

# **Informal employment at labour market entry. A comparative study of Croatia, Poland and Ukraine.**

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## **Abstract**

Using longitudinal, comparable micro-data from three recent school-leaver surveys, this paper provides first empirical evidence on the determinants and early career consequences of informal employment in early labour careers of graduates in Croatia, Poland, and Ukraine. While the share of informal first jobs is highest in Ukraine, the country with the worst institutional mix of high taxes, low policy quality and widespread corruption, we find similar allocation patterns into informal jobs based on individual resources and employer's characteristics in all three countries. Furthermore, we can show that career damages in terms of lower employment and formal employment chances are most pronounced in Poland, while in Ukraine, the informal sector seems to provide a "parallel economy" of rather secure (or repeated) informal jobs but also lower upward mobility into formal jobs. In contrast, informal sector activity is least stable in Croatia, where subsequent non-employment risks but also ways to formal employment are very pronounced.

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**Key words:** comparative research; informal employment; labour market entry; career consequences

## **1. Introduction**

European labour markets have been burdened with increasing structural uncertainty induced by globalization and international competition (Mills and Blossfeld 2003). Central and Eastern European (CEE) countries have additionally faced deep economic crisis and severe restructuring processes in their transformation to market economies (Kogan, Gebel and Noelke 2008). These rising uncertainty stimulated employers' demand for labour market flexibilization in order to reduce labour costs and rigidities in the labour market (Esping-Andersen 2000). In many countries, young people, particularly young labour market entrants, are the group most vulnerable to the negative effects of increased uncertainty and the employers' demand for lower labour costs and flexibilization (Blossfeld et al. 2009).

European countries have followed different pathways of labour market flexibilization in order to meet employers' demand for lower labour costs. Many countries have promoted fixed-term contracts, which lower labour input adjustment costs by reducing the firing costs. However, many empirical studies revealed disadvantages of these contracts in terms of poor working conditions and worse career options, which applies particularly to labour market entrants (De Vries and Wolbers 2005; McGinnity, Mertens and Gundert 2005; Scherer 2004; Steijn, Need and Gesthuizen 2006).

Furthermore, in some countries, particularly in Southern and Central and Eastern Europe (CEE), informal employment, i.e. working without written and registered employment contracts (Amuedo-Dorantes 2000; OECD 2008; Packard 2007), represents an alternative tool of external flexibility. While some country- and enterprise studies (MacDonald 1994; Pahl 1987; Ram, Edwards and Jones 2007; Telles 1992) provide some interesting insights into the overall size and role of informal employment in the national economy, individual-level empirical evidence on the role of informal employment is relatively scarce, which is mainly related to the lack of individual-level data. This applies particularly to the role of informal employment for labour market entrants (Snyder 2003). However, because youth are one of the most vulnerable labour market groups and because labour market entry is such an important stage of the life-course, with long-lasting effects on later employment opportunities (Shavit and Müller 1998), the research questions about the determinants and consequences of informal jobs for youths are particularly politically significant: Which groups of young people (have to) accept these informal employment positions? Does a labour market start in informal positions damage an entrant's subsequent career chances?

The aim of this paper is to answer these questions by providing empirical evidence on the

role of informal employment in early labour careers of graduates from three CEE countries: Croatia, Poland, and Ukraine. Our contribution to the existing literature should be threefold. First, we look at the overall incidence and the determinants of entry into informal employment. Specifically, we examine the role of individual resources and employers' characteristics in the allocation process of young people to informal jobs and we analyze whether young people in informal jobs are recruited from the group of “unsuccessful jobseekers” (Saavedra and Chong 1999; Telles 1992). Second, we evaluate the subsequent career prospects of informally employed i.e. we look at the early career dynamics of graduates who entered informal jobs after graduation. Looking at the career consequences complements our dynamic perspective that tries to capture a broad picture of the role of informal employment by looking at its allocation patterns, characteristics and consequences. Third, our comparative research design gives us the opportunity to get some insights into the mediating role of the institutional context. We know from previous cross-national research that the specific national institutional setting may mediate individual-level causal relations (DiPrete et al. 1997). Choosing three countries representing three different labour and economic regimes allows us to learn how individual level relationships are attenuated by the national context.

This paper is organised as follows: In section 2, we will elaborate on theoretical background of the role of informal employment. Section 3 briefly describes selected dimensions of institutional and structural setting in Croatia, Poland and Ukraine. After describing our data, variables and methods in chapter 4, we present descriptive evidence and empirical tests of our hypotheses. In the final section of the paper we summarize our findings and draw conclusions.

## **2. Theoretical ideas about micro-level determinants and consequences of informal work**

In general, according to job matching theory, the labour market entry process can be interpreted as the outcome of two-sided allocation decisions as resulting from the interplay of opportunity structures and actor preferences (Granovetter 1981; Sørensen and Kalleberg 1981). Informal employment relationships will form if employers, who faced with uncertainty when hiring a young worker, decide to offer an informal employment position instead of a regular (fixed-term or permanent) contract. Matches will form if young applicants prefer the conditions of the offered informal job against the alternative of

continued searching and (possible) alternative offers of formal jobs. Thus, when studying the role of informal employment at labour market entry both the employers' (i.e. the labour market demand) perspective as well as the perspective of the individual job seeker (i.e. the labour supply) has to be taken into account.

The decision to hire informal workers is associated with certain benefits and (potential) costs for the employer. Employers in the informal sector evade costs imposed by taxes and burdensome regulations (e.g. hiring and firing costs induced by employment protection legislation), but face the disadvantages of working outside the legal system. Given that informal economic activity is partially illegal, not only the risk of paying a fine or being sentenced exists, but also the transaction costs may be higher, especially in capital and financial markets (Loyaza 1994). Engaging in the informal sector makes it more difficult to establish contacts with business partners and get access to capital if these partners sanction this illegal behaviour.

The benefits and potential costs of informal employment and, thus, the choice of informal over formal employment arrangements depend on the employer's production arrangement (Loyaza 1994; Ram, Edwards and Jones 2007). For more competitive and capital intensive firms it is more profitable to remain in formal sector. For more labour intensive and less competitive firms it may give a better pay-off not to register business activity and to employ workers without offering them labour contracts (Pfau-Effinger 2003). In contrast, public employers or employers that provide services for the state should rely on formal employment because they are less profit-oriented and their supervision by state authorities should be stronger. In this respect, informal employment can be used as an alternative for enterprises with low capital resources, for which it is too expensive to start a competition in the 'formal' employment sector (Sassen 1997). Hence, we expect that particularly employers in labour intensive sectors (such as agriculture, construction, retail, hotels/restaurants, personal services) have incentives to employ informal workers, while employers in the public sector and in capital intensive sectors should rely more on formal work (*Hypothesis 1*).

Related to this sector-based distinction one could also argue according to labour market segmentation theory that formal jobs are mainly located in the primary labour market segment, which offers well-paid positions with good working conditions and structured career ladders, while informal jobs are concentrated in the secondary segment entailing short term, low-paid work and providing no career prospects (Doeringer and Piore 1971).

Then, looking at the job seeker's side in the two-sided matching process in the labour market, one could expect that graduates queue for “official” jobs in the primary segment, where minimum employment standards are secured by labour contracts (e.g. Chandra and Khan 1993; Fields 2005; Loyaza 1994; Telles 1992). However, employers offer only these preferred official jobs to the best qualified graduates, i.e. those with the highest human capital, work experience, etc. Furthermore, particularly high-qualified graduates should prefer to profit from their high skills in secure, upward mobile career trajectories (seniority and efficiency wages, social insurance) compared to short-term benefits in informal work (greater income through avoidance of tax and social security payments) with the risk of getting caught. In contrast, graduates with limited individual resources, i.e. less educated, young people from disadvantaged family backgrounds, or “unsuccessful jobseekers” (Schneider and Enste 2000b; Telles 1992) should be most likely to enter informal employment (*Hypothesis 2*).

If informal jobs are concentrated in the secondary labour market segment, in firms with low productivity and limited access to capital, typical mechanisms of improving employment chances (such as career ladders) through gaining experience are not at work. Acquiring skills on the job, peer effects, getting access to social network that finally allows finding a better job, are beyond the reach of workers in the firms operating in the secondary sector. Furthermore, there is hardly any labour mobility between the two segments because of “scarring effects”, i.e. employment in the secondary segment serves as a negative signal that makes it difficult to get access to the privileged segment. The risk of being “trapped” into cycles of informal work should be very high for informal workers. Moreover, they should face higher risks of becoming non-employed (entering unemployment or inactivity) because their appointment are often temporary in nature and skill accumulation is non-existing or low in these jobs. Hence, we expect that graduates who start their working career with an informal contract in general have lower chances to remain in employment and low chances to end up in formal employment sector (*Hypothesis 3*).

There is a different theoretical perspective, which implies lack of negative or even positive consequences for employees who perform work without registered contracts. Involvement in informal sector might serve as a stepping stone in employment career (Jütting, Parlevliet and Xenogiani 2008; Maloney 2004; Packard 2007). According to these arguments, employers decision about choosing informal sector are driven not so much by asymmetry of costs but rather to innovative profile of their activities. However this should be more

relevant for developing societies or industry sectors, where particularly dynamic restructuring processes take place (Maloney 1999; 2004; Rosenzweig 1988) 1988)<sup>1</sup>.

### **3. Institutional arrangements and structural conditions in Croatia, Poland and Ukraine**

It can be expected that the role of informal employment is also mediated by the nation-specific institutional and structural conditions. Regarding the structural conditions, we can observe a surprising homogeneity across many indicators (see Table 1). The basic sectoral distribution is almost identical in all three countries and a more detailed look at the dynamics of sectoral development reveals similar restructuring processes in all three countries with decreasing agricultural and industry shares as well as increasing service sector shares. While the labour force participation rate is also almost identical, we observe different unemployment rates, which are highest in Poland (17.4%) and lowest in Ukraine (7.2%). However, regarding GDP levels, GDP growth and inflation, we observe more severe structural problems in Ukraine.

Labour market situation in Croatia deteriorated sharply in late 1990s after short post-war recovery, as isolation from EU integration processes, coupled with delayed transitional reforms brought a period of GDP stagnation and substantive growth of unemployment – from 9.9% in 1997 to 16.7% in 2000. This has in particular affected youth, since youth unemployment rate is steadily 2.5-2.8 times higher than general unemployment (Matković 2008b), peaking at 41,5% in 2001. Since 2000 GDP steadily grew by 4.3-5.6%, and employment has steadily declined down to 8.4% in 2008. The sectoral composition of employment is characterized by a long term and modest trend of decline in agricultural employment. Industry to services ratio has started increasing as transition began (Matković 2008a). During the last decade, 5 percentage points decline in share of agricultural employment was met by increase of about 5 percentage points in services, while industrial sector remained rather steady after early transitional contraction (Franičević 2008). Compared to prime age working contingent (25-54) youth are overrepresented in trade,

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<sup>1</sup> According to this approach, the exploration of market niches is associated with uncertainty about the future profitability of these new ventures in a rapidly changing environment. This makes firms adapt a strategy that allows to avoid significant sunk costs and increases propensity to opt for informality. The informal marketplace can give entrepreneurs a foothold in the local marketplace that allows them to expand into the formal sector (Snyder 2003). Furthermore, the working experience gained in this sector might turn out useful for finding a better, official job (Lehmann and Pignatti 2007; Rosenfeld 1992).

hotels and restaurants and personal service sectors, while less likely to be found in transport, government, education, health and financial intermediation (Matković 2008b).

In Poland, the situation on the Polish labour market was very difficult at the very end of 90ies when Russian crisis hit the economy, leaving it also more vulnerable to the second slowdown which occurred in 2001-2002. Surging aggregate unemployment made transition from school to work of young people very difficult (Bukowski et al. 2005). After 2004 the macroeconomic situation improved considerably and the unemployment started to drop, but it was still at the relatively high level of 17.7% in 2006. The period of slowdown in 1999-2002 decreased inter-sectoral mobility of workers. In particular, instead of moving from agriculture into industry and services, agricultural workers tended to remain in this low productive and labour intensive sector.

Ukraine was still in a prolonged transition recession in the nineties, which was deepened due to the fact that reforms were inconsistent and incoherent (Lehmann and Pignatti 2007). After the period of prolonged stagnation, the beginning of the period 1998 to 2004 saw the start of rigorous reforms and a robust economic growth. The employment structure of the Ukrainian economy experienced substantial shift. Agricultural and industry employment contracted and the same time, the share of services grew vigorously, leading to an overall share of about 56.4% percent in 2005.

*Table 1: Structural conditions in Croatia, Poland and Ukraine in 2005*

	Croatia	Poland	Ukraine
Employment in agriculture (% of total employment)	17.3	17.4	19.4
Employment in industry (% of total employment)	28.6	29.2	24.2
Employment in services (% of total employment)	54	53.4	56.4
Unemployment <sup>a)</sup> , total (% of total labour force)	12.7	17.7	7.2
Unemployment <sup>a)</sup> , youth total (% of total labour force ages 15-24)	32.5	37.8	14.9
Labour Force Participation rate (% , age 15-64)	64.1	63.9	66.7
GDP per capita. PPP (constant 2000 international \$)	11603	12319	6093
GDP growth (annual %)	4.3	3.4	2.6
Consumer Price Index (% increase between 2000 and 2005)	14	15	47

Source: KILM database (ILO 2009). <sup>a)</sup> Labour force survey, ILO-based measure of unemployment.

We expect also differences in the determinants and career consequences of getting involved

in informal work across countries with different institutional regimes. Schneider and Ernste (2000b) point out that high and complex taxes and social security contributions, strict labour markets regulation as well as inefficient state institutions and low quality of public services foster informal activities. Our countries of interest, Croatia, Poland, and Ukraine provide an interesting variation across these different institutional dimensions (see Table 2).

*Table 2: Institutional setting in Croatia, Poland and Ukraine*

	Croatia	Poland	Ukraine
<i>Taxes</i>			
Total tax rate on profits in 2005 (in %) <sup>a)</sup>	32.5	38.1	59.5
Social security contributions as % of gross wage in 2003 (Ukr: 2001) <sup>b)</sup>	37.2 <sup>d)</sup>	38.1 <sup>d)</sup>	40.0 <sup>e)</sup>
<i>Employment protection legislation</i>			
EPL index <sup>c)</sup>	2.7	2.2	2.1
regular contracts <sup>c)</sup>	2.7	2.0	3.3
temporary contracts <sup>c)</sup>	2.8	2.0	1.8
collective dismissal <sup>c)</sup>	2.5	3.3	0.0
<i>Policy quality and law enforcement</i>			
Government effectiveness in 2006 (% Rank) <sup>d)</sup>	70.14	71.09	38.39
Regulatory Quality in 2006 (% Rank) <sup>d)</sup>	62.93	70.24	34.15
Rule of Law in 2006 (% Rank) <sup>d)</sup>	52.86	59.05	24.76
Transparency International Corruption Perception Index in 2008	4.4	4.6	2.5

Source: <sup>a)</sup> World Bank Development Indicators database; <sup>b)</sup> IMF country economist desks, World Bank database. <sup>c)</sup> Eamets and Masso (2005); <sup>d)</sup> Worldwide Governance Indicators, World Bank Informal Labour Markets in Transitional Economies report.

#### *Tax and social security contributions*

Specifically, the higher and more complex taxes are, the greater should be the incentive to establish informal working arrangements. In this respect, sociological and psychological studies show that individuals choose to work underground particular in countries, whose tax system is perceived as unfair (Elster 1998; Frey 1997; Lewin 1996; Rabin 1998).

Croatia, Poland and Ukraine differ in terms of taxes imposed on businesses. According to



data in World Bank Development Indicators database, in 2005 the total tax rate on profits amounted to 32.5% for Croatia, 38.1% for Poland and 59.5% for Ukraine. Hence, Ukraine has a system that encourages entrepreneurs to switch into shadow economy most. Social security contributions are moderately high in all the countries, but highest in Ukraine. Ukraine implemented a radical tax reform in 2004 and substituted its progressive tax system by a flat income tax of 15%. In Poland, the personal income tax schedule is quite complex. There are three thresholds: up to the first threshold taxpayers contribute 19 % of the earnings, less a basic tax credit of PLN 530.08; for income above second threshold a 30% rate applies and a surplus of income over the third threshold is taxed at 40% rate. In practice, vast majority of taxpayers declares income that does not exceed the first threshold. Croatia has progressive tax rate and non-taxable base of about 250€, giving little incentive for informal employment as form of income tax evasion for lowly paid jobs.

#### *Labour market regulation*

Overregulation is another factor, besides taxes, that increases labour costs (Gërkhani 2004). The regulations usually are designed to improve workers' welfare and put some constraints on employers decisions related e.g. to dismissal, working time and other aspects of standards of decent work. However, employers may perceive regulations as the state interventions restricting their choices, imposing costly necessity to follow procedures and to bear the risk of paying costs of dismissals. Therefore, they may react by avoiding registering labour contracts (Ram, Edwards and Jones 2007; Schneider and Enste 2000b) (Pelzmann 1988)<sup>2</sup>. Obviously, this is not only the level but also complexity and enforcement of these regulations that affect the behaviour of employers and workers with respect to decisions whether to set up a formal contract or an informal employment relationship (Dabla-Norris, Gradstein and Inchauste 2008; Loyaza 1994; Schneider 2005).

Regarding the labour law regulations, up until 2003 Croatia used to be among the countries with highest level of employment protection strictness in Europe (Rutkowski 2003). Even though some provisions were relaxed with labour core reforms in 2003, it remained one of more restrictive among transitional countries (Matković and Biondić 2003; Tonin 2005). On the contrary, in Poland employment protection legislation is rather moderate – Poland is in the middle of the scale when we compare European societies in terms of strictness of regulations (Baranowska and P. 2007; OECD 2008). Ukraine is a very specific example –

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<sup>2</sup> For an integration of this theory in an rational choice approach see (Johnson, Kaufman and Zoido-Lobaton 1998 ; Johnson et al. 1997; Schneider and Enste 2000a) find empirical evidence that more regulation indeed leads to a larger informal sector.

employment protection legislation indicators as estimated basing on “written” law are high with regard to permanent contracts, but empirical studies show that the level of enforcement is dramatically low (Standing and Zsoldos 2001).

#### *Policy quality and law enforcement*

Low quality of public services and low trust into state institutions generate positive attitudes and habits towards informal work (Böröcz 2000; Schneider and Enste 2000b) In this respect, it is important to stress that norms related to the informality are not an inherent trait of any society, but rather are shaped by the institutional setting (Mishler and Rose 2001). Moreover, in countries where rule of law is lax, while quality and reliability of services conditional on contributions is low, formal employment contract might not bring such advantage to employees in terms of its enforcement, social service or safety net provision – so rationally behaving job seekers might be more inclined to accept (and keep) non contractual work. Then, informal work may become some sort of a “parallel economy”, and involvement in such unofficial economic activity is not perceived as immoral.

In order to get some insights into quality of public services and trust into state institutions, we use indices of quality of governance to compare government effectiveness, regulatory quality, rule of law and corruption in Croatia, Poland and Ukraine (Kaufmann, Kraay and Mastruzzi 2004). While our countries of interest score lower than most Western societies, we find an interesting level of heterogeneity within our country sample. The *Index of Government Effectiveness* focuses on the input that the government needs to implement and deliver efficient policies and public goods. It aims at measuring the quality of public services, the extent of bureaucracy, the quality of the civil service and the degree of its independence from political pressures and the credibility of the government's commitment to such policies. Whereas Ukraine scores very low on this dimension, the values of this indicator and, thus, the effectiveness of government Poland and Croatia are relatively high. The *Index of Regulatory Quality* focuses not on the government inputs but rather on outcomes – i.e. on policies themselves. It allows assessing whether policies are market-friendly and it takes account of citizens' perceptions of burdens imposed by excessive regulation in areas such as business development. The highest value of this index is recorded in Poland, while the quality of regulations imposed by the state is much lower in Croatia. The quality of regulations is extremely low in Ukraine, i.e. the ability of the Ukrainian government to formulate and implement sound policies and regulations that permit and promote private sector development is quite limited. Regarding the

*Rule of Law Index* as a measure of the quality of contract enforcement, the police, and the courts, Poland scores against highest on this dimension, but the position of Croatia in the country ranking is not much worse, while Ukraine ranks far below. Finally, the *Corruption Perception Index* of Transparency International (2009) reveals that while corruption seems to be a problem in all our countries, in Poland and Croatia is being rated as moderately high and in Ukraine as very high.

### *Research Hypotheses*

In sum, from a theoretical perspective, high taxes, strict employment protection regulations low policy quality and weak law enforcement increase the potential benefits of informal work, reduce the potential benefits of formal work and reduce the risk of getting caught when acting in the informal sector. Then, the incidence of informal jobs should be very high and also more equally spread across all firms and sectors as well as individuals with different resources, i.e. both low and high educated should have a similar probability of working in the informal sector. This should apply particularly to the Ukrainian case because Ukraine is in such a 'bad equilibrium' of high taxes and social contributions for employers, rather strict employment protection for regular workers and, particularly, low policy quality as well as very weak law enforcement combined with a high incidence of bribery and corruption is high.<sup>3</sup> In contrast, the policy and governance quality is much higher and the corruption is much in lower in Poland, which does not give incentives for firms to involve in shadow economy and increase their risk of being caught by the law authorities. While employment protection regulations are very strict in Croatia, the governance quality and corruption level does not diverge much from the Polish level, providing mixed incentives for employment in informal sector. Hence, we expect that the overall incidence of informal work is highest and more equally spread among all groups of recent school leavers in Ukraine followed by Croatia and Poland (*Hypothesis 4*).

Furthermore, the segmentation between formal and informal jobs should be less pronounced in countries such as Ukraine, where high taxes, strict yet poorly enforced employment protection regulations low policy quality and weak law enforcement push many people into the informal sector. Then, involvement in such unofficial economic activity is not perceived as immoral and does not produce negative signals and, hence, does not impede further

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<sup>3</sup> Although the personal income tax reform in 2004 reduced the incentives for informal work, it is questionable, whether this single reform is strong enough to counterbalance the unfavourable set of other institutional characteristics. Furthermore, the full impact of the 2004 reform will probably be not yet visible in our observation period from 2001 to 2006.

career chances for young people so strongly in Ukraine. Even though it might be still difficult to enter a formal job due to their overall scarcity, a large informal sector should guarantee at least continued employment in this informal sector, which forms a sort of a “parallel economy”. In contrast, in Poland and to a lesser extent in Croatia, entrepreneurs may avoid complying with regulations but it is not perceived as fair or safe in the society. Then, scarring effects of involvement in informal work may be relatively strong and upward mobility into official jobs is difficult. It might be even difficult to continue the informal job or to find another informal job because the informal sector is too small to create a “parallel economy”. Thus, in Ukraine, we expect less disadvantaged subsequent formal employment as well as overall employment chances for graduates who started in an informal job compared to similar graduates with formal first jobs than in Croatia and especially in Poland (*Hypothesis 5*).

#### **4. Data, variables and methods**

##### *Data*

Analyzing the determinants and career consequences of informal work at labour market entry in a country comparison requires comparable, longitudinal individual level data of high quality and reasonable sample size, which include also micro-level measures of informal work. Fortunately, we have been able to acquire access to such highly demanding data sources in our countries of interest. Our analyses are based on retrospective micro-data data from comparable, high-quality, large-scaled Croatian, Polish, and Ukrainian school-leaver surveys, which are representative for each country and cover an almost identical time period. All the surveys draw draws on the ETF school leaver surveys design as well as LFS Ad-hoc module 2000 "Transitions from education to work". Additionally, we have invested a lot of time and effort into the harmonization of definitions of concepts and variables used in order to maximize the degree of comparability.

The Croatian data used in this study originate from the "Survey on educational and employment careers of the Croatian youth", a joint effort of the Ministry of Health and Social Welfare, the United Nations Development Programme Croatia and Faculty of Law, University of Zagreb based upon priorities established by the Croatian Joint Inclusion Memorandum. The survey targeted population which left continuous education between 2003 and 2008 and is currently within the age band 15-35. The fieldwork took place between September and November 2008 and collected valid data from 2429 respondents.

For Poland we use data from the Polish School Leavers Survey conducted within the European Social Fund project of the Ministry of Social Policy and Labour in 2006. The survey was carried out with a representative sample of 20251 graduates who completed schooling between 1998 and 2005.

For Ukraine, we use data from the "Youth Transition Survey in Ukraine," which was carried out by the Kiev International Institute of Sociology and funded by the European Training Foundation (ETF). The sample developed for the survey is representative for the population of Ukraine aged 15-34 years who left continuous education within years 2001-2006 and for the target population of up to five large regions of Ukraine.<sup>4</sup> Overall, 2,039 interviews were conducted in the period from March until May 2007.

### *Variables*

Our central variable of interest is a binary indicator of the legal status of the first job distinguishing between informal work, i.e. work without a written employment contract, and formal work. Formal work subsumes permanent and fixed-term contracts. The first job is defined as any type of first employment after leaving or interrupting education for the first time for one year or more within the period of investigation.<sup>5</sup> This binary indicator of informal employment serves as the dependent variable when we analyze the determinants of informal work and it acts as the central independent – so called "treatment" – variable when we analyze the early career consequences of starting in such an informal job. Career outcomes are defined as the probability of being employed at all in contrast to non-employment (including unemployment or inactivity) as well as the probability of having an official contract. These career outcomes are evaluated at different time points in the early career: 6, 12, and 18 months after having entered the first job.

We include a rich set of control variables into our study. The individual education level is defined on the basis of the highest school and vocational degree obtained when leaving education for the first time. We use a harmonized measure in all countries distinguishing between lower secondary or less, lower secondary vocational, professional secondary/professional tertiary, and academic tertiary education. In Croatia and Ukraine, individuals who dropped out from a particular education level are assigned to the level they dropped out from and marked with the dummy variable 'drop out.' To account for the

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<sup>4</sup> The contaminated Chernobyl territories were excluded from the survey. Individuals permanently institutionalized in medical facilities, military quarters, and prisons were also not included.

<sup>5</sup> Educational interruptions caused by maternity leave, taking a gap/sabbatical period, serious illness, or awaiting a certificate giving access to education at a higher level, or military service were not counted.

horizontal differentiation of the tertiary education system, we take the field of education into account. We group the fields of education into three broad categories: technical fields (including engineering, exact and natural, manufacturing and computing), social sciences (including business and law), and other fields (including services, health, humanities, education and arts). The relative performance level of a respondent within her education level is measured as the individual GPA position in the GPA distribution of the respective education level. Specifically, we distinguish positions in the first quartile, second/third quartile, and fourth quartile.

To account for labour market experience during school, we have information whether the school leaver received any training periods in companies and whether s/he was working while in school. Job search duration is included as a proxy for "unsuccessful job seekers". As standard demographic control variable gender is included while another dummy variable captures general differences in the urban-rural divide, which are expected to be strong in CEE countries. Participation in firm-based training is measured separately at the (lower/upper) secondary vocational and tertiary level.

A set of social origins information is used to capture differences in resources as well as a proxy for cognitive and non-cognitive skills. In specific, we distinguish between highest parental educational and the parental labour market status. As employer characteristics, we differentiate between four categories of firm size, and industries are differentiated in eight broad categories derived from the NACE classification. Furthermore, we distinguish the ownership structure in terms of public, private and public-private-partnership arrangements.

### *Methods*

We use logit models for examination of determinants of entry into informal employment at the onset of individual labour market career. The consequences of entry into informal work compared to formal employment at the onset of labour market career are then assessed using propensity score matching techniques. With this technique at hand, we control in the most flexible way for observed individual and firm characteristics that might induce a seeming relationship between informal employment and subsequent career chances. Specifically, this method compares informally employed labour market entrants with otherwise equal officially employed labour market entrants. Thus, this innovative approach forms "statistical twins" in order to account for self-selection mechanisms (Morgan and Harding 2006; Morgan and Winship 2007). Statistical similarity is measured using the propensity

score, i.e. the probability of entering an informal job conditional on the control variables. Like regression analysis, the matching approach relies on the conditional independence assumption, which postulates that, conditional on a set of observable control variables, all outcome-relevant differences between informal and formal employed graduates who form the statistical twin group are balanced.

However, we employ matching because it has several advantages compared to conventional regression analysis. Compared to conventional regression analysis, the flexible non-parametric technique outcome estimation avoids misspecification errors and guarantees a more appropriate weighting of covariates (Morgan and Harding 2006; Morgan and Winship 2007). Furthermore, linear regressions would extrapolate into the region of no common support, yielding potential bias, which is avoided with matching. Finally, an additional common support condition in matching, requiring the propensity score not to be equal 1, guarantees that only persons with suitable control cases are considered.

## 5. Empirical results

### 5.1. Determinants of informal employment at labour market entry

Before starting with the multivariate analysis of determinants of informal employment, we first have a look at the overall incidence of informal employment at labour market entry in our country sample. Table 3 reveals clear patterns of heterogeneity between the countries. Ukraine clearly stands out with an informal sector share of 26.7%. The share is much lower in Croatia (13%) and particularly in Poland with 7.3%. This pattern coincides with our theoretical expectation, hypothesis 4, on the country-level incidence of informal work: Obviously, the 'bad equilibrium' in Ukraine of high taxes, low quality of public services, combined with weak law enforcement and high incidence of corruption, let employer use informal work arrangements for many labour market entrants and make labour market entrants more willing to accept those offers.

*Table 3: Incidence of informal and fixed-term contracts at labour market entry*

	Croatia	Poland	Ukraine
Informal sector share in first job (among all first jobs)	13.0%	7.3%	26.7%
Fixed-term contract (including seasonal work) share in first job (among all first jobs, i.e. also including informal work)	49.0%	58.6%	11.1%

Sources: Croatian SLS 2003-2008, Polish SLS 1998-2005, and Ukrainian SLS 2001-2006.

Interestingly, the incidence of temporary contracts reveals the opposite image. While Ukrainian graduates find themselves less often in fixed-term contracts, this flexibilization strategy is particularly used for Polish but also for Croatian school leavers. It is relatively highest in Poland, which mirrors the overall high share of fixed-term contract holders in the workforce, which is second highest in Europe (after Spain). Thus, Polish graduates have higher risk of landing in temporary jobs at the beginning of their career, closely trailed by Croatia despite both having higher temporary employment EPL than Ukraine. In sum, we can observe country-specific pathways of flexibilization. While Croatia and Poland are characterized by high shares of temporary contracts among graduates, Ukrainian graduates very often have to start without any written formal employment contract. Nevertheless, in all our analyzed countries, informal employment constitutes a non-negligible share of employment arrangements among school leavers. This calls for a detailed inspection of the determinants and career consequences of these informal jobs, which are located in the illicit part of the economy.

*Table 4: Results for estimation of propensity to enter informal employment*

	Croatia (logit)		Poland (logit)		Ukraine (logit)	
	b	t	b	t	b	t
<i>Highest education (ref. general secondary)</i>						
lower secondary general or less	1.13	(1.06)	-0.15	(-1.22)	0.46	(1.25)
lower secondary vocational	n/a	n/a	-0.39 ***	(-3.31)	0.42	(0.58)
vocational secondary	0.99	(1.44)	-0.47 **	(-2.63)	-0.23	(-0.64)
professional secondary	1.10	(1.64)	-1.06 ***	(-4.62)	-0.82**	(-2.02)
professional tertiary	0.15	(0.20)	-1.28 ***	(-5.90)	-0.12	(-0.26)
academic tertiary	-0.54	(-0.73)	-0.15	(-1.22)	-1.11***	(-2.65)
<i>dropout</i>	1.18***	(4.67)	-	-	0.55	(1.45)
<i>firm-based training</i>	-0.17	(-0.73)	-0.05	(-0.49)	-0.01	(-0.04)
<i>(only lower and upper secondary vocational)</i>						
<i>GPA (ref. 1st quartile relative)</i>						
2nd/3rd quartile relative	-0.10	(-0.48)	-0.44 ***	(-4.36)	-0.31	(-1.26)
4th quartile relative	-0.22	(-0.88)	-0.46 ***	(-4.24)	-0.17	(-0.67)
<i>firm-based training</i>	0.13	(0.36)	0.08	(0.39)	0.31	(0.88)
<i>(only tertiary)</i>						
<i>Field of study (ref. engineering)</i>						
<i>(only tertiary)</i>						
business, law and social sciences	-0.05	(-0.16)	0.51 *	(2.31)	-1.19***	(-2.94)
other fields	0.04	(0.10)	-0.11	(-0.41)	0.25	(0.66)
<i>Job search duration</i>						
search duration	-0.04**	(-1.96)	0.06 ***	(3.49)	0.03	(1.37)
(search duration) <sup>2</sup>	0.0004	(1.31)	-0.00 ***	(-3.33)	-0.00	(-0.43)
<i>Working while in school</i>	0.35**	(2.01)	0.49 ***	(4.45)	0.40*	(1.79)



<i>Firm size (ref. 1-9)</i>						
10-49	-0.80***	(-3.94)	-0.70 ***	(-7.91)	-0.45**	(-2.09)
50-499 (Pl: 50-249)	-1.49***	(-5.18)	-1.62 ***	(-9.14)	-0.81***	(-2.93)
499+ (Pl: 250+)	-2.00***	(-3.74)	-2.11 ***	(-6.08)	-2.11***	(-4.66)
<i>Firm ownership (ref. Private)</i>						
Firm ownership not reported	-0.37	(-1.49)	-	-	-	-
Public firm	-0.48	(-1.35)	-1.82 ***	(-8.39)	-2.21***	(-6.95)
Public-private partnership	n/a	n/a	-1.21 ***	(-3.30)	-1.60***	(-4.09)
<i>Industry (ref. manufacturing)</i>						
Agriculture	1.00*	(1.84)	1.87 ***	(9.76)	-0.40	(-1.02)
Construction	0.43	(1.32)	1.42 ***	(9.98)	0.94***	(2.83)
Trade, hotel/restaurants	0.23	(0.88)	-0.12	(-0.93)	-0.02	(-0.06)
Transport/communication	0.16	(0.30)	-0.31	(-1.05)	-0.45	(-0.84)
Finance/real estate/renting	0.27	(0.74)	-0.20	(-0.94)	-0.29	(-0.52)
Administration/education/health	-0.96*	(-1.70)	0.17	(0.79)	-0.91*	(-1.90)
Other services (UA: + unknown)	-0.01	(-0.04)	0.69 ***	(5.01)	-0.22	(-0.53)
<i>Parents' highest education (Ref. Lower secondary general)</i>						
Lower secondary vocational	-0.41	(-1.53)	-0.47 **	(-3.26)	0.14	(0.35)
Upper secondary gen + voc	-0.17	(-0.66)	-0.55 ***	(-3.67)	0.33	(0.91)
professional secondary			-0.36	(-1.61)	0.69*	(1.93)
tertiary education	0.04	(0.11)	-0.13	(-0.70)	0.26	(0.72)
<i>Parents' work arrangement (Ref. others)</i>						
Only father worked	-0.44**	(-2.02)	-0.38 **	(-2.60)	-0.22	(-0.79)
Both parents worked	-0.32	(-1.56)	-0.40 **	(-3.11)	-0.36*	(-1.78)
<i>Demographics</i>						
female	0.24	(1.38)	-0.26 **	(-3.00)	-0.02	(-0.09)
urban	0.22	(1.31)	0.12	(1.50)	0.06	(0.29)
constant	-1.67**	(-2.22)	-1.13	(-4.06)	0.39	(0.70)
r2	0.142		0.174		0.349	
N	1614		12253		1128	

Sources: Croatian SLS 2003-2008, Polish SLS 1998-2005, and Ukrainian SLS 2001-2006. Control variables not displayed: year left education in all countries; NUTS2-dummies for place of residence in Poland.

Looking at the determinants of propensity to enter informal employment, in Poland these are the least educated graduates, i.e. those with lower secondary education or less, but also those with upper secondary general education who are most likely to enter informal jobs. The latter group is precisely the category of graduates, who according to empirical studies conducted so far, are most likely to enter long-term unemployment (Baranowska 2009). A similar pattern can be observed in Ukraine, where least educated have the highest propensity to get non-contractual work. However, in contrast to Poland, all groups of Ukrainian secondary educated young people as well as those with professional tertiary education have a higher informal employment probability compared to those with professional secondary or academic tertiary education. In Croatia, the high school dropouts and those with vocational and technical secondary education have greater propensity to enter informal work in comparison to university graduates. In general, the risk of informal work seems to be lower

for higher educated graduates, which supports hypothesis 2. Furthermore, the skill-related line of differentiation in formal and informal jobs runs at a lower level and is most pronounced in Poland, which supports our hypothesis 4.

Furthermore, supporting hypothesis 2, in all countries these are graduates with rather poor marks who enter informal jobs, but, in line with hypothesis 4, this effect is only significant and also strongest in Poland, while in Ukraine and Croatia association level is weaker and does not reach significance level. Regarding the influences of educational characteristic, neither firm-based training at the secondary nor at the tertiary level helps to prevent young people from informal work. In all countries working during the education contributes to chances to enter informal employment sector. Regarding the association between job search duration and contract type of employment we find interesting country differences. While in Croatia the informal job is often the first-stop job, found soon after leaving education, in Poland these are graduates, who searched for a job for over one year, that have highest propensity to enter grey economy. Thus, irregular jobs seem to be a last resort for workers that cannot find a formal job. In contrast, duration of the first job search does not significantly affect the propensity to enter informal employment in Ukraine, i.e. entry patterns seem to be similar between formal and informal jobs in Ukraine.

Regarding the workplace variables, in line with most empirical studies, in all countries there is a clear pattern of distribution of informally working graduates across firms with different size: youth who start their working careers in small companies are most likely to work without registered contract. This is in line with our hypothesis 1 because small companies are often not as capital-intensive as large firms and rely more on labour inputs. Furthermore, in line with our hypothesis 1, we find that public firms or firms with partial public ownership do engage less often in informal work compared to private companies. We also find some industry differences, even after controlling for firm size and ownership structure. In most of our countries, the probability of starting with an informal job is higher in the traditionally contingent and more labour-intensive agriculture as well as the construction sector. The other expected industry differences seems to be mediated by the firm size and ownership effects. Furthermore, in Poland employment in the labour intensive personal and household services is more likely to be informal.

Regarding the family background and demographic control variables, we find direct effects for family background even after taking the mediating effect of education into account. In all three countries, youth from families where father was not employed had greater risks of

entering informal employment. In Poland and Croatia, graduates from families with least and most educated parents, who have highest propensity to start careers in informal jobs, while children of parents with intermediate, vocational education are less likely to do so.

To sum up, we have common findings for all our countries that confirm our general micro-level hypotheses 1 and 2. We find that the risk of informal work seems to be higher for those with lower resources: low educated, graduates with bad school marks, and graduates from disadvantaged family backgrounds most likely enter informal employment. However, entry patterns differ between countries in the sense that informal work seems to be only in Poland a last resort for people having problems to find job (i.e. those with long search durations). We find that informal jobs are concentrated in small companies and private companies as well as the traditionally contingent and more labour-intensive agricultural and construction sectors. Furthermore, we find support for our country level hypothesis 4 in form of a higher overall incidence of informal jobs in Ukraine compared to Croatia and Poland. Moreover, the effects of individual-level resources such as education, marks, and parental background are most pronounced in Poland, which supports the second part of our hypothesis 4, which expects a stronger degree of negative selection into informal jobs in Poland.

## **5.2. Career consequences of informal employment at labour market entry**

After having analysed the determinants of entering an informal job at labour market entry, we will examine in the next step the consequences of a start in informal employment for the medium-run employment career. Specifically, we investigate the overall employment chances and chances to have an official job 6, 12, and 18 months after having entered an informal job compared to the situation of having entered a job in the formal economy. We investigate these effects using propensity score matching techniques. Our matching algorithm will form suitable comparisons based on the propensity scores estimated in the logit analysis of informal job determinants, which was presented in the previous subsection. Detailed tests reveal that our matching algorithms have been able to balance the covariates in an appropriate way<sup>6</sup>, i.e. we compare very similar individuals in terms of these observed characteristics who differ only whether they have a contractual or non-contractual, informal job.

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<sup>6</sup> For example, the mean standardized bias decreased from X to X in Ukraine, from 16.46 to 6.00 in Croatia and from 14.3 to 2.5 in Poland. More detailed test results are available on request.

Interestingly, we find only in Croatia and Poland lower subsequent employment chances for those who started in irregular work compared to starting in a formal job. For example, after 6 months, graduates who entered an informal job have 15.6% lower employment chances in Croatia and 11% lower employment chances in Poland compared to otherwise similar graduates who started in a formal job. While the negative employment effects persists in Poland also after 12 and 18 months, we observe some "catching up" over the time in Croatia, so 12 or 18 month after entering the first job, some convergence of outcomes can be spotted between respondents who started careers in informal and formal jobs.<sup>7</sup> In contrast, in Ukraine, employment chances for graduates starting in the informal sector are not significantly lower compared to their counterpart in the formal sector after taking other observed differences such as individual resources and employers' characteristics into account.

*Table 5: Career consequences of having entered an informal job, ATT (matching results)*

	months after employment start	Croatia	Poland	Ukraine
ATT for chances of being in employment (s.e. in parentheses)	6	-0.156 (0.041)	-0.11 (0.02)	-0.057 (0.035)
	12	-0.098 (0.040)	-0.09 (0.02)	-0.029 (0.045)
	18	-0.089 (0.046)	-0.11 (0.02)	-0.008 (0.048)
ATT for chances of being in <i>formal</i> employment (s.e. in parentheses)	6	-0.490 (0.038)	-0.82 (0.01)	-0.680 (0.033)
	12	-0.367 (0.044)	-0.71 (0.02)	-0.537 (0.044)
	18	-0.266 (0.049)	-0.62 (0.02)	-0.432 (0.048)

Sources: Croatian SLS 2003-2008, Polish SLS 1998-2005, and Ukrainian SLS 2001-2006. Gaussian Kernel matching has been used for Ukraine, Epanechnikov Kernel matching has been used for Croatia, and nearest neighbour matching has been used for Poland.

<sup>7</sup> Nevertheless, at the end of observation window, employment chances remain significantly lower for Croatian graduates with informal first jobs.

These results with respect to the overall employment chances support our hypothesis 5, which expects that Ukrainian graduates who started in an informal job have less disadvantaged employment chances compared to similar graduates with formal first jobs than Croatian and especially Polish graduates with informal entry jobs experience in comparison to their formally employed counterparts. Obviously, the segmentation between formal and informal jobs is less pronounced in countries such as Ukraine, where high taxes, strict employment protection regulations low policy quality and weak law enforcement push many people into the informal sector. Ukrainian informally employed graduates seem to be able to secure their informal job or find other informal or formal job in a similar way as their counterparts who started in formal jobs. However, the question arises whether this overall equal employment chances are also associated with equal chances of having a formal job in Ukraine.

The second part of table 5 reveals that this is not the case. While the chances of having a formal job are significantly lower in Croatia and particularly in Poland, this applies also to Ukraine. However, initial disadvantages, for example after 6 months, should not be overstressed because these are typical "lock-in" effects: graduates who started with a formal job are already in these advantaged positions and it takes time until they lose this initial advantage or graduates who started in informal employment get access to formal jobs. However, the persistence of this initial disadvantage over time and potential catching-up processes provide first answers to the question whether initially informally employed labour market entrants get more equal access to the formal employment segment. Regarding these catching-up processes, we can observe that after 18 months the disadvantage is still extraordinarily high in Poland, but also high in Ukraine and less bad in Croatia. These country differences mainly confirm the previous support of hypothesis 5. The penalty related to such "precarious start" is strongest for Poland. In Poland, there is little incentive for worker to participate in unregulated sector, whereas for employer it is rather easy (and not too expensive) to hire and/or fire person from the formal sector. The Polish informal sector does not provide an "accepted" parallel economy with similar employment chances and chances of getting access to formal jobs. Obviously, starting the labour market career in Poland with an informal job put young people into a disadvantaged secondary labour market segment with repeated cycles of non-employment or precarious informal jobs as well as very low chances of entering formal jobs in the better labour market segments.

While in Ukraine the informal sector seems to provide a "parallel economy" of rather secure

(or repeated) informal jobs without higher risks of ending up in even more precarious non-employment, upward mobility into formal jobs are also low in Ukraine. On the one hand, this could be interpreted as a strong line of segmentation that exists between the formal and the informal sector in Ukraine, although without making the informal segment precarious in terms of higher non-employment risks. On the other hand, this result might be also related to the low incentives for young workers to take up any formal jobs. The "parallel informal economy" might give them enough employment security and social acceptance such that they do not see enough advantages to apply for formal jobs.

The empirical results seem to be more puzzling for Croatia because they do not fully fit into our theoretical expectations. While we find in line with our hypothesis 5 higher subsequent non-employment risks for Croatian graduates who entered an informal first job, their catching-up process in terms of chances of entering formal jobs is most pronounced compared to Ukraine and Poland. Obviously, there are quite divergent pathways of Croatian graduates with informal first jobs: One pathway brings many of them into non-employment and another pathway integrates many of them into formal employment. Thus, the probability of staying in informal employment is lowest in Croatia, i.e. in line with our expectation there is not a stable "parallel informal economy". However, in contrast to Poland where we also did not find evidence for a "parallel informal economy", there are better and more ways from informal to formal employment in Croatia.<sup>8</sup>

## **6. Conclusions**

The aim of this paper has been to provide empirical evidence on the determinants and early career consequences of informal employment in early labour careers of graduates in Croatia, Poland, and Ukraine. In a first descriptive analysis, we have shown that the three countries followed different pathways of flexibilization. While Croatia and Poland are characterized by high shares of temporary contracts among graduates, Ukrainian graduates very often have to start without any written formal employment contract. We have related this pattern to the 'disadvantaged institutional equilibrium' in Ukraine with high taxes, low policy quality and weak law enforcement increase the potential benefits of informal work, which

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<sup>8</sup> Such transitory nature of flexible employment in Croatia is as well visible in the temporary work sector. Labour force survey data reveal that the incidence fixed term contacts among dependent employees amounts to over 25%, in Poland, whereas it is only 11-13 percent among the Croatian workforce (albeit slowly growing). But shares of temporary work reported among school leavers (table 3) are fourfold the national average in Croatia, and only two times as high in Poland. It seems that in order to reach the "adult" labour market in an economy where many positions are closed and recruitment regulated, Croatian youth often has to run a triage of temporary or informal jobs, which act as a springboard towards permanent (or formal) employment.

reduce the potential benefits of formal work and reduce the risk of getting caught when acting in the informal sector.

Regarding our empirical analysis of the determinants of starting the working career in the informal sector, we have common findings for all our countries. First, we find that informal jobs are concentrated in small companies and private companies as well as the traditionally contingent and more labour-intensive agricultural and construction sectors. Second, the risk of informal work seems to be higher for those with lower resources: low educated, graduates with bad school marks, and graduates from disadvantaged family backgrounds most likely enter informal employment. However, entry patterns differ between countries in the sense that informal work seems to be only in Poland a last resort for people having problems to find job (i.e. those with long search durations). Third, the skill-related line of differentiation in formal and informal jobs runs at a lower level and is most pronounced in Poland as well as school marks effects are stronger in Poland, which supports the idea that informal jobs are less equally spread in Poland, where the incentives to use non-contractual work are relatively lowest.

The results of the analyses of the early career consequences of informal first jobs show that in Ukraine employment chances for graduates starting in the informal sector are not significantly lower compared to their counterpart in the formal sector, while we find significantly lower chances in Croatia and Poland. While the chances of having a formal job are significantly lower in Croatia and particularly in Poland, this applies also to Ukraine. Thus, in Ukraine, the informal sector seems to provide a "parallel economy" of rather secure (or repeated) informal jobs without higher risks of ending up in even more precarious non-employment, upward mobility into formal jobs are also low in Ukraine. The penalty related to such precarious starts in informal jobs is strongest for Poland. Thus, the Polish informal sector does not provide an "accepted" parallel economy with similar employment chances and chances of getting access to formal jobs. Obviously, starting the labour market career in Poland with an informal job put young people into a disadvantaged secondary labour market segment with repeated cycles of non-employment or precarious informal jobs as well as very low chances of entering formal jobs in the better labour market segments. In contrast, in Croatia, higher subsequent non-employment risks are high but also the catching-up process in terms of chances of entering formal jobs is most pronounced for Croatian graduates who entered an informal first job. Obviously, there are quite divergent pathways of Croatian graduates with informal first jobs: One pathway brings many of them into non-

employment and another pathway integrates many of them into formal employment. Thus, the probability of staying in informal employment is lowest in Croatia, i.e. in line with our expectation there is not a stable "parallel informal economy". However, in contrast to Poland where we also did not find evidence for a "parallel informal economy", there are better and more ways from informal to formal employment in Croatia.

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