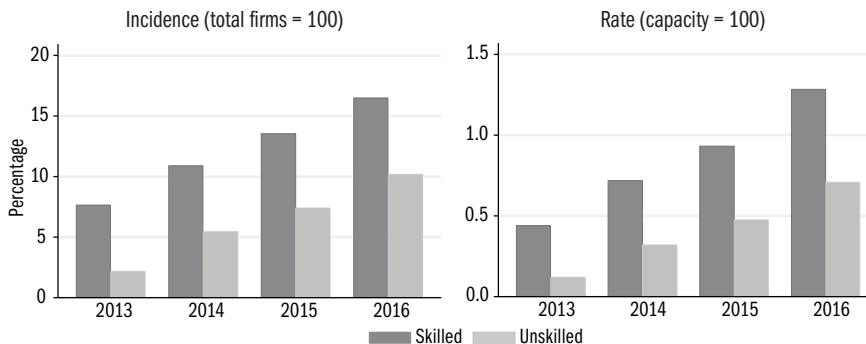
Source: *HLMF,* 2013–2016.

The relationship of shortage indicators to key enterprise
characteristics

Recruitment difficulties may affect various subgroups of firms to a different ex-
tent. Changes in the characteristics of groups of firms affected by recruitment

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difficulties are analysed below, using regression models. Firstly, logit models are used for assessing the link between the key characteristics of companies and the incidence of unfilled *vacancies*. Then the *rates* of presistently unfilled vacancies and idle capacity attributable to labour shortage are evaluated using *fractional regression*[5] among firms which reported persisting vacancies and idle capacities.[6] The calculations relate to 2016 (Table *3.2.1*).

Manifest shortage occurs more often at exporting companies. When examining the presence of vacancies and idle capacity attributable to skilled worker shortage, a strong impact, significant even at a 99 per cent confidence level, was seen: these two symptoms occurred 9–10 per cent more often at companies with a share of exports above 50 per cent.

It is evident that larger firms are more likely to have at least one vacancy and to some extent also that regressions indicate lower rates at larger firms, since at smaller firms even the absence of one person constitutes a high proportion of shortage. Company size is included in the equations for controlling for other factors.

The occurrence of vacancies is above average in the construction industry, while the proportion of vacancies is high in construction and the service sector. Idle capacity is reported by trade companies in the highest proportion and the extent of idle capacity attributable to skilled worker shortage is the highest in industry and trade.

All the equations indicate less frequent occurrence or lower levels among wholly foreign-owned firms but coefficients are significant only in half of the cases.

As for regional differences, it is conspicuous that the area of Transdanubia not including Vas and Győr-Moson-Sopron counties in some cases has similar or higher shortage indicators than these two counties next to the Austrian border.

Finally, probably the most important finding is that coefficients for firms in a positive business situation are mostly negative (some of them may be considered zero), which is in sharp contrast with the findings presented in Subchapter 3.1. While complaints of labour shortage as an obstacle to development occur more frequently at companies in a good situation, manifest shortage is more characteristic of firms operating under adverse market conditions. In this case the results of fractional regressions are stronger: firms in a better situation in business more successfully avoid severe shortage.

Most coefficients for idle capacity attributable to unskilled worker shortage are not significant. Two parameters for industry, as an independent variable, are exceptions, indicating that manifest shortage is more frequent in industrial mass production, where a higher than average proportion of unskilled workers are employed and adjusting the capacity to changing labour market conditions is more difficult than in the service sector or in the construction industry.

5 We opted for the method of fractional regression because of the nature of the dependent variable (*Papke–Wooldridge,* 2008.) Fractional regression was calculated using Stata 14.1 *fracreg* command.

6 Thus the presence of the problem (whether there are recruitment difficulties at the companies involved) and the extent of the problem (that is, in the event the problem is present, what percentage of the total number of jobs it concerns) were modelled separately. The reason for that was to be able to draw conclusions on the severity of the problem based on the group of companies affected by it. By involving non-affected companies, the dependent variable would have been "0" in the majority of the cases.

Table 3.2.1: The relationship of shortage indicators to key enterprise characteristics
in 2016, logit marginal effects and fractional regression coefficients

	V		C1		C2	
	0/1, logit	proportion, fractional regression	0/1, logit	proportion, fractional regression	0/1, logit	proportion, fractional regression
The share of exports (reference category: no exports)						
Below 50 per cent	−0.03	0.03	0.5**	0.08	0.04*	0.06
	(−0.75)	(0.63)	(2.28)	(1.32)	(1.67)	(0.76)
Above 51 per cent	0.11***	0.09	0.09***	0.13*	0.04*	0.11
	(−2.76)	(1.48)	(3.34)	(1.85)	(1.91)	(1.28)
Firm size (reference category: 10–19 workers)						
20–49 workers	0.02	−0.154***	0.01	−0.02	0.01	−0.09
	(−0.82)	(−2.85)	(0.6)	(−0.46)	(0.9)	(−1.18)
50–249 workers	0.08***	−0.521***	−0.01	−0.12*	0.03**	0
	(−2.86)	(−9.45)	(−0.64)	(−1.73)	(1.99)	(−0.04)
250– workers	0.191***	−0.632***	−0.01	−0.14*	0.07**	0.05
	(−5.07)	(−6.45)	(−0.19)	(−1.69)	(2.43)	(0.48)
Sector (reference category: agriculture)						
Industry	0.14***	0.087	0.09***	0.51***	0.04**	0.28**
	(3.93)	(0.92)	(4.72)	(5.58)	(2.24)	(2.14)
Construction	0.18***	0.166*	0.07***	0.4***	0	0.05
	(4.13)	(1.66)	(2.81)	(3.82)	(0.15)	(0.31)
Trade	0.06	0.108	0.12***	0.49***	0.01	0.02
	(1.4)	(1.02)	(4.26)	(4.91)	(0.26)	(0.17)
Services	0.14***	0.188*	0.09***	0.42***	0.05	0.22
	(3.31)	(1.7)	(3.23)	(4.12)	(1.53)	(1.44)
Ownership structure (reference category: wholly Hungarian-owned)						
Mixed	0.01	−0.005	−0.05	−0.12	−0.02	−0.2
	(0.18)	(−0.06)	(−1.28)	(−1.07)	(−0.65)	(−1.34)
Wholly foreign-owned	−0.03	−0.148**	−0.06**	−0.15*	−0.03	−0.13
	(−0.83)	(−2.52)	(−2.28)	(−1.95)	(−1.26)	(−1.18)
Region (reference category: Central Hungary)						
Transdanubia (excl. Győr-Moson-Sopron and Vas counties)	0.18***	0.107	0.14***	0.27***	0.1***	0.25**
	(4.93)	(1.43)	(4.91)	(3.64)	(3.48)	(2.27)
Great Plain and Northern Hungary	0.08**	0.067	0.11***	0.26***	0.05**	0.12
	(2.38)	(1.29)	(4.47)	(3.44)	(2.37)	(1.23)
Győr-Moson-Sopron and Vas counties	0.15***	0.018	0.12***	0.28***	0.06*	0.1
	(3.18)	(0.3)	(3.22)	(3.01)	(1.78)	(0.82)
Business prospects (reference category: bad)						
Satisfactory	0.05	−0.127*	0.04	0.03	0.05**	0.03
	(0.85)	(−1.87)	(1.31)	(0.41)	(2.52)	(0.19)
Good	0.01	−0.20***	−0.03	−0.20**	0.02	−0.1
	(0.17)	(−3.11)	(−1.01)	(−2.5)	(1.1)	(−0.76)

V = Occurrence of persisting vacancies (0/1), and their proportion
$C1$ = Occurrence of idle capacity (0/1) and its proportion attributable to *skilled* worker shortage.
$C2$ = Occurrence of idle capacity (0/1) and its proportion attributable to *unskilled* worker shortage.
Note: Dependent variable: shortage indicator.
*** Significant at a 1 per cent level, ** significant at a 5 per cent level, * significant at a 10 per cent level.

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The above estimations have also been carried out for other years (2013–2015) but the results are not presented here due to lack of space. Overall, the estimates indicated above average shortage at export companies and a somewhat less severe shortage at foreign-owned companies. Findings about regions and sectors are more mixed, varying by the year and by model specification.

References

IEER (2016): Rövid távú munkaerőpiaci prognózis – 2017. (Short-term labour market prognosis) IEER, Budapest.

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