



Case study - Gaps in access to social protection for people working under civil law contracts in Poland

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This report uses Central Statistical Office of Poland data which has no responsibility for the results and the conclusions, which are those of the author.

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EXECUTIVE SUMMARY

The civil law contracts are a special category of atypical contracts used to contract labour in Poland. There are two main types of civil law contracts: the contract to perform specified work (*umowa o dzieło*) and the contract of mandate (*umowa zlecenie*). The latter is more popular than the former. The number of workers with civil law contracts in Poland has increased substantially since the early 2000s. The incidence of other forms of temporary work – fixed-term employment contracts, temporary agency work – has also risen, but civil law contracts imply an especially acute form of labour market segmentation because they're much less regulated than other temporary contracts. This applies both to protection against dismissals and worker rights such as paid leave or the right to join trade unions, and to social security coverage.

Due to lack of data on civil law contracts, it is difficult to assess precisely the number of people working under civil law contracts. According to the LFS data, in 2016 there were 510,000 people working under civil law contracts (in their main job) which is equivalent to 3.1% of total employment in Poland. Among them, 429,000 people worked solely under a contract of mandate, 36,000 people worked solely under a contract to perform specified work, 22,000 people worked under another type of a civil law contract (such as a managerial contract), and 22,000 combined various types of civil law contracts. Data from personal income tax records published by the Ministry of Finance show that in the last few years approx.1 million people has been earning income only on the basis of civil law contracts. The tax records also show that the number of such people has doubled since the early 2000s.

Individuals working under civil law contracts tend to be less educated than individuals working under employment contracts. The incidence of civil law contracts is the highest among young workers but it is also noticeable among workers aged over 50. Women constitute majority of workers under civil law contracts, but once the effect of education, age and occupation is taken into account, women are not more likely than men to work under civil law contracts. The highest incidence of civil law employment is found among low skilled occupations: elementary occupations, and services and sales workers. The sectors which records the highest incidence of civil law contracts are accommodation and food services, and business support services which include temporary work agencies. The prevalence of these contracts is the highest among small firms (with less than nine workers). Besides employment in call centres, the expansion of civil law employment cannot be associated with the expansion of digital economy. Workers under contract of mandate earn less than workers under employment contract. It is due to lower hourly wage and larger incidence of part time employment. The median hourly wage of individuals working under contract of mandate is by 25% lower than the median hourly wage of individuals on employment contract.

Individuals working under contract of mandate can be either exempted from social security and public health insurance contributions in some circumstances (if they are students aged up to 26 years), or can pay lower contributions than they would pay if they earned the same net income under an employment contract. Individuals working under contract to perform specified work are exempted from all social security and public health insurance contributions – this group might not be covered at all. However, more than half of them has probably access thanks to other means, mainly because of an employed spouse. After a raft of changes which have been introduced since 2015 to improve access of workers with civil law contracts to unemployment benefits and maternity benefits. The social security contributions which pertain to civil law contracts have also been increased, although they are not yet identical to contributions pertaining to employment contracts. The key challenge related to social security coverage is in expected low retirement pensions. In the Polish defined-contribution system, low contributions of workers with civil contracts will translate into low pensions even if these workers spend only a share of their careers working under civil law contracts. Estimates show that the pension gap will be about 17%. The recent changes in contribution rules have closed it only to some extent. Many of these workers will be receive minimum

pensions which will have to be subsidised from general taxation. Lower contributions paid by civil law contract workers aggravate the deficit in the pension system. On the other hand, individuals working under civil law contracts contribute more in the sickness and accident insurance contributions than they receive in sickness, carer and rehabilitation benefits, and maternity allowances. In aggregate terms, they cross-subsidise other groups, in particular the self-employed.

1. INTRODUCTION

The civil law contracts are a special category of atypical contracts which exist in Poland. The two types of civil law contracts which are used most frequently in Poland are the contract to perform specified work (*umowa o dzieło*) and the contract of mandate (*umowa zlecenie*). The latter is more popular than the former.

A contract of mandate can be used when the contractor provides a service but there is no requirement to specify an outcome. A contract to perform specified work must specify a particular outcome (tangible or intangible) that a contractor is expected to deliver. However, the interpretation and the enforcement of this rule can be lax. For instance, the Polish Supreme Court ruling from 18 September 2013 stated that painting a company office can be contracted as specified work (outcome), even though this task intuitively seems to represent a service.

Civil law contracts are by definition temporary as the date of completion of a task has to be specified. They are not based on the labour code, but on the civil law instead. Thus they don't offer standard protections against dismissal nor other benefits such as paid leave. Moreover, the social security rules pertaining to these contracts are different than the rules pertaining to employment contracts. In general, civil law contracts provide less coverage – the social security contributions are lower or do not apply at all and the entitlements to social security are accordingly lower or non-existent.

As the number of people working under the civil law contracts increased in Poland over the last dozen or so years, these contracts have become an important facet of labour market segmentation in Poland. Although the number of people working under these contracts has been lower than the number of people working under fixed-term employment contracts, the segmentation they have faced has been more acute.

This paper presents main facts on the use of civil law contracts in Poland. The first section presents the labour market and social situation of people working under civil law contracts in Poland, and regulatory aspects which drive the use of civil law contracts. The second section discusses the difficulties for people working under civil law contracts in Poland of acquiring their own social protection rights. The third section presents how the social protection gaps can be closed by other means which guarantee coverage and access to social protection. The fourth section is devoted to the potential public finance costs of cross-subsidising civil law contracts in Poland and estimated potential benefits of their use. The fifth section outlines potential benefits resulting from the use of civil law contracts.

2. LABOUR MARKET AND SOCIAL SITUATION OF PEOPLE WORKING UNDER CIVIL LAW CONTRACTS IN POLAND

2.1. The nature and extent of the particular form of employment

2.1.1. Incidence of civil law contracts – level and trends

The civil law contracts cover a significant share of employment in Poland. However, it is difficult to assess precisely the number of people working under civil law contracts as estimates based on different sources vary sizeably, from 0.5 million to 4.3 million.

According to the LFS data, in 2016 there were 429,000 people working solely under a contract of mandate and 36,000 people who worked solely under a contract to perform specified work. Additional 22,000 people worked on another type of civil law contract (such as a managerial contract). Another 22,000 people declared that they worked under at least two different types of contract. Hence, according to the LFS data, civil law contract employment amounted to 510,000 people out of 16.2 million of total employment, equivalent to 3.1%.

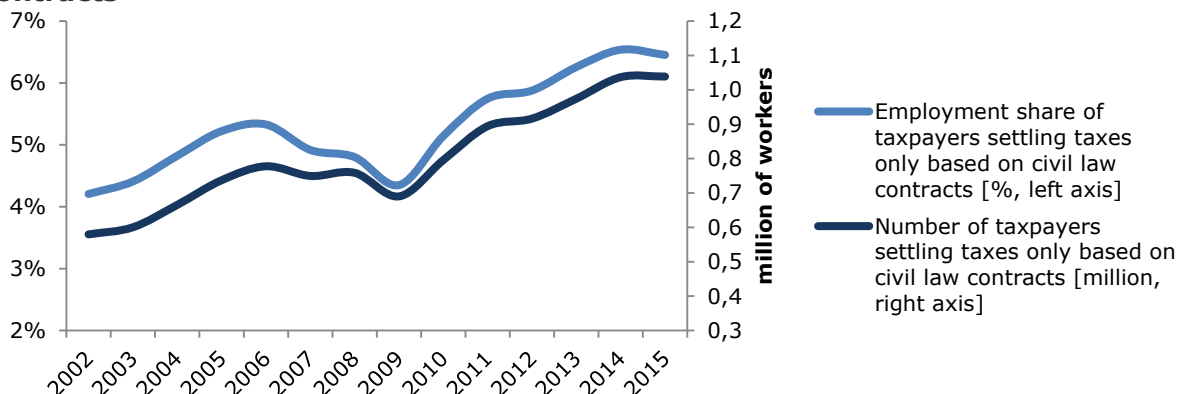
The estimates based on the LFS constitute the lower bound of actual civil law employment since in the LFS the type of contract is surveyed only for worker's main job. The regulations encourage to use a contract of mandate in a secondary job: in such case a contract of mandate is usually exempted from social security contributions. In line with this, the estimates of a number of workers with civil law contracts based on personal income tax records show substantially larger numbers.

The Ministry of Finance have also attempted to estimate the number of workers on civil law using PIT records merged with Social Security data. The preliminary results have been presented recently (Dudek et al. 2017). The number of people with civil law contracts was estimated at 4.35 million in 2015. This number includes people who had an employment contract and a civil law contract in the same year. The number of taxpayers with contract to perform specified work (including contracts which are undistinguishable from contract to perform specified work) was 1.9 million people, but only 162,000 people worked solely under these contracts. The vast majority combined contracts to perform specified work with other forms of contracts (and income), including standard employment. This pattern suggests that contracts to perform specified work play an important role in secondary jobs. The total income declared from contracts to perform specified work (including undistinguishable contracts) was estimated at 16.2 billion PLN, which is equivalent to 8 526 PLN per capita a year.

The number of people working under the contract of mandate (in 2012) may be also identified from the report of the National Health Fund (2013). They indicate that average monthly number of insurance of people working under the contract of mandate or agency contract was 1.56 million. Estimates for other years are not available.

The LFS data suggest expansion of civil law employment since the early 2000s. Until 2016, the accurate identification of civil law contracts was impossible. The detailed question on a type of contract was added to the Polish Labour Force Survey only in 2016. Previously, civil law contracts were not distinguished from fixed-term employment contracts: both forms were grouped as temporary contracts. However, a time series on temporary employment shows strong expansion of temporary employment in Poland in the last fifteen years. In 2002 the number of temporary workers, including workers under civil law contracts, was 1.5 million people, whilst in 2015 it was 3.5 million people. At the same time the total employment rose from 13.8 million to 16.1 million. Hence, over 80% of the net employment growth was the expansion of temporary employment.

Figure 1. Individuals liable for PIT who earned income solely from civil law contracts



Source: own calculation based on data provided by the Ministry of Finance and the CSO.

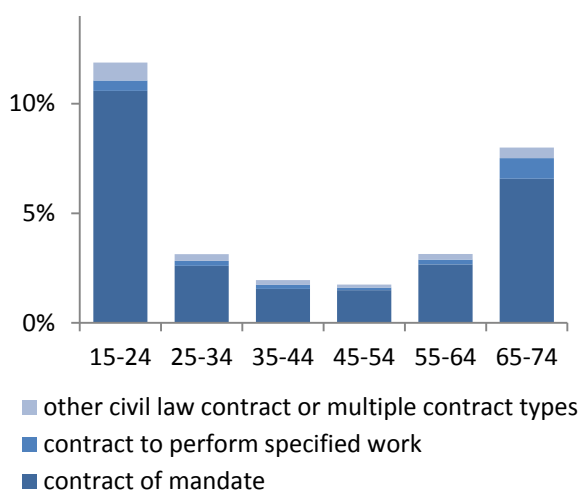
The expansion of civil law employment is showed in other data sources. On the basis of the survey of companies employing at least 9 workers, the Central Statistical Office reported that the number of persons working under civil law contracts increased from 0.55 million in 2010 to 1.17 million in 2014. Contracts of mandate were more often used than contracts for a specific work – in 2014, 0.97 million people worked under contracts of mandate, whereas 0.20 million people worked under contracts for a specific task (Central Statistical Office, 2012; Central Statistical Office, 2015).

Personal income tax (PIT) records collected by the Ministry of Finance are another source of information on individuals working under civil law contracts. According to these data number of taxpayers who settled PIT solely under civil law contracts was 1.04 million in 2015. However, the data do not cover people who worked under an employment contract and a civil law contract in the same year. The Ministry of Finance data show large increase in civil law contracts. In 2002 the number of taxpayers with only civil law contracts was 0.58 million, by 0.46 million less than in 2015 (Figure 1). According to these estimates civil law workers constituted 4.2% and 6.5% of total employment in 2002 and 2015 respectively.

2.1.2. Characteristics of workers under civil law contracts and firms employing them

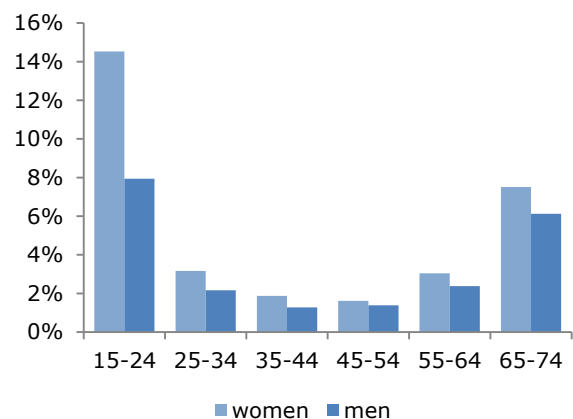
The incidence of civil law contracts is especially high among young workers. According to the LFS data, 11.9% of workers aged 15-24 worked on civil law contracts in 2016. The incidence of civil law contracts decreases with age and in the age group of 45-54 only 1.7% workers worked under civil law contracts. However, workers aged 65 or more experience increased risk of working under civil law contracts. In 2016, the share of civil law contracts workers among all workers aged 65-74 was 8.0% (Figure 2). Hence, the data clearly suggest an U-shaped relationship between the incidence of civil law employment and age. It is also confirmed by the results of the logistic regression presented in Table 1.

Figure 2. The share of workers on civil law contracts by age, 2016



Source: own calculation based on Polish LFS data.

Figure 3. The share of workers on contract of mandate in age and gender, 2016



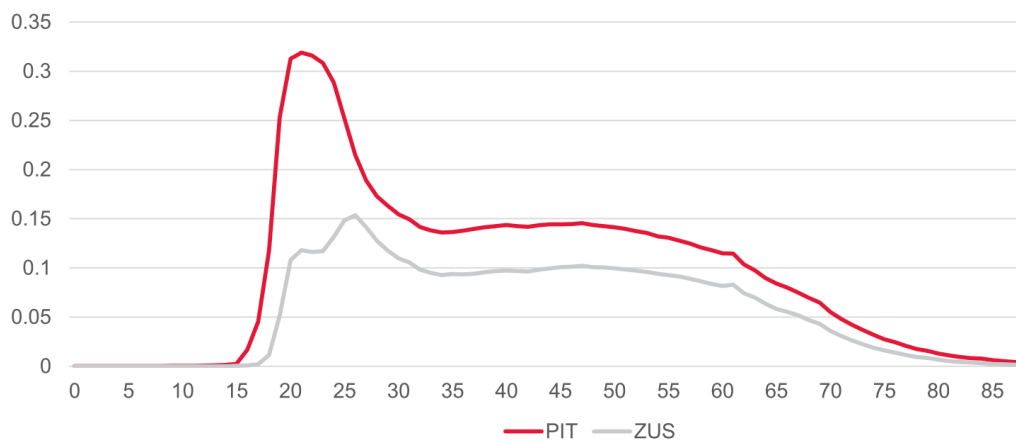
Source: own calculation based on Polish LFS data.

Large incidence of civil law contracts among the young individuals is also visible in the Ministry of Finance calculations (Figure 4). In 2015, the PIT taxpayers who earned income under civil law contracts constituted 30% of all individuals aged under 26. The ratio stabilizes at around 15% among prime-aged people.¹

¹ A large difference between the incidence of civil law contracts calculated with LFS data and with the tax records data can be explained, at least partially, by the fact that the tax records cover all

Civil law contract employment is feminised due to an overrepresentation of women in contracts of mandate. According to the LFS data, the share of women among workers on a contract of mandate equals 52.7%. Women constitute a majority of workers under a contract of mandate in all age groups (Figure 3). The largest gender gap in this respect is among the youngest workers. The share of women among workers under a contract to perform specified work is 47.0% which is very close to the share of women among workers on employment contracts (47.3%). As contracts of mandate make the majority of civil law contracts in Poland, the feminisation ratio for all civil law employment is 51.4%. However, Table 1 shows that the higher incidence of civil law contracts among women than among men can be attributed to the fact that women more often work in occupations and sectors which tend to use these contracts. Once the effect of workplace characteristics is accounted for, women are not significantly more likely to work under civil law contracts than men.

Figure 4. The ratio of workers on civil law contracts to total population in cohort, based on data from tax authorities and Social Security Institutions, 2015

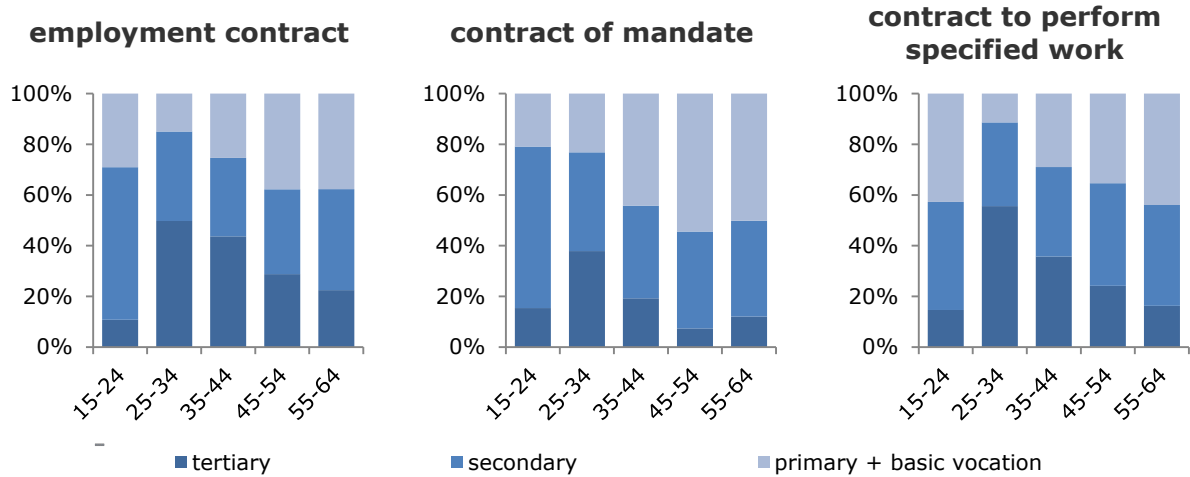


Source: Dudek et al. (2017).

People working under civil law contracts are less educated than workers under employment contract. In 2016, the share of people with tertiary education among workers under civil law contracts was 23%, whilst among the workers under employment contract it was 37%. Table 1 shows that less educated individuals were more likely to work under civil law contracts even if the impact of other characteristics (e.g. occupation, age) is accounted for. The education structure differs between the types of civil law contracts (Figure 5). Workers with contract to perform specified work have education structure similar to workers on employment contract (36% of them tertiary education). The workers with contract of mandate are less educated than workers with other types of contracts. Only 21% of them have tertiary education. In all age groups but the youngest one (under 25), the share of workers under contract of mandate with tertiary education is below the respective share for the workers under employment contract.

civil law contracts, including those for secondary jobs which are being omitted in the LFS, and very short contracts, e.g. one-day contracts, which are very likely missed in the LFS. The Social Security Institution (ZUS) data, which are also presented at Figure 4, show lower incidence of civil law contracts than tax records data since ZUS data exclude workers on contract to perform specified work as well as workers on contract of mandate if they either work on employment contract at the same time or they are students under 26. The third reason explains sizeable difference between taxation and ZUS estimates of the ratio for people aged under 26.

Figure 5. Education structure of workers under different types of contract in age groups, 2016

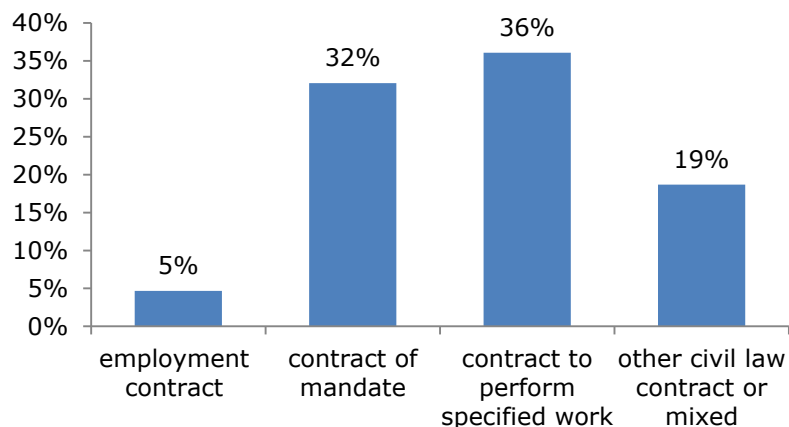


Source: own calculation based on Polish LFS data.

Civil law contracts are relatively prevalent among students. According to the LFS data, in 2016 there were 513,000 individuals who studied and worked at the same time. 15% of working students worked on a contract of mandate. But in the age group under 26, the share of students working under a contract of mandate was 22%. Being a student under 26 is positively associated with chances to work under contract of mandate. Regression results presented in Table 1 show that students under 26 are three times more likely to work under a contract of mandate than the others. The fact that the share of civil law contracts is particularly high among students aged up to 26 years can be attributed to the rules of social security coverage. These individuals are automatically covered by social security thanks to their student status so no contributions are paid if they work under a civil law contract. On the other hand, all social security contributions have to be paid if they work under an employment contract. This creates a strong incentive to employ students aged up to 26 years under civil law contracts. In subsection 1.4 we discuss the institutional incentives in more detail.

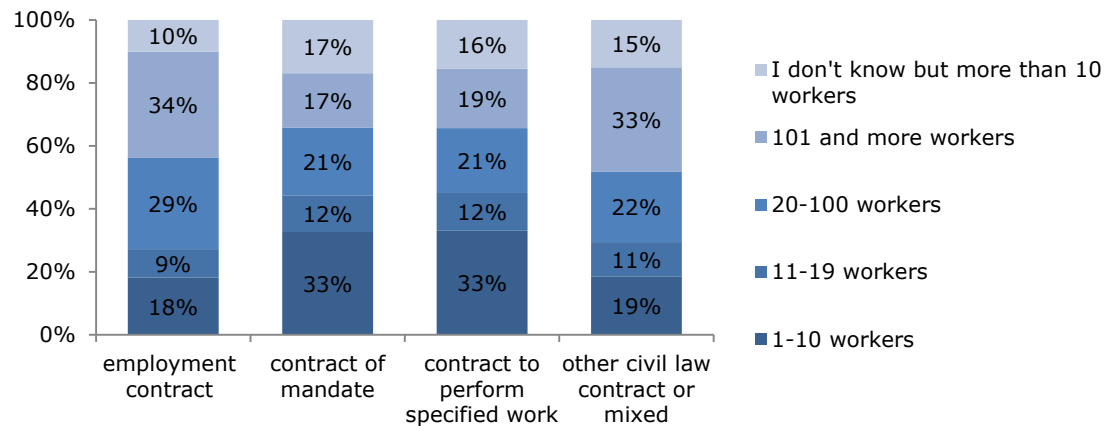
Workers under civil law contracts work part time more often than workers under employment contract. According to the LFS 2016 data, 32% of workers under contract of mandate and 36% of workers under contract to perform specified work were employed part-time (Figure 6). The share of part time workers among those work under employment contract was just 5%. The regression analysis (Table 1) shows that part-time work increases the risk of working under contract of mandate five times in comparison to people working full-time.

Figure 6. The share of part time workers by type of contract, LFS 2016



Source: Own calculations using LFS data.

Figure 7. Firm size and civil law contracts, LFS 2016



Source: Own calculations using LFS data.

Civil law contracts are relatively popular in small firms. One third of workers under contract of mandate or contract to perform specified work are work in small firms with no more than 10 workers (Figure 7). By comparison, the share of employment contract workers who work in small firms is 18%. The share of workers in large firms, with more than 100 workers, is reverse: 17% for workers under contract of mandate, 19% for workers under contract to perform specified work and 34% for workers under employment contract. These patterns are confirmed by the regression results (Table 1).

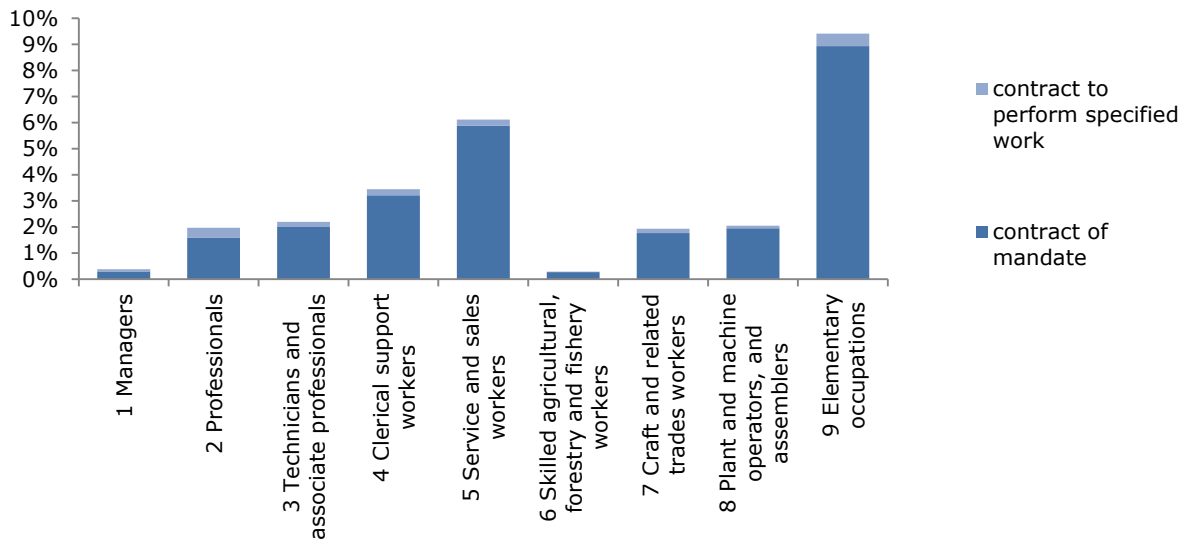
Higher incidence of civil law contract employment is found among workers in large cities. The analysis by the Ministry of Finance (Dudek et al. 2017) shows that the ratio of taxpayers under civil law contracts to all taxpayers in a county positively correlates with the urbanisation degree of county. The largest ratio is found in large cities (forming separate counties) and in counties which embrace suburban areas around large cities. The lowest ratio is found in predominantly rural counties located far from large cities. This finding is reflected in the LFS data, both in the descriptive statistics and regression results (Table 1). The share of workers on civil law contracts in cities with at least 100,000 inhabitants is 4.8%, compared with 2.7% for other cities and towns, and 2.2% for rural areas.

Unskilled workers are more likely to work under contract of mandate (Figure 8 and Figure 9). Regarding occupations, the largest shares of workers working under contracts of mandate are found for elementary occupations (8.9%) and service and sales workers (5.9%). The regression results (Table 1) show that workers in elementary occupations (ISCO major group 9), and skilled agricultural, forestry and fishery workers (ISCO major group 6) have about 20 times higher risk of working under a contract of mandate (instead of employment contract) than managers (ISCO 1). Services and sales workers (ISCO 5) also had a higher risk of a civil law contract, especially of a contract of mandate.

Regarding sectors, particularly high shares of civil law contract workers can be found in accommodation and food services, and real estate, professional and support activities. Workers in these sectors have high risk of work under civil law contracts also after controlling for other personal and workplace characteristics (Table 1). When more disaggregated data are used, private security activities, cleaning activities and activities of call centres are found among subsectors with the highest incidence of contracts of mandate.

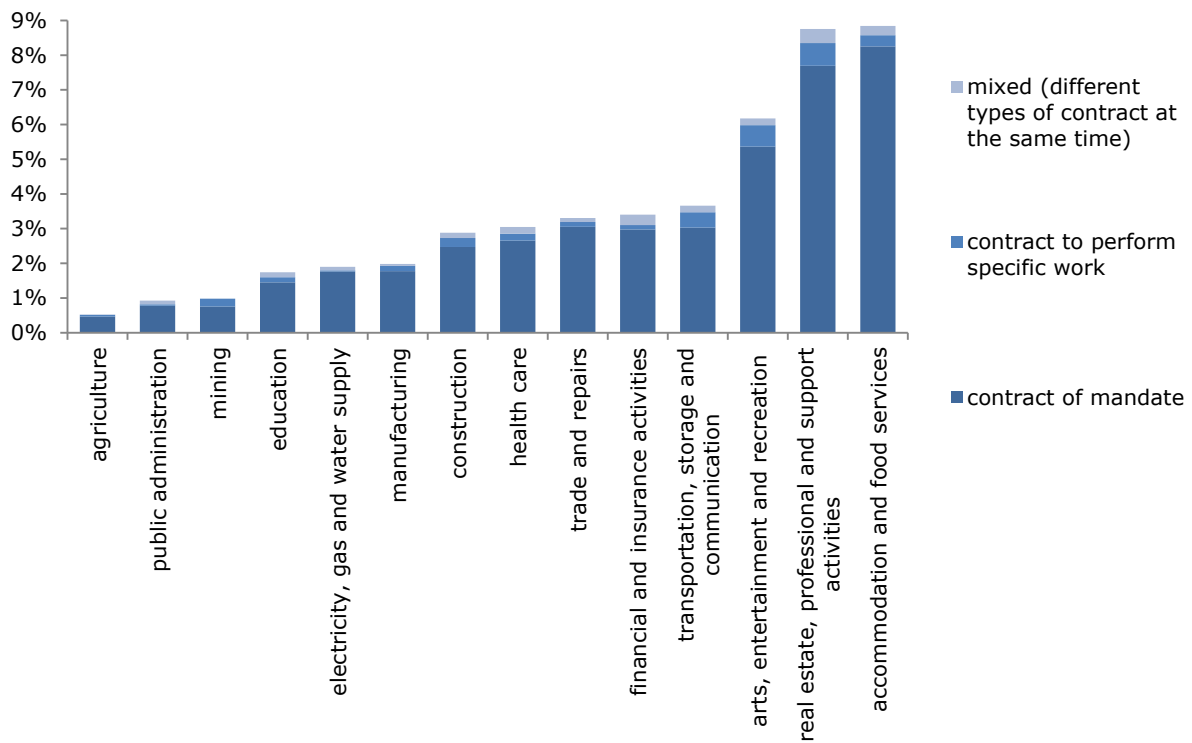
The presented data suggest that the increase in prevalence of civil law contracts cannot be attributed to the growth of digital economy. Only high call centres can be associated with the growth of digital economy, whilst majority of activities with high incidence of civil law contracts (elementary occupations, services and sales, jobs in accommodation and food services) is typical for traditional economy, especially non-tradable services.

Figure 8. The share of workers on civil law contracts by occupational groups, 2016



Source: own calculation based on Polish LFS data.

Figure 9. The share of workers on civil law contracts by sectors, 2016



Source: own calculation based on Polish LFS data.

Table 1. Characteristics of workers under civil law contracts (multinomial logistic regression, relative risk ratios, reference level: employment contract)

		relative risk of contract of mandate over employment contract						relative risk of contract to perform specified work over employment contract					
model		I		II		III		I		II		III	
gender	females	1.57	***	0.85	***	0.92		0.99		0.63	***	0.76	
education (ref. tertiary)	secondary	1.87	***	1.36	***	1.32	***	0.96		2.11	**	1.87	**
	primary + basic voc.	2.46	***	1.51	***	1.36	***	1.12		2.86	***	2.35	**
age (ref. 35-44)	15-24	5.96	***	3.03	***	2.69	***	3.01	***	2.04	**	1.64	
	25-34	1.68	***	1.53	***	1.39	***	1.18		1.17		0.96	
	45-54	0.89		0.91		0.92		0.67		0.66		0.72	
	55-64	1.60	***	1.27	***	1.27	***	1.32		0.93		1.05	
disabled		1.94	***	1.05		0.80	*	1.18		0.64		0.53	*
student under 26				3.03	***	3.07	***			1.76		1.81	
urbanisation (ref. 100k or more)	cities less than 100k			0.56	***	0.61	***			0.55	***	0.65	**
	rural areas			0.48	***	0.55	***			0.40	***	0.51	***
region (ref. Dolnoslaskie)	Kujawsko-Pomorskie			0.75	**	0.76	**			1.00		1.07	
	Lubelskie			1.21		1.27	*			1.20		1.32	
	Lubuskie			0.69	***	0.71	**			1.15		1.22	
	Łódzkie			1.09		1.05				0.44		0.45	
	Małopolskie			0.80		0.75	**			0.90		0.81	
	Mazowieckie			1.33	**	1.28	**			2.03	**	1.98	**
	Opolskie			0.74	**	0.72	**			0.97		0.95	
	Podkarpackie			0.80	**	0.76	**			0.47		0.48	
	Podlaskie			0.80	**	0.82				1.38		1.54	
	Pomorskie			1.42	***	1.36	***			1.32		1.25	
	Śląskie			0.84		0.86				0.85		0.86	
	Świętokrzyskie			1.08		1.07				1.58		1.74	
	Warmińsko-Mazurskie			0.85		0.87				0.72		0.80	
	Wielkopolskie			0.80	*	0.79	*			0.79		0.79	
Zachodniopomorskie			1.12		1.16				0.70		0.77		
part time work				5.68	***	5.33	***			8.75	***	7.88	***
ISCO (ref. 1)	2			4.65	***	4.74	***			3.11	**	3.80	**
	3			5.03	***	4.83	***			1.00		1.02	
	4			6.89	***	6.32	***			1.11		1.08	
	5			13.17	***	12.49	***			1.13		1.09	
	6			22.61	***	18.51	***			2.96		3.03	
	7			5.12	***	5.47	***			0.90		0.89	
	8			5.89	***	6.18	***			0.53		0.44	
	9			22.49	***	20.68	***			2.21		2.11	
	NACE (ref. manufacturing)	A					1.37						0.92
B						0.93						4.29	**
D+E						1.27						0.34	
F						1.70	***					1.75	*
G						0.86						0.68	
H+J						1.93	***					2.63	***
I						1.84	***					1.47	
K						2.10	***					0.50	
L+M+N						3.34	***					2.62	***
O						1.46	*					1.16	
P						1.38	**					1.08	
Q						2.80	***					1.79	
R + S					2.26	***					3.48	***	
private sector						3.10	***					6.72	***
firms with more than 10 workers						0.73	***					0.68	**
_cons		0.01	***	0.00	***	0.00	***	0.00	***	0.00	***	0.00	***
R^2		0.06		0.17		0.21		0.06		0.17		0.21	

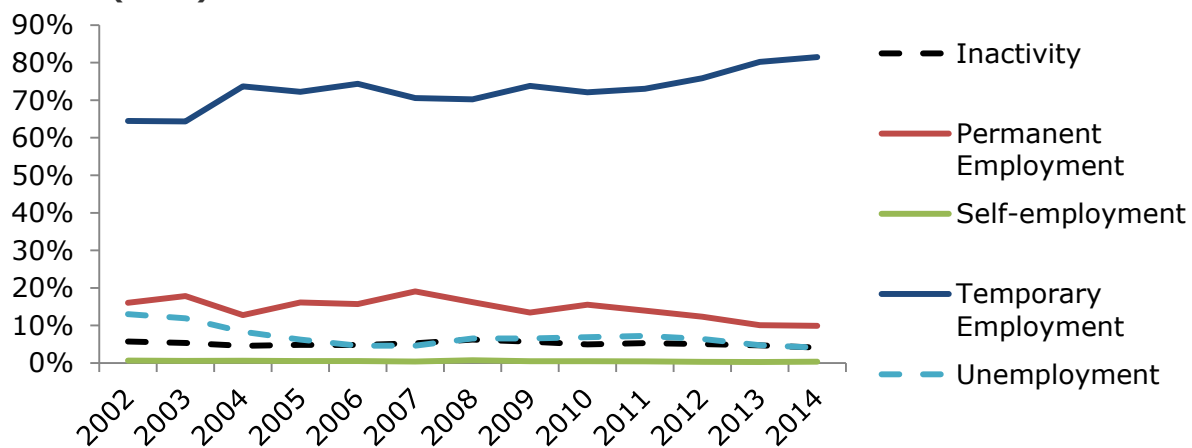
Source: Own estimations based on 2016 LFS data.

2.1.3. Transition rates to standard employment

Data on labour market flows between civil law contracts and other labour market statuses are not available. The only flow data available pertain to temporary contracts which include fixed-term employment contracts and civil law contracts.

The probability of moving from temporary to permanent employment was increasing between 2004 (15%) and 2007 (22%), but declined from 2009 onwards, and fell to 10% in 2015 (Figure 10). The probability that a temporary contract worker with a tenure of up to one year would remain in the same (temporary) job a year later rose from 50% in 2002 to 70% in 2015, whereas the probability that such a worker would move to a permanent job dropped from 16% in 2002 to 7% in 2015. Among temporary workers with at least one year of tenure on a temporary contract, the probability of remaining in the same temporary contract rose from 62% in 2002 to 77% in 2015, whereas the probability of moving to permanent employment declined from 14% in 2002 to 11% in 2015. At the same time, worker flows from permanent to temporary jobs increased from 1% in 2004 to 2% in 2011, and later declined to 1.4% in 2014. Since 2008, temporary workers were increasingly likely to remain in temporary jobs and the average spell of temporary contract has been rising (Lewandowski et al., 2017).

Figure 10. Labour market flows from temporary work, 2002-2014, people aged 15-64 (in %)



Note: Yearly flows.

Source: Lewandowski and Magda (2017).

2.1.4. Institutional incentives for the use of the particular form of employment

A contract of mandate provides an individual with right to social security and health insurance. An employer who hires a worker under a contract of mandate is required to make social security contributions on behalf of the worker. If the contract of mandate is the worker's only source of social insurance, all the worker's social security contributions have to be paid. However, the parties often try to reduce the total tax wedge. Until 2015, it was possible thanks to a clause that stipulates that, if the worker has another source of social insurance — e.g. from an employment contract, from another contract of mandate, or from being a student aged up to 26 years — then the employer is not obliged to make any social security contribution in conjunction with the contract in question. Thus, a worker earning the minimum wage from an employment contract and additional income from a contract of mandate faced substantially lower tax wedge than a worker earning the same income from employment contract.

In January 2016, more strict regulations regarding social security contributions required under contracts of mandate were introduced. Since 2016, if an individual works under multiple contracts of mandate or contract of mandate coincides with an employment

contract, it is required that social security contributions are made from earnings up to minimum wage (social security contributions are always obligatory under an employment contract). For instance, if an individual has three contracts of mandate with gross earnings: 1200 PLN, 800 PLN and 700 PLN, an individual must pay social security contributions from the first two contracts (the minimum wage in Poland is 2000 PLN in 2017), and the third contract is exempted from social security contributions. The contract of mandate is always levied with personal income tax and health insurance contributions.

An employer who hires a worker under a contract to perform specified work is not required to make any social security contributions or health insurance contributions on behalf of the worker. The worker is only required to pay personal income tax. The size of the tax depends on whether the contract involves a transfer of copyright related to the outcome.² In 2015, the income tax effectively ranged from 6.3% to 14.1% of the total labour cost for gross pay between PLN 1 750 and PLN 15 000 per month. In contrast, for an employment contract (both open-ended and fixed-term), the total tax wedge, including social security contributions, was much higher, ranging from 39.3 % to 42.7% in the same wage bracket.

Moreover, until July 2016, minimum wage did not applied to civil law contracts. Since July 2016, an hourly minimum wage applies to contracts of mandate. Contracts to perform specified work remain exempted from minimum wage.

2.1.5. Why people take up the particular form of employment

Civil law contracts are much more often the requirement of an employer than the free choice of an employee. More than 80% people working under the contract of mandate or contract to perform specified work declared that they did not have a choice as the employer offered only such a form of employment (Table 2). The shares are lower (about 40%) in the case of mixed form that means simultaneous concluding different contracts or other civil law contracts.

Table 2. The reason of working under civil law contract (%)

	Employee's choice	Employer's requirement
Contract of mandate	16	84
Contract to perform specified work	17	83
Mixed form	60	40
Other civil law contract	57	43

Source: Own calculations based on Polish LFS module 2014 IV 'Atypical forms of work'.

2.2. Incomes of people working under civil law contracts

Individuals working under civil law contracts earn less than workers on employment contracts.³ However, contracts to perform specified work are associated with higher hourly wages than contracts of mandate. According to the LFS data, in 2016 the median hourly wage of individuals working on employment contract amounted to 12.5 PLN, while the median hourly wage of individuals working solely under contract of mandate was 9.4 PLN, and the median hourly wage associated with contract to perform specified work was 11.3 PLN. The wage distribution for contracts to perform specified work exhibits a thicker

² Taxation is lower if the author (contractor) transfers copyright to the contractee. Copyright may apply to a spectrum of creative, intellectual and artistic works.

³ Magda and Potoczna (2014) and Lewandowski et al. (2016) provide empirical evidence for Poland showing that in general temporary contract workers, including workers on civil law contracts, are paid less than workers employed under open-ended contracts, even after factoring out the influence of individual characteristics, such as gender, education level or work tenure.

right tail than the distributions for employment contracts and contracts of mandate (Table 3 and Figure 11). This observation is in line with the fact 1/3 of individuals who work solely under a contract to perform specified work are specialists (major group 2 in ISCO classification).

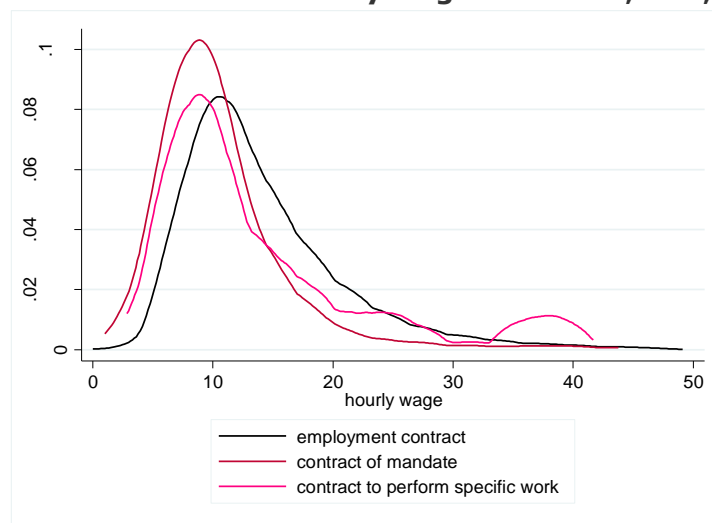
Table 3. Hourly wages and feminisation ratio, 2016

	After-tax hourly wages [PLN]		Share of women
	median	9-decile	
Employment contract	12.50	23.43	47.3%
Contract of mandate	9.38	16.67	52.7%
Contract to perform specified work	11.25	41.66	47.0%

Notes: hourly wages are calculated using information on monthly incomes after taxation for the month before the interview and usual number of hours worked a week.

Source: own calculations based on LFS data.

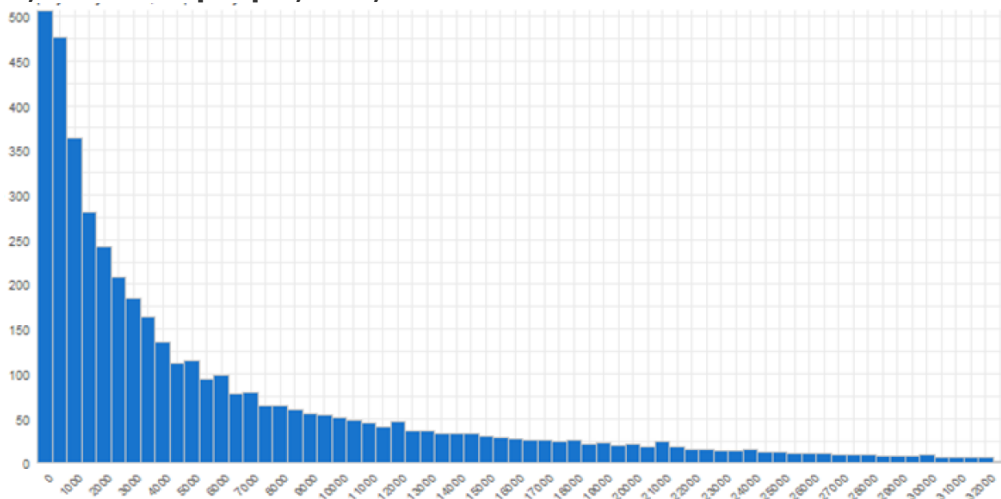
Figure 11. Distribution of declared hourly wages after tax, PLN, 2016



Source: own calculation based on Polish LFS data.

According to the taxation data, median annual income from civil law contracts is between 3000-4000 PLN (cf. Figure 12). This is about twice the monthly minimum wage. It suggests that civil law contract is to large extent casual or part-time.

Figure 12. Distribution of personal income from civil law contracts declared for taxation, thousand people, PLN, 2015

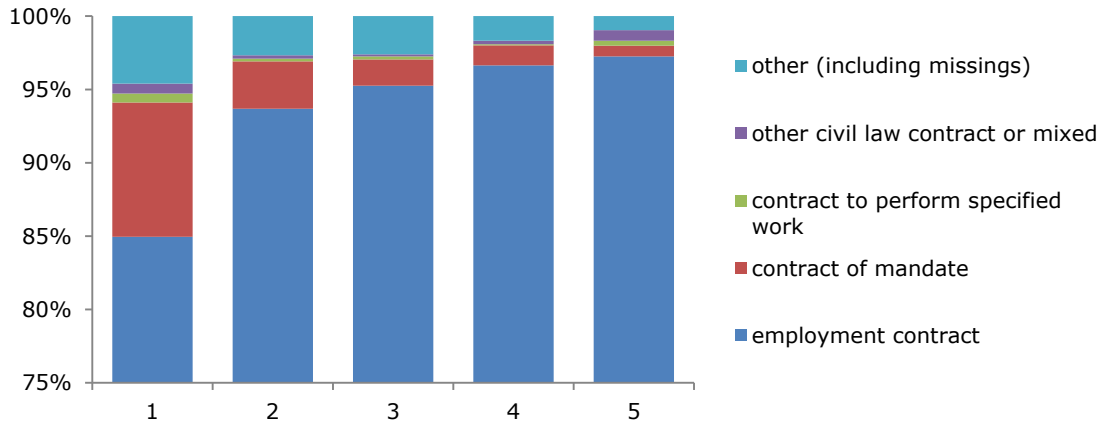


Notes: annual income, 95 percentile.

Source: Dudek et al. (2017).

Civil law contracts are concentrated in the bottom of earnings distribution. The Figure 13 presents composition of employment types for different quantiles of earnings from the main job. In the lowest quantile, the share of civil law contracts is 10.4%, whilst 3.6% in the second, and around 2% in the third to fifth one. The low position of workers under civil law contracts, especially individuals who work under contracts of mandate, come from two sources: low hourly wage and large incidence of part time work. Unfortunately, there is no information on the position of civil law contract workers in wealth distribution based on available data.⁴

Figure 4. Position of workers under civil law contracts in earnings distribution, quantiles, LFS 2016



Notes: The results must be treated with reservation. The data on earnings in the Polish Labour Force Survey have limited reliability. The share of missing responses is as high as 69%. The missing data are not random as individuals with high earnings are more likely to decline to answer. The self-employed are not covered at all. The earnings refer to earnings only from the main work. The earnings from additional sources such as second work, benefits, rental incomes etc., are not included.
 Source: Own calculations using LFS data.

The Polish law states that civil law contracts may not be used to employ workers who are supervised by the employer and who perform work in a location designated by the employer. The employers can be controlled over the proper use civil law contracts by officers of Chief Labour Inspectorate (National Workplace Inspection, 2003 and further). The inspections aimed at controlling the use of civil law contracts were gradually becoming less frequent. In 2002, violations of this rule affecting 17,400 workers were detected. By 2008, this number had fallen to 8,000. Since 2013, the Chief Labour Inspectorate has reported both the number of inspections and the number of violations. There were 8751 such inspections and 3313 (38%) violations in 2013; 14,028 inspections and 3525 (25%) violations in 2014; 13,043 inspections and 3482 (27%) violations in 2015; and 3970 inspections and 1495 (37,7%) violations in 2016. Because of the increase in the total number of these contracts, the probability of inspection declined from at least 3% in 2002 to around 1% in 2008-2015.

⁴ In 2014 the National Bank of Poland conducted a study "Household Wealth and Debt in Poland" which is one of very few sources of information on wealth distribution in Poland. The study reveals that income and wealth positively correlated. However, no information on wealth of civil law contract workers is provided. We might intuitively claim that civil law contract workers should be at the low part of wealth distribution as they are usually younger and less remunerated than employment contract workers. The NBP report can be found here: https://www.nbp.pl/en/publikacje/inne/bzgd/bzgd_2014_en.pdf.

3. DIFFICULTIES FOR PEOPLE WORKING UNDER CIVIL LAW CONTRACTS IN POLAND OF ACQUIRING THEIR OWN SOCIAL PROTECTION RIGHTS

The incentives to use civil law contracts in Poland are largely on the employers' side. Unlike the employment contracts, the civil law contracts are not regulated in the Labour Code and thus do not provide employees with protections or rights guaranteed by the Labour Code. As a benchmark, workers' rights associated with an open-ended employment contract are as follows (Arak et al., 2014):

- Social security contributions paid by employer which includes contributions for: pension fund, disability pension fund, accident insurance, the Guaranteed Employee Benefits Fund and the Labour Fund (and workers are obligated to pay contributions for pension fund, disability pension fund and sickness insurance; as well as contribution for health insurance in National Health Fund).
- Remuneration paid in specific amount and on specific time. It must be not lower than the minimum wage established by the government.
- Regulated working time (not more than 8 hours a day on average) and not more than 40 hours a week on average. The number of overtime hours may not exceed 150 hours per year, however the total number of hours worked in a week may not exceed 48 hours.
- Paid holiday leave granted to the worker in the amount of 20 working days per year if the worker has been employed for less than 10 years, and 26 working days if he/she has been employed for more than 10 years (including years of full-time education). Additionally, the worker is entitled to unpaid leave.
- A woman who gives birth to a baby and, to a certain extent, her partner are entitled to maternity (parental) leave.
- Occupational health and safety (OHS) and ensuring appropriate working conditions (lighting, temperature, chair and even subsidy for glasses necessary to work on computer).
- Reason for dismissal needs to be stated.
- Possibility to file a complaint for unfair dismissal with the Labour Court (and, if the case is won, reinstatement to work).
- Notice period: 2 weeks if the worker has been employed for less than 6 months, 1 month if the worker has been employed for at least 6 months, 3 months if the worker has been employed for at least 3 years.
- Severance payment in case of redundancy.
- Membership in a trade union.

Some of the above mentioned rights do not apply to people on civil law contracts, in particular: working time regulations, holiday leave, occupational health and safety rules, ensuring appropriate working conditions, possibility to file a complaint with the Labour Court and severance payment. Other, concerning people under civil law contracts to a limited extent, are described below and summarised in Table 4.

Under civil law contracts, the minimum wage was not binding until July 2016. Afterwards it has been binding for contracts of mandate. Likewise, the notice period for the contract of mandate is not guaranteed (though it can be stated in the agreement). So it can be terminated, both by employer and employee at any time and with no reason of dismissal needs to be stated. Furthermore, an individual who is working under a civil contract is not entitled to obligatory paid leave, sick leave, severance pay or maternity leave (unless the worker voluntarily made the sickness contributions that are obligatory for workers under Labour Code contracts). The Civil Code does not restrict the number of civil contracts a worker can enter into with a given employer, so individuals may be trapped into signing a series of civil contracts over a long period of time.

Individuals who work under contract of mandate or contract to perform specified work are excluded from membership in trade unions. This rule was declared unconstitutional by the Constitutional Tribunal in 2015. The constitution guarantees the freedom to start and to operate a trade union (art. 12). However, this right was long interpreted as applying to employees only. The Constitutional Tribunal ruled that a worker who is employed under a civil law contract also has the right to join a trade union. The legislation is about to change and the right to join a trade union will be extended at workers under civil law contracts, but at the time of writing in October 2017, the law on trade unions has not yet been changed.

Table 4. Features of the various employment contracts in Poland

Benefits and rights of workers	Employment contracts		Civil law contracts	
	Permanent (PC)	Fixed-term (FTC)	Contract of mandate	Contract to perform specified work
Social security contributions	Yes	Yes	Yes, but can be relatively low or may not apply to all contracts signed by an individual	No
Health insurance	Yes	Yes	Yes	No
Paid leave	Yes	Yes	No (upon agreement)	No (upon agreement)
Minimum wage coverage	Yes	Yes	Yes, since July 2016	No
Period of notice	Yes	Yes, but shorter than in PC until 2016	Upon agreement	Upon agreement
Justification for terminating contract	Yes	No	No	No
Severance pay	Yes	Yes	Upon agreement	No

Source: Lewandowski et al. (2017).

A contract of mandate provides an individual with right to social security and health insurance. An employer who hires a worker under a contract of mandate is required to make social security contributions on behalf of the worker. If the contract of mandate is the worker's only source of social insurance, all the worker's social security contributions have to be paid. Until 2015 if the worker had another source of social insurance – e.g. from an employment contract, from another contract of mandate, or from being a student aged up to 26 years – then the employer was not obliged to make any social security contribution in conjunction with the contract in question.

In January 2016, more strict regulations regarding social security contributions required under contracts of mandate were introduced. Since 2016, if an individual works under multiple contracts of mandate or contract of mandate coincides with an employment contract, it is required that social security contributions are made from earnings up to minimum wage (social security contributions are always obligatory under an employment contract).

As contract of specified work does not require any social contribution to be paid, workers working solely under a contract of specified work are excluded from numerous social protection rights. No pension contributions are made. The contract of specified work does not cover health care insurance.

Individuals who are not covered with obligatory health insurance or other provisions can insure themselves voluntarily in National Health Fund (NFZ). However voluntary insurance in National Health Fund plays a minor role. At the end of 2010 there were only 26,000 people voluntarily insured in NFZ, out of 37.2 million individuals insured in NFZ (Golinowska, 2012).

Persons who do not meet the conditions for compulsory pension or disability pension insurance also can insure themselves individually in the Social Insurance Fund. In such a case the declared amount is used as a contribution basis but it cannot be lower than a minimum wage. Although there is no available data on the scale of voluntary pension and disability pension insurances, it does not seem to be significant.

4. CLOSING SOCIAL PROTECTION GAPS, COVERAGE AND ACCESS BY OTHER MEANS

4.1. Possibilities of gaining access through derived social protection rights

Access to health care is enshrined in the Polish constitution, but in practice it is possible that selected groups are non-covered by health insurance. Individuals working only under contracts to perform specified work and who have no other source of income that would imply coverage by social security constitute the key group. All other groups of workers are covered by health insurance, and so are pensioners (coverage by pensions is almost universal, elderly can also be covered by their children's health insurance), including disability pensioners, as well as children and students (until they finish education, but up to the age of 26 years). Also farmers and farmers' families are fully covered by the public health insurance system.

According to the Ministry of Finance (2017), the upper bound estimate of the number of individuals working only under contracts to perform specified work is approx. 162,000 workers (in 2015). However, the true number of people who are uncovered is probably lower as some of these workers may have access by other means. According to the LFS data, in 2016 36,000 people declared working under contract to perform specified work in their main job. This number may be underestimated. Contracts to perform specified work are often of short duration so many of them may be not observed at the time of the survey. In any case, nearly half of individuals with contract to perform specified work are supposed not to be covered by social insurance by some other mean (Table 5).

Table 5. People working under civil law contract not covered by health insurance and with derived rights, 2016

	Thousand	Percentage of total
All	36	-
Pensioners	6	16%
Disability pensioners	0	1%
Students under 26 years	3	9%
Having a spouse covered by insurance	9	25%
Farmers or farmers' family	1	3%
None of above	16	46%

Note: Numbers and percentages for every category which grants access to derived rights are given for individuals who are not entitled thanks to other means in all rows above.

Source: own calculation based on Polish LFS data.

4.2. The household situation of people working under civil law contracts in Poland

About three fourth of people working under civil law contracts live in households where the main source of income is paid employment (Table 6). In nearly 15% of them the main source of income comes from retirement pensions.

Table 6. Main source of household incomes for people working on civil law contracts, 2016 (%)

	Contract of mandate	Contract to perform specified work
Paid employment	77	75
Work on own agricultural holding	1	2
Self-employment outside private agriculture	4	4
Retirement pension	13	14
Disability pension	1	2
Pre-retirement benefit	0	0
Other social benefits	2	2
Other non-earned source of maintenance	1	1

Source: own calculation based on Polish LFS data.

More than half of people working under civil law contract do not live with partner (Table 7). Among those who live with partner – most frequently the partner works on employment contract.

Table 7. Labour market status of partner for people working on civil law contracts, 2016 (%)

	Contract of mandate	Contract to perform specified work
No partner in household	56	55
Self-employed	4	7
Employee - Labour Code contract	21	24
Employee - civil law contract	4	1
Unemployed	2	1
Inactive	12	11
Other	1	0

Source: own calculation based on Polish LFS data.

There is a possibility to purchase private health insurance. However, the private health insurance market is dominated by group insurance policies (paid partially by employee and partially by employer) so it concerns those with employment contracts. The number of individual insurance policies was 272,000 in 2015 and 386,000 in 2016. The available data do not allow to identify how many of them were purchased by people working under the contract to perform specified work.

5. COSTS OF CROSS-SUBSIDISING CIVIL LAW CONTRACTS IN POLAND

Differences in regulations applied for the various employment contracts in Poland translate into inequalities in the access to social protection rights. This has an impact on the financial flows between labour market segments, in particular in one labour market segment cross-subsidising the social protection benefits of the other segment.

There is a rather small cross-subsidising effect in case of income tax payments. The income tax rates are equal for employment contracts and civil law contracts. Employees working on civil law contracts are usually allowed to apply higher deductible costs than employees on employment contracts, but at the same time the reduction of income tax base due to social security contributions paid is usually lower in their case.

Certainly, a greater cross-subsidising effect between labour market segments occurs in social security system. It can be divided into three elements:

- current differences in sickness and accident contributions paid and benefits received between labour market segments,
- lower expected retirement benefits in civil law contracts segment resulting in greater minimum pension subsidies, which will have to be covered by contributions from other segments,
- past and future losses and gains in pension system revenue and expenditure, due to lower contributions paid by people working under civil law contracts (cross-subsidising of past and future pension expenditure).

In the next three subsections we separately analyse each of these three effects.

5.1. Cross-financing of sickness and accident transfers between labour market segments

Differences in the obligation to pay social insurance contributions and the range of social protection rights between labour market segments (as indicated in section 2) also translate into some current asymmetries in terms of contributions paid to and benefits received from the social protection system by particular groups. That is the case in particular in sickness and work accident social insurance, as transfers related to these categories are paid mostly during working life.

Since 2014, people working under employment contracts contribute virtually the same total amount of sickness and accident contributions as they receive each year in transfers from these components of social protection system (Table 8). However, among the self-employed and individuals working under civil law contracts it is not the case. In particular, the self-employed receive much more transfers than contributions paid, while people working under civil law contracts pay more than they receive. In 2016 the sickness, carer, rehabilitation and maternity allowances or benefits received by the self-employed were almost 2.5 times higher than the sickness and accident contributions paid by this group. In absolute terms this translated into a 1.7 billion PLN gap. At the same time, people working under civil law contracts received in benefits only 77% of the total amount of contributions paid. This share was even lower in 2011 and 2012 when it amounted to around 50%.

Table 8. Sickness and accident contributions paid and transfers received by employees, the self-employed and individuals working under civil law contracts, 2011-2016 (million PLN, current prices)

Segment	Category	2011	2012	2013	2014	2015	2016
Employment contracts	sickness and accident contributions	14 589	15 126	15 234	15 473	16 201	16 955
	sickness, carer and rehabilitation benefits/allowances	7 658	8 235	8 808	8 921	9 801	10 814
	maternity allowances	2 850	3 392	3 764	5 606	6 110	6 533
	contributions - transfers (monetary difference)	4 081	3 498	2 662	945	290	-392
	contributions - transfers (% difference)	28%	23%	17%	6%	2%	-2%
Self-employment	sickness and accident contributions	951	1 041	1 132	1 121	1 137	1 199
	sickness, carer and rehabilitation benefits/allowances	860	1 014	1 277	1 450	1 757	1 737
	maternity allowances	149	230	508	1 068	1 371	1 122
	contributions - transfers (monetary difference)	-58	-204	-652	-1 397	-1 991	-1 661
	contributions - transfers (% difference)	-6%	-20%	-58%	-125%	-175%	-138%
Civil law contracts	sickness and accident contributions	169	191	209	233	261	316
	sickness, carer and rehabilitation benefits/allowances	68	87	104	123	149	179
	maternity allowances	11	15	22	42	53	65
	contributions - transfers (monetary difference)	90	90	82	68	59	72
	contributions - transfers (% difference)	54%	47%	39%	29%	23%	23%

Source: own calculations based on data received from Social Insurance Institution.

The increase in transfers received (in comparison to contributions paid) has been recorded among all three groups, and it resulted from the decision to extend the maternity leave from 6 to 12 months (introduced in 2013), and expand the coverage of maternity leaves to the self-employed, individuals working under civil law contracts (as well as students and the unemployed). The increase in spending on maternity allowances

was the largest among employees (2.8 billion PLN between 2012 and 2016), followed by the self-employed (900 million PLN) and civil law contract workers (90 million PLN). At the same time, the total contributions paid by the employees rose by 1.8 billion PLN while contribution paid by the self-employed rose by only 150 million PLN, and contributions paid by individuals working under civil law contracts rose by 125 million PLN. As a result, in 2016 the civil law contract workers contributed more than they received in transfers while the self-employed were cross-subsidised to the largest extent.

5.2. Cross-subsidising of expected retirement benefits

In the Polish defined-contribution pension system, high incidence of civil law contracts leads to lower expected retirement benefits. This is not only the consequence of lower contributions paid, but also of more irregular employment cycle in the case of civil law contracts in comparison to employment contracts. This translates into lower numbers and amounts of contributions paid by workers, and therefore lower retirement benefits in the future. Moreover, due to indexation and accumulation of interest on the collected contributions, the earlier in the life cycle work on civil law contract occurs, the higher is the potential loss.

Previous research (Lewandowski, Stroński and Keister 2016) shows that a career in the civil law contracts segment significantly affects the level of expected retirement benefit. It leads to lower the future pension by PLN 538 (in constant prices of 2015) for men and PLN 428 for women. This translates into a difference amounting 17.7% in the case of men and 17.2% in the case of women, with respect to the expected retirement benefit in the segment of employment contracts. In terms of retirement benefit as a percentage of the last wage before retiring, the difference is 12 pp for men and 9 pp for women, respectively (Figure 14-15).

Figure 14. Expected retirement benefit in the employment contract segment and the civil law contract segment by sex (in PLN, 2015 prices).

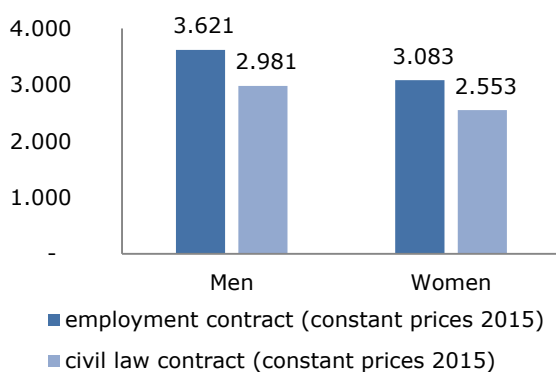
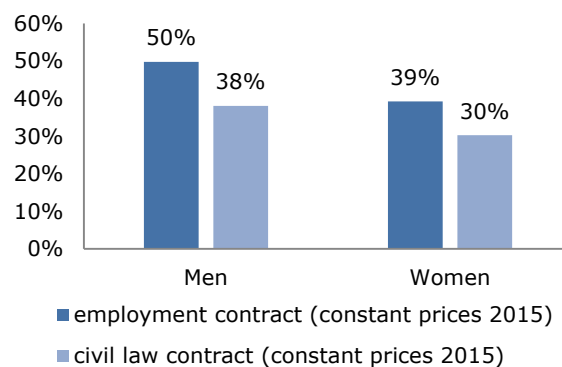


Figure 15. Expected retirement benefit in relation to expected last remuneration before reaching retirement age in the employment contract segment and the civil law contract segment by sex (in %).



Source: Lewandowski, Stroński and Keister (2016).

The obligation to pay contributions for all contracts of mandate from the minimum wage level (effective from 1 January 2016) allows closing 1/4 of the pension gap between labour market segments. The impact of this regulation is slightly greater in the case of women (it enables bridging 4.5 pp of 17.2% gap) than in the case of men (4.3 pp of 17.7% gap). This is related to lower average pay among women. For the same reason – lower average pay – the impact is larger on poorly educated persons than on well-educated persons.

Lower expected retirement benefits means that more individuals in the future will be covered by the minimum pension guarantee. This translates into higher future cost of

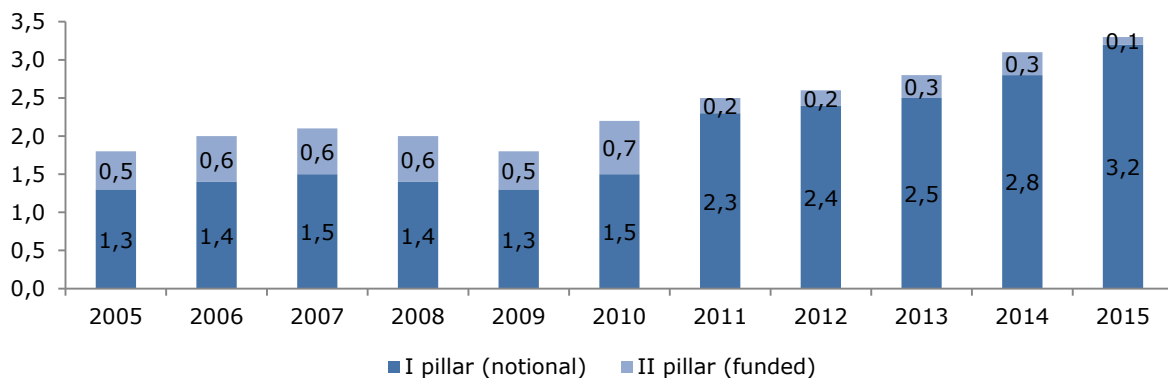
subsidies to minimum pensions. Therefore high incidence of civil law contracts results in a cross-subsidising of future retirement benefits – the higher future cost of subsidies to minimum pensions (caused by current high incidence of civil law contracts) will be covered by contributions paid by people working in the other labour market segments.

5.3. Cross-subsidising of past and future pension system expenditure

Widespread use of civil law contracts in Poland has its impact not only on the level of expected retirement benefits, but also on the financial situation of the whole pension system. On the one hand, lower numbers and amounts of contributions paid by workers due to civil law contracts reduce the pension system revenue, but on the other hand in a defined-contribution pension scheme this translates into lower pension system liabilities. However, the impact on the pension system revenue and spending is not the same – both in terms of the magnitude of the effect (i.e. because of minimum pension regulation) and the moment the effect occurs – therefore it has also consequences for pension system balance.

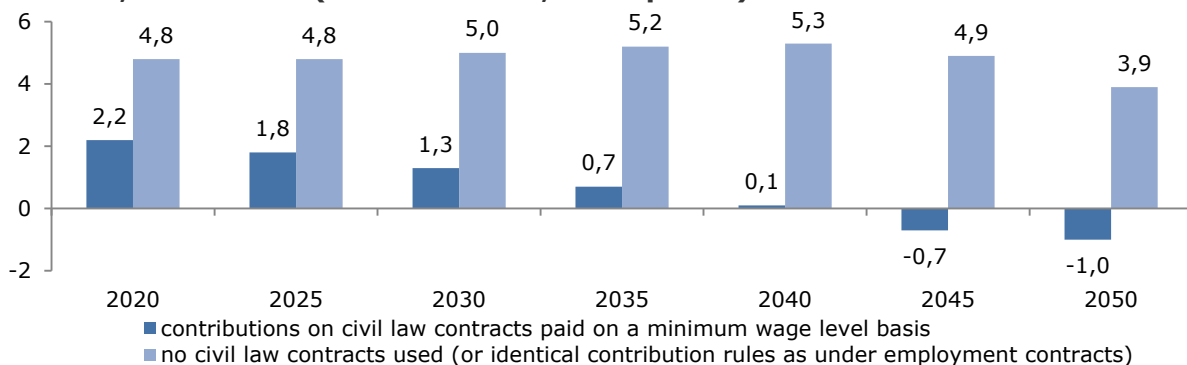
Previous research (Lewandowski, Sawulski and Stroński 2016) shows that in the recent years growing prevalence of civil law contracts had almost no impact on pension spending, but significant impact on revenue from contributions. The accumulated value of pension system revenue losses is estimated to have reached PLN 26.2 billion in 2005-2015, out of which PLN 21.4 billion were revenue losses in the first pillar (PLN 1.9 billion per year on average) and PLN 4.9 billion were revenue losses second pillar (OPFs) revenue (PLN 0.4 billion per year on average) (all values expressed in constant 2015 prices). Because of high incidence of civil law contracts revenues from contributions were by at least 2.2% (in 2009) and by as much as 3.1% (in 2015) lower in comparison to no civil law contracts scenario (Figure 16).

Figure 5. Loss of pension contributions as a consequence of the use of civil law contracts in Poland, 2005-2015 (billions of PLN, 2015 prices)



Source: Lewandowski, Sawulski and Stroński (2016).

Figure 17. Impact of different labour market scenarios on the pension system balance, 2020-2050 (billions of PLN, 2015 prices)



Source: Lewandowski, Sawulski and Stroński (2016).

The future impact of labour market segmentation on revenues from pension contributions will be noticeable, but will gradually decrease. In 2020, the impact of segmentation is estimated to account for 4.2% of the contribution revenue gap and after 2030 – approx. 3.5%. This results from both the expected decrease in the share of workers employed under civil law contracts (due to demographic changes and rising share of tertiary educated workers) and the obligation to pay contributions on at least a minimum wage basis (from 2016).

However, the obligation to pay social insurance contributions at least on a minimum wage basis does not offer a sustainable (long-term) solution to the problem. It allows to close nearly half of the revenue gap resulting from high incidence of civil law contracts (PLN 2.3 billion out of PLN 5 billion) by 2020, but less than 1/10 of the revenue gap after 2040. The relative impact of this obligation declines over time because the share of least-educated workers, who are the most likely to be covered by this rule, declines over time.

Contrary to revenues, the longer the projection period, the higher the difference of pension fund spending between the labour market scenarios. Until 2030, the differences do not exceed PLN 1 billion (in 2015 prices), but in 2040 they reach PLN 2.1 billion (1.1% of spending in the benchmark segmentation scenario) and in 2050 – 5.2% (1.9% of spending). These are the results of both – deferred consequences of the lower contributions paid in the past and in the years to come, as well as higher percentage of individuals who will receive the minimum pension in the future. As a result, the labour market segmentation deteriorates the pension fund balance both in the short- and in the long-term. According to the estimates, its impact over the entire forecast period amounts to approximately PLN 5 billion annually (in 2015 prices) (Figure 17).

The deterioration of the pension system balance due to widespread use of civil law contracts in both – the past and the future – means that people working in other labour market segments suffer greater burden of maintaining pension system. Thus, the losses in pension system revenues (not fully compensated by future expenditure reduction) have to be cross-subsidised by higher contributions imposed on other employment segments.

6. POTENTIAL BENEFITS RESULTING FROM THE USE OF CIVIL LAW CONTRACTS

It is possible that the availability of less regulated, less costly civil law contracts have induced some additional labour demand which would not have occurred if these contracts were not available. Unfortunately, the estimation of a potential employment effect of temporary contracts in Poland is not possible due to the lack of an appropriate instrument for measuring these effects. This caveat applies to both civil law contracts and fixed-term employment contracts, especially that until 2016 both these contract forms were grouped in the LFS as temporary contracts. The proliferation of temporary contracts was not preceded by any significant changes in the labour code. The legal conditions for using temporary contracts were identical for all workers and firms, regardless of firm size, sector, or occupation. Thus, it is not possible to assess the causal impact of temporary contracts on employment using a natural or a quasi-natural experiment approach.

However, Lewandowski et al. (2017) used a stylised labour demand model to quantify the upper bound of a potential job creation effect due to lower labour costs incurred through the use of temporary contracts. They accounted for three sources of differences in the labour costs associated with permanent and temporary contracts in Poland. First, differences in the indirect costs of more stringent regulations on the termination of an open-ended contract that result from difficult-to-measure items such as the inability to lay off workers in case of reduced demand, severance payments, notice periods, the potential costs of resolving disputes, and the costs related to forgone wages. Second, differences in the social security contribution levels (particularly for the employer) required by (some) temporary and open-ended contracts. Third, a wage penalty associated with temporary jobs.

Under the assumption that all labour cost savings allowed by less costly temporary contracts were used by firms to employ more workers, Lewandowski et al. (2017) found that a potential net employment effect did not exceed 4% of dependent employment in 2015. However, they cannot rule out the possibility that the net employment effect was zero. If any of the labour costs savings offered by temporary contracts were channelled into higher firm profits or higher wages for permanent workers, the job creation effect would have been smaller; and, in the extreme case, close to zero. There are no data to assess how firms utilised these labour cost savings.

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