

5. POSSIBLE EFFECTS OF THE CRISIS ON UNDECLARED EMPLOYMENT

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Introduction

In our analysis we examine the possible effects of economic crisis on both the degree and the different forms of undeclared employment. The difficulty of the work lies in the fact that there have been no empirical surveys or data that could enable us to directly examine the changes that have taken place in undeclared or informal employment in the labour market by regional or sectorial segments, or different types of labour force, since 2008. No empirical research referring to this subject has so far been started in Hungary either financed from government subsidy or from private funds. Consequently if we wish to investigate the effects of the crisis on the incidence of undeclared work and the socio-economic factors behind it, we are forced to rely on the data provided by two of our own empirical surveys made in the period immediately preceding the outbreak of the crisis (in autumn 2007 and spring 2008, see Appendix at the end of this chapter), and the findings of the analytic papers based on these data (*Fazekas et al.*, 2010, *Semjén et al.*, 2009a, 2009b, *Czibik-Medgyesi*, 2008, and *Tóth*, 2008). On the basis of the relationships explored in these works, we can then formulate hypotheses and draw speculative conclusions regarding the effects of the crisis. We hope that by way of the review and secondary analysis of pre-crisis data surveys, we have been able to arrive at seemingly trivial hypotheses referring to the possible effects of the crisis on the market of undeclared employment that, in the future, will be confirmed by empirical studies as well.

In reality, the forms of employment not fully bearing welfare charges (taxes and contributions), and thus classified as belonging to the grey economy, are of tremendous variety, and the widely used technical terms normally used to describe them, like eg. undeclared employment, black labour etc., are not entirely suitable to describe this highly complex reality. In the narrow sense we mean by undeclared work any, otherwise legal, income-earning activity that has not been reported to the authorities as legal employment, and thus evades the payment of income tax and social insurance contribution.

A special case “under the same heading” is when the employer reports the employee as someone earning a wage below the actual remuneration paid to him, and the difference is then paid directly to the employee as “cash in hand” (an “off the books” payment, known in Hungary as “payment into the pocket”). In such cases, employer and employee split between themselves the taxes and

social insurance contributions saved. The risk of getting caught at the labour check-up is obviously lower than in the case of classic, totally undeclared work.

Another tax- and contribution-saving form of employment that further reduces the risk of being caught is the so-called masked employment, when the employer enters into a pretended subcontractor's agreement with the employee and pays him on invoice. It may also happen that the employee at the same time is also registered as earning a lower income at the employer's firm, but this is not a necessary condition. As in such cases a part or the whole of the income earning activity is not registered as *employment*, in the broader sense we may also regard this as some form of undeclared employment. At the same time we can consider the use of this term to be a little misleading as the employee in such cases is usually reported as having some sort of income in his own enterprise or at the employer's firm. For this reason in our paper, for the sake of greater terminological precision, we usually call this situation masked employment. In some places, however, such as for example, in titles, subtitles or the introduction, for brevity's sake, we use undeclared employment or undeclared work in the broader sense as well.

Firstly we are going to deal with the pre-crisis size and social components of undeclared employment, then we discuss the possible changes that may have occurred on the market of undeclared work as a consequence of the crisis.

The effects of the crisis on employment, hidden employment and unemployment

The aggregate employment and unemployment data make it obvious that the economic crisis has induced deep changes on the Hungarian labour market. (Table 5.1).

Table 5.1: Changes in employment and unemployment, 2007–2010

Period	No. of employed (1000 people)	No. of unemployed (1000 people)	Rate of unemployment (%)
2007 August-October	3940.2	310.8	7.3
2008 August-October	3916.2	327.9	7.7
2009 August-October	3788.9	439.5	10.4
2010 May-June	3789.4	467.2	11.0

Source: KSH, <http://portal.ksh.hu/pls/ksh/docs/hun/xftp/gyor/fog/fog21007.pdf>

Reported employment fell by 150 thousand people between 2007 and 2010, while the number of unemployed grew even more than this, by 160 thousand people, and the unemployment rate rose from 7.3% to 11.0%. (For further details regarding the changes in employment and unemployment see the introductory chapter in this volume by Bálint–Cseres-Gergely–Scharle.)

However, there are also other, much more extreme changes underneath these rather gloomy aggregate data in certain regions and sectors, and it is exactly

these changes that lend this crisis its special character. Our former research suggests that the incidence and the different types of undeclared employment show significant territorial and sectorial differences: it is reasonable to think that these regional and sectorial effects are further strengthened by the crisis. *Lócsei* (2009) was the first to call attention to the peculiarities of the territorial effects; her analysis published as part 4 of the “In Focus” chapter of the current volume provides us with further valuable insight regarding the effects of the crisis. Hajnalka Lócsei has shown that the first period of the crisis mainly struck companies producing for export and concerned the labour market of the centre and the developed areas, mostly by reducing employment and increasing the number of job-seekers. Later, however, the crisis spread over to the less developed regions, further worsening the labour market situation, which in the pre-crisis times was not so rosy anyway. Another important observation of Lócsei is that while the former, more developed areas recover relatively quickly, in regions lagging behind only government intervention in the labour market (communal works) can somewhat moderate the effects of the crisis, while the deterioration in the competitive sector because of the crisis seems there to be rather more enduring.

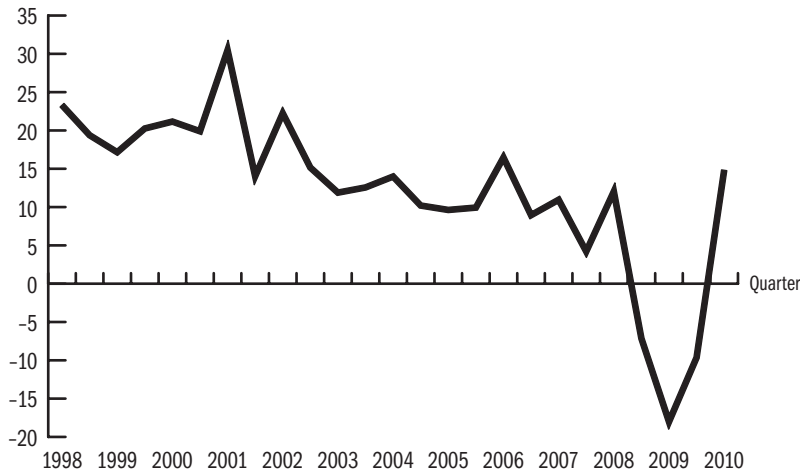
These territorial links can efficiently contribute to the analysis of employment shunning taxes and insurance contributions, as the two basic forms of the latter – paying cash in hand and paying the employee as if he were a subcontractor, i.e. paying a part of his wage for an invoice issued by the employee’s own enterprise – are popular with different social layers and with different sectorial and territorial proportions.

Another important consequence of the crisis on the labour market is freezing or reducing the wages for officially declared work. The former was rather characteristic of the competitive sphere, while the latter was typical mainly of the public sector. In 2009 consumers’ prices rose by 4.2 %; monthly net earnings in the competitive sector grew by slightly more than this, 4.4% over the year, while wages in the public sector decreased by 4.5% over the same period.⁶⁴

Besides layoffs and wage cuts, the third fundamental effect of the crisis from the point of view of our subject was the dramatic decline of business confidence, unprecedented since the slow-down following the transition (Figure 5.1). Its importance is also due to the fact that it radically influences both the companies’ short-term reactions, and their longer-term recruitment plans. In the short run companies react to the loss of their markets and the substantial fallback of orders by cutting down on production costs: besides inevitable staff reductions, further means of cost containment in such situations are offering only tiny wage increases, freezing, or even reducing wages. An interesting corporate cost-cutting technique from the aspect of our narrower subject can be shifting the internal proportion of tax compliance and tax evasion toward the latter.

⁶⁴ Source of data: KSH, Stadat-system, http://portal.ksh.hu/portal/page?_pageid=-37.592051&_dad=portal&_schema=PORTAL

Figure 5.1: Business confidence among Hungarian enterprises 1998–2010 (%)



Source: The GVI business climate index 1998–2010. GVI, <http://www.gvi.hu/index.php/hu/forecast/show.html?id=13>

The degree and forms of undeclared employment before the crisis

As the studies in *Semjén-Tóth* (ed.) (2009) showed from several aspects, a wide variety of declared and undeclared types of employment (from entirely legal employment to completely hidden forms involving tax evasion) are present in the economy simultaneously. Based on a study examining different forms and scenarios of tax evasion with agent-based models (Szabó et al., 2009), 23 types of payment packages can be distinguished (Table 5.2).

From this wide variety of forms, we will give a closer look at only two basic types of evading or avoiding taxes and contributions, paying cash in hand and “invoice-based payments” or “masking employment as subcontracting” (Figure 5.2). When the employees receive their pay from the employer directly as unreported cash payments in hand, both the employment and the payment remain totally invisible for the authorities. In the other case examined here the employees receive at least some part of their compensation not in the form of wages but as a subcontractor, “in return for an invoice”. In the short term this is a practice favourable both for the employer and the employee: for the employer the non-payment of taxes and contributions reduces the labour costs, and, provided that the two parties split the unpaid public dues, it may enhance the chance of employment and increase disposable income for the employee.

When examining the incidence of working in the hidden economy among adults in the 18–60 age-group one can find that the rate of those receiving cash in hand was about 15%, while those receiving at least part of their pay on an

invoice (pretended subcontractors) were around 13–14% in the years preceding the crisis.

Table 5.2: The 23 different types of payment combinations

No.	Paying reported wages	Fringe benefits	Paying on an invoice (pretended subcontracting)	Paying cash in hand	Paying in kind	Type
1	•					Legal
2	•	•				Legal
3	•		•			Mixed
4	•			•		Mixed
5	•				•	Mixed
6	•	•	•			Mixed
7	•	•		•		Mixed
8	•	•			•	Mixed
9	•		•	•		Mixed
10	•		•		•	Mixed
11	•			•	•	Mixed
12	•	•	•	•		Mixed
13	•	•	•		•	Mixed
14	•	•		•	•	Mixed
15	•		•	•	•	Mixed
16	•	•	•	•	•	Mixed
17			•			Hidden
18			•	•		Hidden
19			•		•	Hidden
20			•	•	•	Hidden
21				•		Hidden
22				•	•	Hidden
23					•	Hidden

Note: The dots in the cells of the table indicate the incidence of the given form of payment.

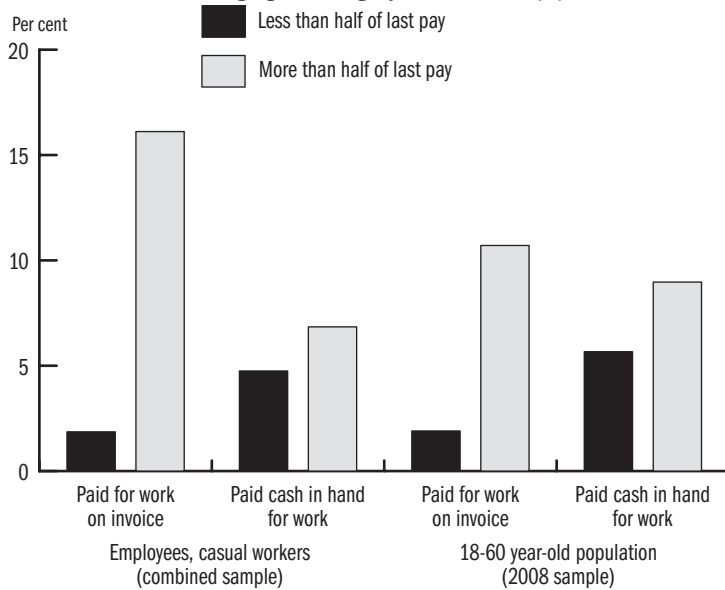
Source: Szabó *et al.*, 2009.

Among those paid cash in hand there were some who received only a smaller part of their pay in this way, while there were others, who received the greater part of the pay as black (unreported and untaxed) payment. 5% of all respondents received less than half of their pay as unreported cash payment the last time they used this method, while 7% of the respondents received more than half of their remuneration in this way when they last did any undeclared work as moonlighters. Those who did any work as pretended subcontractors, the last time typically received the larger part of their pay on invoice (16% of the age-group mentioned), while 2% received only a smaller part of their pay in this form.

The spring 2008 survey showed that over the two years preceding the survey 26% of the 18–60 age-group of the Hungarian population had at some point been paid either cash in hand, or on an invoice as pretended subcontractors. Projecting this ratio to the 15–64 population (4.2 million people), the number

of those in Hungary who had received any sort of undeclared labour income (more precisely, any labour income that was either totally unreported or registered not as labour income and thus completely or partly failed paying taxes and contributions) can be estimated at over 1 million people.

Figure 5.2: Incidence of labour related payments on invoice and as cash in hand payments among employees, casual workers and people of active working age in Hungary, 2007–2008 (%)



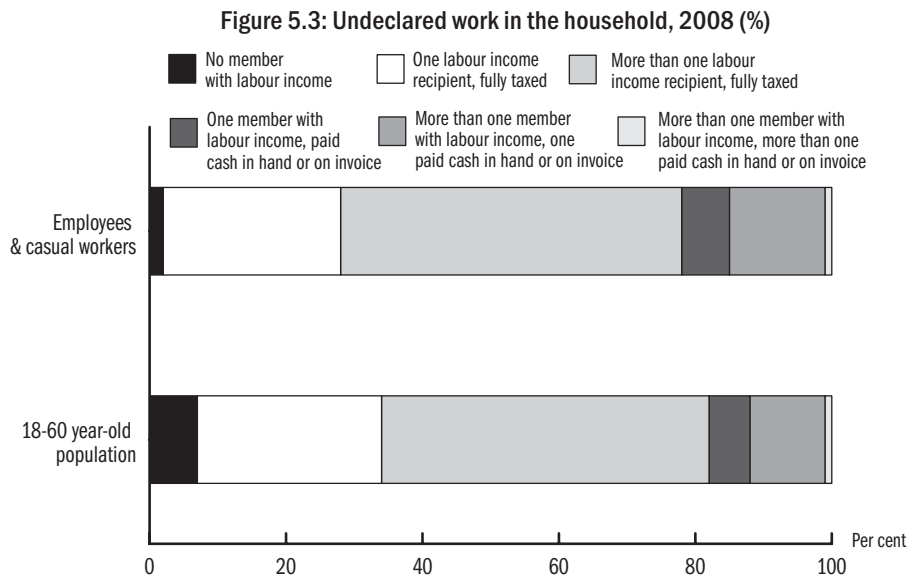
Source: Tóth (2008).

Considering the distortion of opinions obviously occurring during a data survey, i.e. that some respondents may have withheld the truth about their participation in hidden employment, this number is likely to be bigger and the number of those really concerned may significantly exceed 1 million people.

It can also be substantiated that the respondents with a first-hand experience either of undeclared employment or of employment masked as “pretended subcontracting” typically only used just one of these two methods to shun taxes and contributions, and only 2% of them used both types of tax- and contribution-saving solutions during the time surveyed.

We also asked the other members of the respondents’ households whether they had any labour income during the time of the survey, and if so, in what form they were paid: did they receive fully taxable reported income, unreported cash in hand, entrepreneurial income from “pretended subcontracting”, payment for temporary work registered in the casual work booklet, liable to reduced tax and contribution rates only. This also made it possible to examine whether the spouses of the respondents were also concerned by the hidden economy.

Examining the households of all respondents between 18–60, irrespective of their labour market status, in 7% of the households neither spouse had any kind of labour income (Figure 5.3). There was only one labour income recipient per household in 26% of the households, and these recipients received their pay as taxed income. In 6% of the households there was also only one labour income recipient, but they typically received the greater part of their pay as cash in hand or on invoice. In almost half of the households there was more than one labour income recipient, and all of them received their pay as taxed income. In 12% of the households there were more than one labour income recipient and at least one of those received the greater part of their pay on invoice or as cash in hand. However, in the sample one can find only a tiny part (1%) of households in which there are more than one labour income recipient, and where there are also at least two household members paid cash in hand or receiving income from pretended subcontracting.



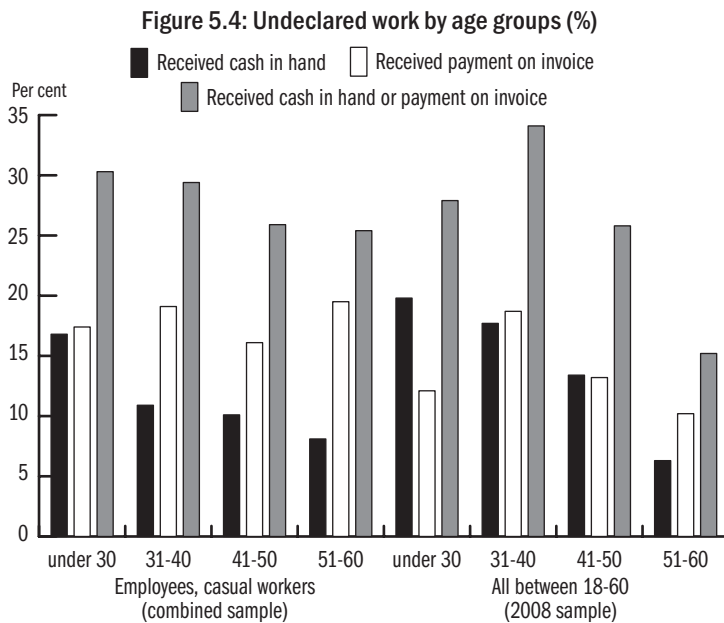
Source: Tóth (2008).

So the accumulation of undeclared employment (or employment masked as subcontracting) within a household is not typical. The households of employees and casual workers show a similar pattern to that of the households in the active working age, the only difference being that in the first group the rate of households with no employment income is obviously lower.

Below we examine how the probability of undeclared employment (or pretended subcontracting) varies in the different socio-economic groups of the Hungarian population. We analyse the incidence of undeclared employment first by demographic variables, then by labour market characteristics, eventually by the financial position of the households.

An important statement made by empirical studies is that in Hungary undeclared work is much more wide-spread among men than among women. (*Elek et al.*, 2009). The surveys analysed here confirm the above statement: the occurrence of cash in hand payments shows a higher frequency among men, eg. in the 2008 survey 19% of them received cash in hand, while for women the same proportion was only 11%. The occurrence of payment on invoice is also slightly higher among men.

We can also find substantial differences in undeclared employment according to age (Figure 5.4). Young employees are more affected, the cash in hand method of remuneration occurs more often among these than the average. Among employees and casual workers, 17% of those under 30 have received some remuneration as cash in hand, while in the other age-groups this rate is around 10%. The rate of those receiving their pay on invoice as pretended subcontractors does not show significant age differences, however, if both main forms of undeclared employment are considered, it is obvious that the young are more affected, as unreported labour income (paid cash in hand or on invoice) shows a higher than average incidence among them.



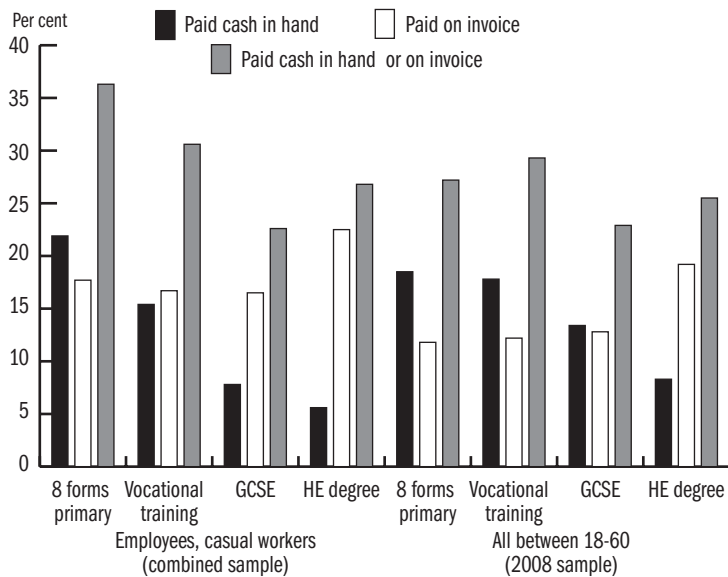
Source: *Tóth* (2008).

The two types of tax-saving employment (undeclared work or employment masked as subcontracting) show different patterns in relation to educational attainment. The frequency of receiving cash in hand payments decreases as school qualification increases. Among those employed regularly or working as casual workers 22% of those with only a primary school qualification received

cash in hand, compared to only 6% among those with a college or university degree. However, in the case of paying on invoice for pretended subcontracting, the situation proved to be the reverse: those with a degree show a higher incidence of receiving their pay in this form than those with lower qualifications. All in all, among employees the incidence of employment not bearing, or not fully bearing, taxes and contributions increases with the decrease of school qualification: Among those who attended a maximum of eight forms of primary school, 36% received cash in hand or payment on invoice, whereas among university graduates only 27% received such payments as remuneration.

These data (Figure 5.5) do not, however, reveal how wages paid for undeclared work would change the income differences between university graduates and those with lower qualifications, estimated from earnings stemming from declared employment. Recent research (Köllő, 2010b) have pointed out that while university graduates conceal 23–41% of their income, households where the head of the family has a lower school qualification hide only 8–13% of their income. This suggests that hiding income is more common among university graduates than among those with lower qualifications, so the actual income difference between the two categories can be greater than reflected by official statistics.

Figure 5.5: Undeclared work according to level of educational attainment (%)



Source: Tóth (2008).

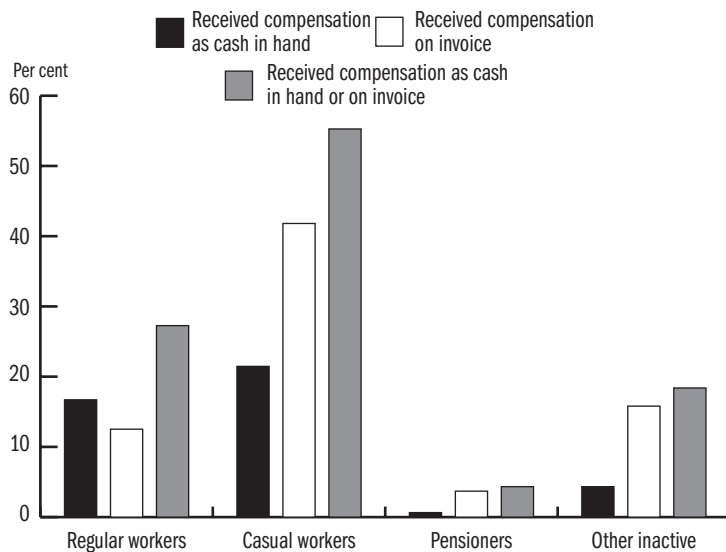
Undeclared employment is slightly more frequent than the average in Budapest and in the villages. Among employees and casual workers, 28% of those living in Budapest and 32% of those living in villages were paid on invoice or cash in

hand. We also found similar rates when examining the incidence of black and grey labour in the whole of the adult population.

Looking at the regional characteristics of hidden and masked employment (i.e. undeclared employment and employment masked as subcontracting), we can also find significant differences. In the counties of Eastern Hungary this type of work is much more common, while in Western Hungary it is less frequent than the average. Among employees and casual workers, in Eastern Hungary 40% of the surveyed population received cash in hand payments or was paid on invoice, while in Western Hungary this rate was only 16%. In central Hungary one can find average rates.

If we look at undeclared employment according to labour market status, it is clear that within the 18–60 year-old population undeclared employment is most common amongst those who are economically active but without regular employment (i.e. casual workers and the unemployed). 42% of the above group received cash in hand and 21% of them did work for payment on invoice in the two years preceding the survey, and in total 55% of them did some work shunning the payment of taxes and contributions. Among those having regular work, the rate of those paid cash in hand is roughly average, while the rate of those paid on invoice is somewhat higher (17%) than what is typical of the whole sample (14%) (Figure 5.6).

Figure 5.6: The share of those receiving labour compensation as cash in hand or on invoice according to labour market status in the 18–60 age group (%)



Source: *Semjén et al. (2009b)*.

We also examined among regular and casual workers, how the type of their occupation and the industry they worked in influenced the incidence of un-

declared work and employment masked as subcontracting. As to occupational categories, blue-collar workers, white-collar workers and managers were distinguished. Among white-collar workers the rate of those having received cash in hand payments was only 2%, which is considerably lower than the 8% observed among blue-collar workers. On the other hand, the rate of those receiving pay as pretended subcontractors was higher among white-collar workers: in total 22% of them received pay on invoice, while this rate was only 18% among blue-collar workers.

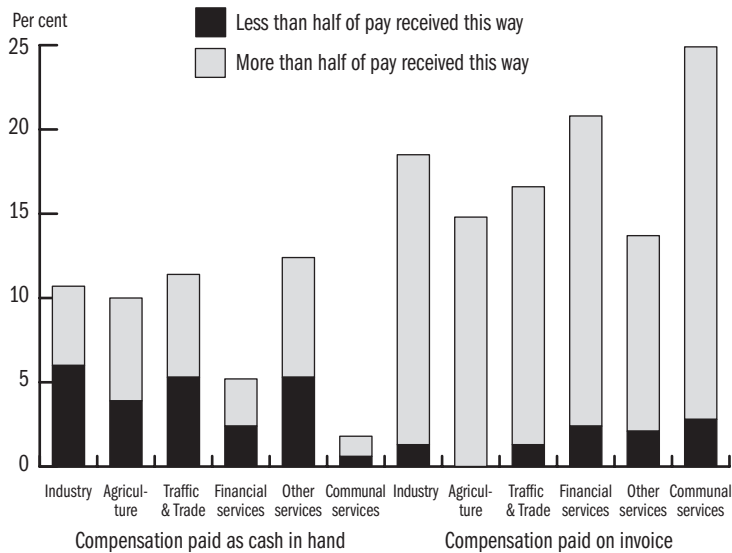
At the same time it came as a surprise that among managers the share of those receiving cash payments in hand was rather high (15%). However, due to the low number of observed cases in this category, this result does not allow us to form a robust conclusion.

Due to the low number of cases we had to reduce the number of sectors by merging some of them in order to be able to analyse the sectorial patterns of undeclared work. Apart from industry and agriculture, services were grouped in four categories. We drew together traffic, communications, telecommunications, and trade and created from them one complex category; financial services and other services were treated as separate categories, while the fourth category (communal services) was made up of public administration, education, culture and health care. The rate of those receiving payments as cash in hand was lower in financial services and especially in communal services, than in the other sectors (5% and 2% respectively). At the same time the rate of those paid as pretended subcontractors was the highest in communal services. In communal services 25% of workers received pay on invoice, compared with an overall average of 19% (Figure 5.7).

The research based on our previous survey results has also shown how the level of compensation received in the main job influenced the incidence of undeclared work among employees and casual workers, and to what extent the former determined whether the respondent had any second job or enterprise.

With those having a main job pay of less than 70,000 forints, the rate of those paid cash in hand was somewhat higher than the average. Those with low earnings showed a higher than average rate (13 %) of being paid black money. With those having a higher main job pay, however, payment on invoice had a higher frequency (23%). For those with no extra earnings beside their main job pay the incidence of cash payments in hand or pretended subcontracting did not differ from the values typical of the whole of the sample. The number of those mentioning any income from second or part-time jobs is rather low, but among those having a second source of labour income the incidence of cash in hand payments is especially high, which makes it likely that in the field of second and part-time jobs undeclared work or pretended employment may have an important role.

Figure 5.7: The share of those receiving labour compensation as cash in hand or on invoice according to economic sectors among employees and casual workers, 2007–2008 (%)



Source: *Tóth* (2008)

The 2008 survey made it possible for us to also analyse the incidence of casual work among those not working regularly at the time of the survey, i.e. among those who are registered as inactive or unemployed. Doing casual work characterized only 11% of those without regular work according to the survey, but it typically went together with receiving some part of labour income as cash in hand or working on invoice. Low case numbers make it impossible to carry out a more detailed analysis, but even this is enough to show that work among the officially jobless or inactive is usually related to the black or grey economy.

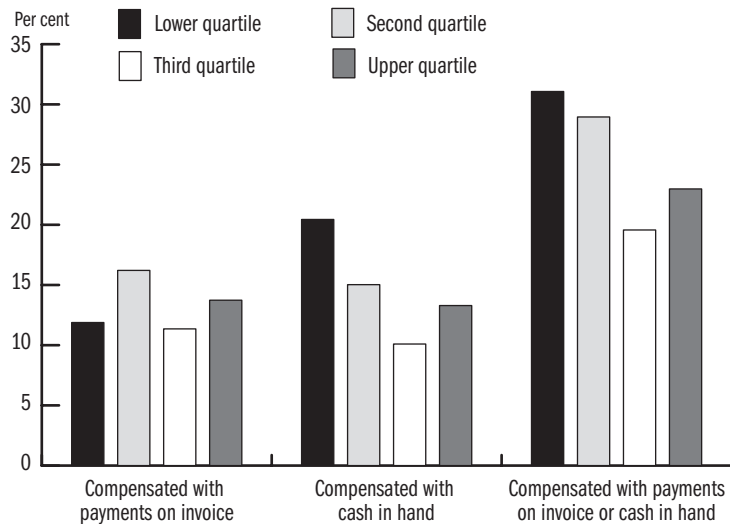
Unemployment, however, affects working in the hidden economy not only as a current state of affairs. Research in labour economics has shown that the longer someone has been unemployed, the more difficult it is for them to find new employment. On the basis of this, the number of months spent out of a job may forecast the individual's chances for finding a job, his or her labour market opportunities. Accordingly, those who have been unemployed for a longer time may show a higher rate of undeclared work (or pretended subcontracting), as they find it more difficult to find a job on the official job market.

The findings of our surveys corroborate this hypothesis: amongst those having been out of job for more than a year 25% admitted being paid cash in hand, which is ten percentage points higher than the average. For those with no previous unemployment spells, this rate was only 9%. However, the rate of those paid on invoice was the highest not among those who have been jobless for the longest time, but among those who were in this situation for shorter than half

a year. Since in this group the rate of those paid cash in hand is also relatively high, it is justified to consider this group to be the most affected by participation in the hidden economy.

The incidence of undeclared work and pretended employment varies not only according to regional, sectorial, qualification and labour market variables, but also according to the financial position of the households (Figure 5.8). On the one hand it is conspicuous that the incidence of undeclared work and pretended subcontracting is more typical of the less well-off households with lower incomes: while in 31% of the lowest quartile of households, from an income point of view, at least one active member of the household does undeclared work, this rate for the highest quartile is only 23%. At the same time, income per household and the incidence of shunning labour related taxes and contributions do not show a linear relationship: the lowest participation rate in work partly or fully shunning taxes and contributions can be observed not in the highest, but in the third quartile (20%). On the other hand, the incidence of the two types of undeclared work surveyed also shows a difference according to household incomes. While receiving cash in hand payments is rather characteristic of the poorer households (it can be observed in 20% of the households belonging to the lowest income quartile), the incidence of being paid on invoice does not seem to be correlated with household income in the same way.

Figure 5.8: The share of those compensated for work with payments on invoice or cash in hand according to the quartiles of per capita family income, 2008 (%)



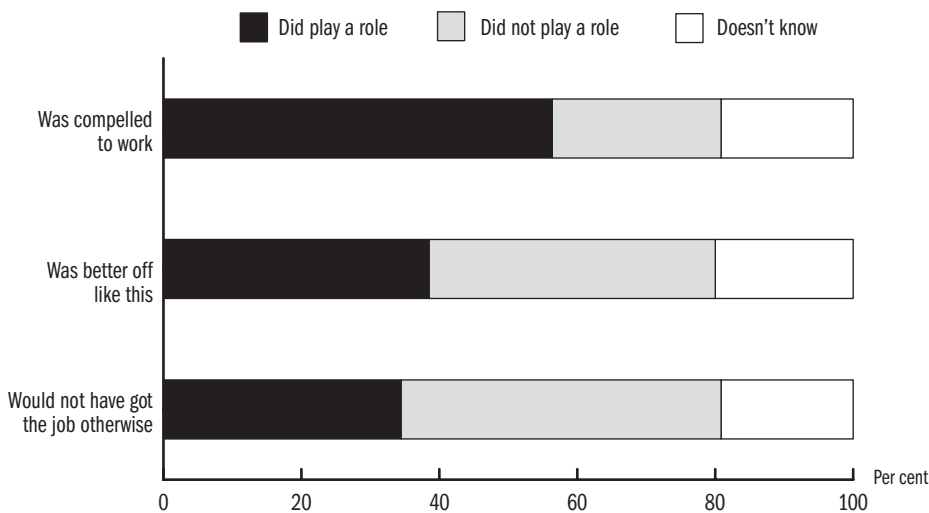
Source: *Semjén et al. (2009b)*.

The profile of those involved in undeclared work and pretended subcontracting can be summarized on the basis of *Semjén et al. (2009b)* as follows: the share of those paid cash in hand is the highest among those on the peripheries of the

labour market. People with lower school qualifications, casual workers, jobless people, and those, currently in employment, having formerly spent a longer period out of work all show a higher than average likelihood of being paid cash in hand. It is more typical of the poorer households that at least one family member takes undeclared work. On the other hand, the incidence of payments on invoice is undoubtedly higher than average among white collar workers. The occurrence of having been paid (also) on invoice during the last two years seems to be above average amongst people with a higher education degree, those working in public administration, health care, education and culture.

Aside from the incidence of work partly or fully avoiding or evading taxes and contributions, there is another aspect worth taking into consideration for our current subject. This is how employees justify taking job offers for undeclared work or pretended subcontracting. The responses highlight the employees' motivations concerning undeclared or masked work and can be helpful in pointing out the possible effects of the crisis.

Figure 5.9: Motives of accepting job offers involving cash in hand payments, 2008 (%)



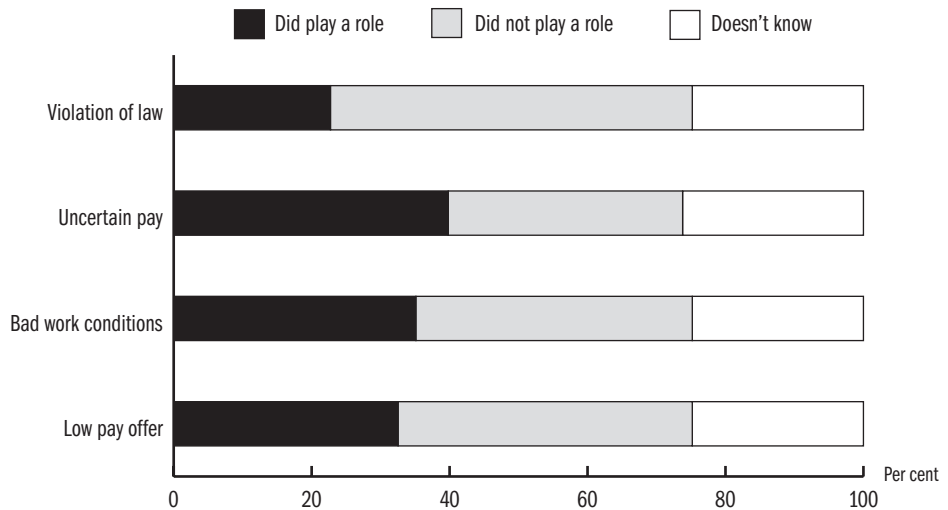
Source: *Semjén et al.* (2009b).

It can be seen from the survey results highlighted above that 15% of the respondents had done work for which they had been partly or fully paid cash in hand.⁶⁵ But also the respondents who had not received cash in hand payments could have come across such job offers. On the basis of the 2008 survey (*Semjén et al.*, 2009b) we can see that 4% of those not receiving any pay as cash in hand had received job offers with such a payment arrangement, which they eventually turned down. The results also show that in total 18% of the respondents had come across job offers involving cash in hand payments. Looking at this from the other side, 29% of those having been offered work with cash in hand

⁶⁵ Besides this, *Semjén et al.* (2009b, pp. 238–239) also give a detailed analysis of the reasons for accepting or refusing offers for pretended subcontracting.

compensation turned down all these offers, while 56% accepted some of these offers (the remaining 14% could not answer the question).

Figure 5.10: Motives of refusing job offers involving cash in hand payments 2008 (%)



Source: *Semjén et al. (2009b)*.

We have analysed the motivations which lay in the background of accepting or refusing such job offers in the case of those who had already received (and at least once accepted or refused) such offers. In our survey we asked them about the reasons for their decision related to the last such offer they had received. Both for refusal and for acceptance, they could choose one or more motivations from several options (listed in the form of closed questions).

Those who accepted work offers involving cash in hand compensation mentioned most frequently the pressure of need (lacking means of subsistence) as the justification for accepting the offer (Figure 5.9): 56% answered that they had accepted the offer because they were compelled to work; 39% said they had accepted it because they were better off this way, while 34% replied that it also played a part in their decision that otherwise they would not have received the job.

Those who turned down job offers involving cash in hand mentioned most often the uncertainty of payment as the reason for their decision: this factor played a part in the negative decision of 40% of those refusing these offers. About one third was the share of those who mentioned low pay and bad working conditions, while 23% referred to the fact that black labour is illegal, that it involves violating the law and may entail punishment (Figure 5.10).

Possible changes occurring as a consequence of the crisis

Linking the main characteristics of undeclared work and pretended subcontracting to the documented effects of the crisis on the legal economy and de-

clared employment it seems to be safe to conclude that the economic crisis has, in all probability, increased the amount and the incidence of undeclared work. As we will see, however, the situation is far from being so simple.

Before going into details on these possible effects, let us have an a priori look at the changes the crisis could have induced in the first place in the incidence and the relative share of declared employment vs. undeclared employment or pretended subcontracting in a company or firm. *Table 5.3* provides a summary of the different types of such changes or reactions. We distinguished 13 different types of these in the table. Each of these starts out from the characteristics of the pre-crisis employment and the nature of the related payment packages chosen by the employer and accepted by the employee (this serves also as the basis for the division of the table into three main blocs). The outcome or result is the change: a shift or a modification of the type of employment relationship occurring as a result of the crisis (2nd column). In the table we have indicated separately (3rd column) how the given change appears – if it does at all – in the official wage and labour statistics reflecting declared work and reported income.

Table 5.3: Possible effects of the crisis on the choice between declared (reported) and undeclared (unreported) forms of payment

Type	Changes caused by the crisis	Change appearing in labour and wage statistics
Before the crisis: declared employment		
1.	Wage reduction in declared employment and paying on invoice appears	Reduction of gross wage
2.	Wage reduction in declared employment and cash in hand appears	Reduction of gross wage
3.	Wage reduction in declared employment, cash in hand and paying on invoice appear	Reduction of gross wage
4.	Layoffs, paying on invoice	Reduction of employment, impact on average gross wages uncertain
5.	Layoffs, cash in hand	Reduction of employment, impact on average gross wages uncertain
6.	Layoffs, paying on invoice and cash in hand	Reduction of employment, impact on average gross wages uncertain
7.	Layoffs	Reduction of employment, impact on average gross wages uncertain
Before the crisis: declared employment with payments avoiding/evading taxes and contributions (paying on invoice or paying cash in hand)		
8.	Wage reductions and a growing share of paying on invoice within all payments	Reduction of gross wage
9.	Wage reductions and growing share of cash in hand within all payments	Reduction of gross wage
10.	Wage reduction and growing share of paying on invoice and cash in hand within all payments	Reduction of gross wage
Before the crisis: undeclared work or employment masked as subcontracting		
11.	Decrease or cessation of cash in hand	Does not appear
12.	Decrease or cessation of pay on invoice	Does not appear
13.	Decrease or cessation of pay on invoice or cash in hand	Does not appear

All but the last three (types 11–13) of the types listed clearly indicate an increase of the share of undeclared or masked employment, either in such a way that the change in the payment package directly increases the share of undeclared or masked employment, or indirectly, so that it involves a reduction of declared employment, while at the same time it does not change the amount of undeclared work or masked employment (e.g. type 7).

We can distinguish three types of corporate decisions related to wages and employment, occurring as a result of the crisis, according to how deeply they affect the company's internal regulations and organization.

“Low intensity” adaptation. It does not affect either the size of the workforce or the internal proportions of the payment packages applied: *freezing or reduction of wages.*

“More intensive” adaptation that affects employment as well as the internal proportions of payment packages: *switching to part-time employment, and introducing payment packages that make undeclared work and pretended subcontracting possible.*

Adaptation having fundamental importance from the aspect of the company's internal organization and internal corporate regulations. *Layoff, followed by re-employment, this time completely as undeclared work or pretended subcontracting* belongs to this third type.

Hungarian companies under the influence of the crisis can take the above steps, or a combination of these steps, and thus can have an effect on the incidence and volume of undeclared work within the competitive sector.

If a company only used declared employment before the crisis, i.e. if employment in the company complied with the rules of paying taxes and contributions, then under the influence of the crisis, as part of the cost-cutting steps, the company may decide to freeze or reduce wages, while in order to cut down on payroll taxes, it may begin in certain groups of employees to apply payment packages involving cash in hand payments or payments on invoice. These forms of adaptation do not involve layoffs, but reduce gross wages that the Statistical Office can keep an eye on, thus distorting official wage statistics.

Company reactions can be represented as new types if these reactions include the dismissal and, in some form or other, the hidden re-employment of the same employee (types 4–6). At these times one can see a reduction of employment in the official statistics, while actual employment did not change: the same person continues to work in the same place, maybe for the same (net) wage, as earlier, only now they do this in the black market. However, the effect of this practice on the documented average wages is uncertain as we do not know whether these dismissals and hidden re-employments affected mainly employees with lower-than-average or with higher-than-average wages.

The weight of undeclared work and pretended subcontracting is increased by the 7th type of adaptation as well, although indirectly: if an employee in

declared employment is dismissed and then later does not find work either on the formal or the informal labour market, while everything else is held constant, the share of undeclared work or employment masked as pretended subcontracting within the total will increase in this case as well.

If a company also used the types of payment typical of undeclared work and work masked as subcontracting already before the crisis (as in adaptation types 8–10), it can increase the share of these kinds of tax- and contribution-saving payments within the labour compensation package under the influence of the crisis without ever changing the number of employees in any way. Then in the official statistics we can see a decrease or just a slight increase of wages, while, in fact, there could have been a wage increase larger than what could be seen in the statistics.

We left those types that do not increase, but decrease the share of undeclared work in the economy for the end. It is worth noting that the economic crisis does not only affect the market of declared labour. Why should we think that it leaves the market of undeclared work untouched? Of course, the crisis does not leave these markets unaffected either: the significant reduction of orders also reduces the business opportunities of companies that had also relied on undeclared work before the crisis, and typically paid the majority of the workers cash in hand or on invoice. For these firms cost-cutting means the decrease of sums paid out in an undeclared form, or the dismissal of unreported employees, i.e. on these markets the economic crisis leads to the reduction of undeclared work and its relative weight.

Let us just take the construction sector as an example, which, in Hungary, applies undeclared work and pretended subcontracting much more commonly than any other economic sector (*Semjén et al.*, 2009a). By the end of 2009, the production volume of the construction sector shrank to 77% of its 2005 level, and the declining tendency continued dramatically in the first six months of 2010, which saw another 14% reduction of the production volume of the previous year. The number of employees appearing in the official statistics also fell between 2007–2009 from 330,000 to 293,000, i.e. by nearly forty thousand people⁶⁶ – but we know that this decrease could also cover an actual increase of employment. The data describing the development of the production volume, however, suggest that undeclared employment or employment masked as subcontracting in the construction industry could have reduced at a much more rapid pace in consequence of the crisis than the pace of reduction shown in the official employment data. This means, had it depended on the construction sector alone, undeclared employment would have decreased in the Hungarian economy as a result of the crisis.

Presumably, however, a process with the opposite direction was taking place in the economy as a whole: we must unfortunately presume that, in consequence of the crisis, undeclared employment and pretended subcontracting became more wide-spread, and within the total remuneration received for works done, the share of cash in hand payments and payments on invoice increased.

⁶⁶ For data referring to production and employment in the construction industry see KSH Stadat-system, http://portal.ksh.hu/portal/page?_pageid=37,592051&dad=portal&_schema=PORTAL.

The reasons behind this hypothesis are basically the effects enumerated in the first part of our paper. In the centre of these effects we can find unemployment. Examining it from the employees' side, we can reach, through multiple cause and effect chains, from the fact of unemployment, or from its growing risk, to the growing probability and growing rate of accepting undeclared work.

Based on the findings of the population surveys made using questionnaires, employment involving cash in hand payments can be considered to be an intermediary position on the labour market between completely legal employment and unemployment. Together with the increase of the level of educational attainment the incidence of employment with cash in hand payments decreases, while it is also well-known that the risk of unemployment increases exactly with the decrease of educational attainment. The reverse correlation between educational attainment and cash in hand payments can be partly explained by the fact that payment packages involving cash in hand are often refused because of "uncertain pay" and "bad working conditions". Taking these aspects into consideration is more typical of people with higher qualifications than of those with a lower level of schooling. In this respect we may conclude that the higher level of educational attainment simultaneously diverts the employees from accepting compensation packages including cash in hand payments and helps reduce the risks of unemployment.

Unemployment, however, is also directly connected with the incidence of undeclared work and cash in hand payments or paying on invoice. We could see earlier that unemployed people and casual workers showed a higher propensity of accepting work offers with cash in hand payments or paying on invoice than employees. Thus it is obvious that the growth of unemployment raises the probability of accepting remuneration packages that include cash in hand payments or paying on invoice, and so it increases undeclared employment. In the broader sense, the risk of unemployment referred to by the former "experience of unemployment" makes the employee inclined to take undeclared work. It shows in the same direction if we extend the interpretation of the risk of unemployment from the employee to the employee's household. If one member of the household has already been out of job, this fact makes (black or on-invoice) employment in the form of undeclared work more likely. We can render these effects probable not only on the basis of logical considerations, their existence is also confirmed by more sophisticated mathematical-statistical analysis (*Semjén et al., 2009a, Fazekas et al., 2010*).

In harmony with the above, the demand for undeclared work and employment masked as subcontracting presumably increases in the first stage of the crisis in those economic sectors and local labour markets in which and where the crisis caused unemployment to grow – so primarily in the centre and in the developed regions of the Dunántúl. It seems also likely that later – when the orders of companies stopped falling or started to increase in these regions (late 2009 or early 2010), unemployment could not grow any higher and em-

ployment also increased slightly, and together with these the incidence of undeclared employment or pretended subcontracting also started to decline.

This is not the case, however, with the regions regarded as backward already before the crisis: here unemployment showed a high level before the crisis as well, and the crisis worsened this situation further with effects that could also lead to the reduction or the elimination of undeclared employment (this could be typical of the regions of North-West Hungary). Amidst the economic crisis, the labour market of these regions is (hardly) kept alive by public sector employment, state subsidies and communal works.

Appendix

The surveys

We have used findings from two questionnaire surveys in our analysis. One of the surveys referred to the savings behaviour of the population in relation to pensions, and was conducted using questionnaires during personal interviews taken between October and 9th November. This survey was prepared for the Economic and Enterprise Research Institute of the Hungarian Chamber of Commerce and Industry. The survey sample of one thousand people consisted of people in their active working age, and was representative in terms of their types of settlements, regions, gender and age group. The second survey was commissioned in 2008 by the Institute of Economics of the Hungarian Academy of Sciences, and it explicitly aimed at surveying the participation in the hidden economy and opinions about this. This research was also carried out on a sample of 1000 people representing the adult population of the country between 18 and 60.

Surveying undeclared employment was carried out using similar questions in both cases. In both surveys the respondents were asked whether they had ever received a part or the whole of their pay as cash in hand. They were then asked about the share of the payment they had received as cash in hand the last time as compared to the total remuneration for the job.

Similarly, the respondents were also asked whether they had ever received a part or the whole of their remuneration for their work on invoice, as a fee from pretended subcontracting. If the answer was “yes”, they were also asked what part of the total payment they had received was paid in this way. In spite of the similar formulation of the questions, however, there are also two differences between the two research projects in surveying employment in the hidden economy. On the one hand, in the 2007 survey the questions referred to the preceding one year (i.e. 2006), while in the 2008 survey the questions referred to the two years preceding the survey (i.e. 2006 and 2007). The other difference is that in the 2007 survey we asked these questions referring to undeclared employment only from those who were either under an employment contract at the time of the survey, or who worked as casual workers at that time. So here we did not receive responses from the self-employed, the unemployed and the economically inactive.