

**DECLARING WORK OR STAYING UNDERGROUND:
INFORMAL EMPLOYMENT IN SEVEN OECD COUNTRIES**

FURTHER MATERIAL

This document contains Annex 2.A3 to Chapter 2, “Declaring Work or Staying Underground: Informal Employment in Seven OECD Countries”, of the 2008 edition of the OECD Employment Outlook. The complete versions of Employment Outlook are available online, on free access, one year after their publication on: www.oecd.org/employment/outlook.

ANNEX 2.A3

EXTENT AND CHARACTERISTICS OF INFORMAL EMPLOYMENT

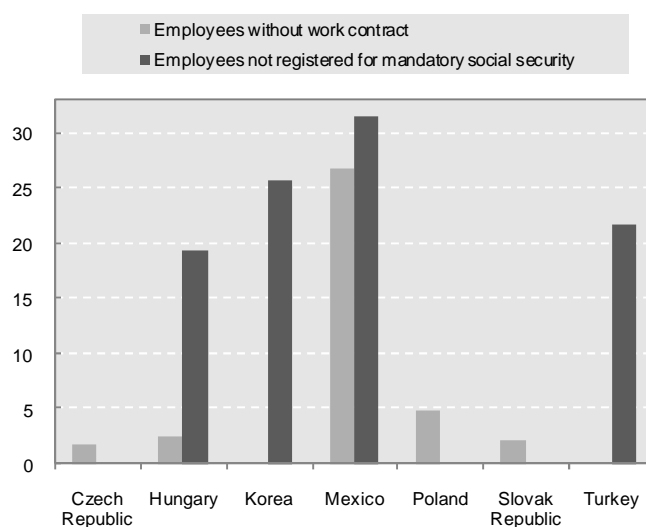
Employees in informal jobs

The first type of informal employment examined concerns employees who are employed without some or all of the normal legal requirements associated with being an employee. These could include an employment contract, paying tax or social contributions, earning the minimum wage or entitlement to redundancy payments in the event of employment termination. While easy to define, measuring the number of employees in informal jobs is hindered by a lack of data on a full range of employee entitlements. The estimates in this section will use one of two definitions: (i) employees without written employment contracts (for the Czech Republic, Hungary, Mexico Poland and the Slovak Republic, where a written employment contract is a legal requirement under the Labour Code for almost all employees¹); and (ii) employees not registered for mandatory social security (National Pension Insurance in Hungary; National Pension Scheme in Korea; IMSS or the equivalent public sector scheme in Mexico; and any social security institution in Turkey).

Figure 2.A3.1 shows that employees in informal jobs comprise 20%-30% of non-farm employment in Korea, Mexico and Turkey, but are far less common in the Czech Republic, Poland and the Slovak Republic, where 2-5% of employees do not have a written contract.² In Hungary, the picture is more complicated. Very few employees work without a written contract (estimates in Figure 2.A3.1 on employees without written contracts are confirmed by Stănculescu, 2005), but 19% of employees are not registered for social security according to estimates made using careful comparisons of administrative and labour force survey data.³

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- 1 . In the Czech Republic, if the employment is for a period of less than one month, a written contract is only required if requested by the employee (Section 32(1) of the Labor Code). In Mexico, a written contract is compulsory unless the employee is covered by a collective agreement.
 - 2 . The estimates for the Czech Republic, Poland and the Slovak Republic are broadly consistent with other research on employees without employment contracts in these countries (e.g. Polish Labour Force Survey, 2005; Stănculescu, 2005 for Czech Republic) and to alternative estimates of the incidence of informal jobs based on social security administrative data. The ratio of active pension contributors to total employment is 94% in the Czech Republic, 97% in the Slovak Republic and 104% in Poland. The fact that there are more pension contributors than employed persons in Poland highlights some of the problems with comparing administrative and survey data to measure informality. Administrative data on active pension contributors refer to all persons who contributed or accrued pension rights during a full year, whereas data on employed persons are from the Labour Force Survey and refer to average employment over the year. If someone is employed and contributing for only part of the year, they would be counted in full as an active contributor, but only partly as an employed person.
 - 3 . Rather than simply comparing administrative data on pension coverage with labour force survey data on employment, Elek, Scharle and Szabó (2008) and Kölló (2007) convert flow data on pension contributions into a stock of pension contributors for each year and compare with employment stock data from the labour force survey. Elek, Scharle and Szabó (2008) estimate that 19.4% of all employees (including the farm sector) are not registered for the pension. Using more aggregated data and a smaller sample, Kölló (2007)

Figure 2.A3.1. Employees in informal jobs as percentage of non-farm employment^a



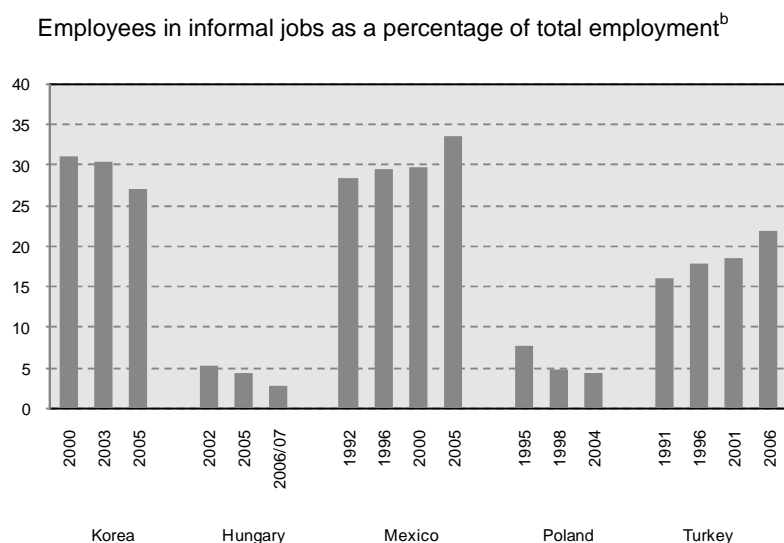
a) Data for Hungary for employees not registered for mandatory social security are as a percentage of total employment, not as a percentage of non-farm employment. Only 4.8% of employment in Hungary is in the farm sector.

Source: Employees without written contracts in Czech Republic, Hungary, Poland and Slovak Republic: European Social Survey, 2005; employees not registered for social security in Hungary: unpublished data based on calculations for Elek, Scharle and Szabó (2008). Korea: Korean Labor and Income Panel Study, 2005; Mexico: Encuesta Nacional de Ingresos y Gastos de los Hogares, 2005; Turkey: Turkish Household Labour Force Survey, 2006.

Figure 2.A3.2 shows that, despite continuing economic development, the proportion of employees in informal jobs in Turkey has risen continuously since the early 1990s. In Mexico, informality was relatively stable during the 1990s, but has risen since 2000 when measured by either lack of health insurance or pension coverage. However, the share of employees without a written employment contract in total employment has stayed relatively stable at around 30% since 1992 (Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank)). In Korea, the coverage rules for social security schemes have been gradually extended, accompanied by a steady increase in the proportion of employees registered for social security, although coverage is still far from universal. In Poland and Hungary (for employees without written contracts), the post-transition decade has seen a steady decline in the proportion of employees in informal jobs, a trend likely to have been mirrored in the Czech Republic and the Slovak Republic, for which no trend data are available.

finds that 17.3% of all employed persons or 15.8% of non-farm employed persons (including both employees and self-employed) are not registered.

Figure 2.A3.2. Trends in informal employees^a



(a) Employees in informal jobs are defined as follows: *Korea*: employees not registered for the National Pension Scheme. *Hungary*: employees without a written employment contract. *Mexico*: employees without health insurance linked to their job. *Poland*: employees without an employment contract or social security coverage. *Turkey*: employees not registered with any social security institution.

(b) For Poland, data are for employees in informal jobs as a percentage of all persons aged 15 years and over.

Source: Korea: OECD estimates from the Korean Labor and Income Panel Survey, waves 3-8; Hungary: OECD estimates from the European Social Survey, rounds 1-3; Mexico: Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank); Poland: Polish Labour Force Survey Undeclared Employment Supplement; Turkey: Turkish Household Labour Force Survey.

Informal self-employment

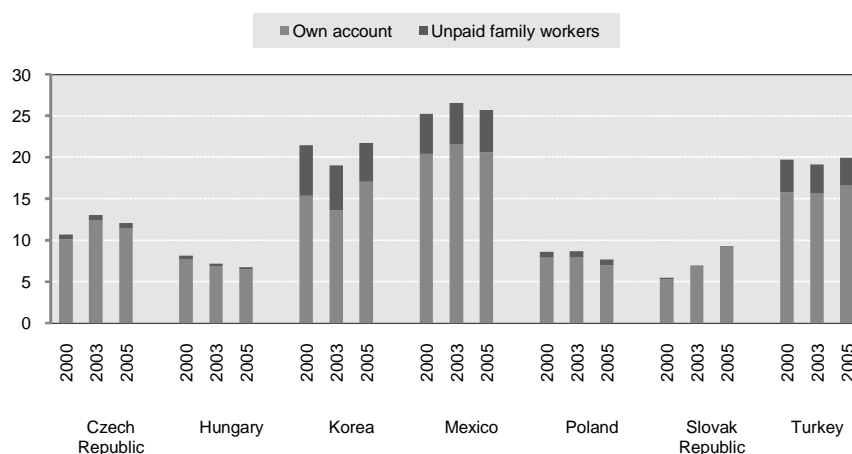
The self-employed may have more opportunities for informality than employees because they are typically covered by fewer regulations and detecting informal self-employment (i.e. under-declared income or non-compliance with mandatory social security) is more difficult. In addition, some self-employed may appear to be employees (i.e. subcontract every day to the same employer), but choose or are forced by their employer to operate as self-employed to bypass the legal requirements of a normal employer-employee relationship or reduce their tax liability. This phenomenon, referred to herein as *false self-employment*, is difficult to detect, but is thought to be relatively common in some of the central European countries examined in this chapter.

Previous research on informality among the self-employed adopts a range of definitions of the informal self-employed. Some consider all self-employed (including both own-account workers and employers) with low levels of education or in non-professional occupations to be informal (e.g. Marcouiller, Ruiz de Castilla and Woodruff, 1995; Gasparini and Tornarolli, 2007; Henley, Reza Arabsheibani and Carneiro, 2006), while others use business or tax registration or location (e.g. Bernabè, 2002). This chapter uses own-account workers (i.e. self-employed who do not employ any paid workers) as a proxy for informal employment among the self-employed. Existing research suggests that levels of informality, particularly tax and social security evasion, are particularly high for own-account and self-employed workers. For example, Stănculescu (2005) suggests that most own-account workers operate at least partly in the informal sector in central European countries, even though they may be officially registered. Although own-account workers in the Czech Republic pay the same amount, on average, in taxes as employees, more than half of them make no social contributions at all (Lehmann and Terrell,

2005). Breach *et al.* (2006) find personal income tax evasion rates of 77% for entrepreneurial and professional activities in Mexico, compared with 15% for wage earners. In Turkey, where the self-employed are required to register for social security, 52% of own-account workers are not registered.⁴ However, using this measure will probably overstate the extent of informal employment among own-account workers.⁵

Unpaid family workers are included here alongside own-account workers because they derive utility (e.g. from profits, in-kind production or future business ownership) from the informal activities of small businesses in much the same way as own-account workers. In some cases, a family business run by a husband and wife might be considered as own-account work for the husband but unpaid family work for the wife, even though they share equally in the operation and proceeds of the business. Unpaid family workers typically lack the employment protections offered to employees (in most countries, unpaid family workers are not legally required to be covered by labour law or social security). Less than 1% of unpaid family workers in small firms in Mexico have social security coverage or a written employment contract (Perry *et al.*, 2007) and only one-fifth are registered for social security in Turkey (Turkstat, 2000).

Figure 2.A3.3. Own-account and unpaid family workers as a percentage of non-farm employment



Source: Unpaid family workers: OECD Database on Labour Force Statistics; Own-account workers: Czech Republic, Hungary, Poland and Slovak Republic: Eurostat Labour Force Survey; Korea: Korean Labor and Income Panel Study; Mexico: 2000, 2003: Encuesta Nacional de Empleo, 2005: Encuesta Nacional de Ocupación y Empleo; Turkey: Turkish Household Labour Force Survey.

Own-account and unpaid family work is by far most widespread in Korea, Mexico and Turkey, where it comprises 20%-25% of all employment (Figure 2.A3.3). Over the past 10 years, own-account work has been stable in Korea, Mexico and Turkey. In contrast, own-account work grew in the early post-transition years in the central European countries, but has fallen or stabilised more recently in most. For example,

4. OECD estimates using 2006 data from the Turkish Household Labour Force Survey.

5. The definition for informal self-employed used in this chapter excludes employers, so may understate the extent of informality if informality among employers is extensive. However, even firms with very few employees tend to be much less informal than those run by own-account workers. For example, in Mexico, 15% of firms run by own-account workers are tax-compliant, compared with more than 50% of firms with one worker and 85% of firms with two workers (Perry *et al.*, 2007). A number of studies, including this one, have found that the characteristics determining the likelihood of being an employer vary significantly from those that determine the likelihood of being an own-account worker (e.g. Earle and Sakova, 2000).

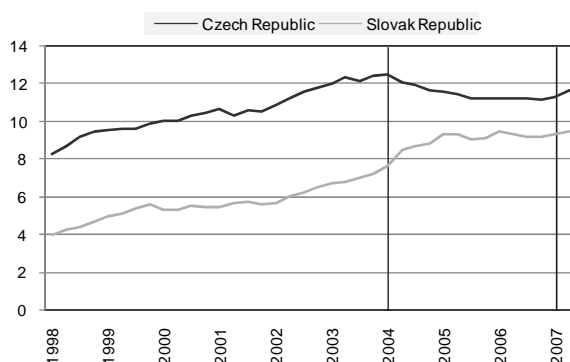
growth in own-account work in Poland has slowed in the past few years, and now appears to be in decline. The importance of own-account work also fell in the Czech Republic between 2004 and 2007, possibly as a result of policy reforms designed to reduce the incidence of false self-employment (see Box). In Hungary, own-account work has been falling since the early 1990s. Unpaid family workers make up less than 1% of total employment outside of Mexico, Korea and Turkey and have been declining in importance in Korea and Turkey, but remained stable at 5% in Mexico in recent years.

False self-employment in the Czech Republic

It is almost impossible to tell what proportion of own-account workers might be false self-employed or whether this type of employment is growing over time, although anecdotal evidence suggests that it may be widespread in the Czech Republic and Hungary (Hála, 2007; Neumann, 2007). The Czech government introduced a number of reforms in 2004 designed to halt the spread of false self-employment. They included an increase in the tax and social contribution base and the introduction of a minimum tax payment for the self-employed and a ban on hiring self-employed persons to perform standard business tasks on a regular basis. The latter ban was overturned in early 2007 in response to objections from employer and business organisations (Hála, 2007).

While it is difficult to isolate the impact of the policy reforms from other factors, the incidence of own-account work dropped substantially in the Czech Republic during the period of the ban, while own-account work increased in the Slovak Republic over the same period. In the few months for which data are available since the ban was lifted, own-account work appears to be expanding again in the Czech Republic. Prior to the ban, the construction, wholesale and retail trade and real estate and business services industries accounted for almost 60% of all own-account workers in the Czech Republic. During the period of the ban, employment of own-account workers in construction fell by 15 200 people, while employment of employees rose by 15 500. In the wholesale and retail trade industry, employment of own-account workers dropped by 27 800 people (almost one quarter of all own-account workers in this industry) while the number of employees rose by 17 700. Employment of both own-account workers and employees expanded in the real estate and business services industries, although there were around six times more employees engaged than own-account workers. It is not clear whether the slowdown in own-account employment was as a direct result of the ban. However, it seems likely that at least part of the fall in own-account employment, and subsequent expansion in the number of employees, was due to false self-employed workers either losing their jobs or being converted to employee status. Hála (2007) quotes the results of a survey conducted in 2006 by the Economic Chamber of the Czech Republic which found that 26% of self-employed people earned all their revenue from a single customer in the previous six months. Hála (2007) estimates that between a quarter and a third of all self-employed people in the Czech Republic could be false self-employed.

Own-account workers in the Czech Republic and Slovak Republic as a percentage of non-farm employment



Note: Vertical lines show the timing of the introduction and repeal of legislation in the Czech Republic banning false self-employment.

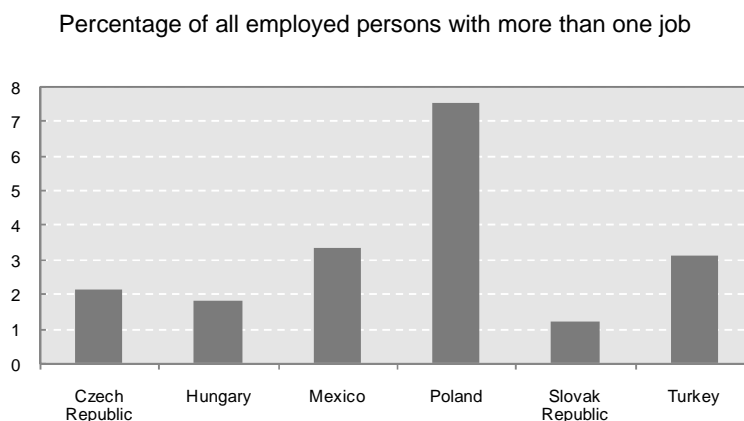
Source: Eurostat Labour Force Survey, quarterly data.

Multiple job holders

Multiple job holders are not necessarily informally employed, and in many cases their main job will be completely formal. However, like own-account workers, having a second job provides more opportunities for informality. For example, workers with social security coverage in their main job may see little benefit in contributing in their second job, particularly if benefits are capped. Alternatively, disguising secondary income may be relatively easy, particularly if it is irregular or seasonal, and could prove difficult for enforcement agencies to detect. Existing evidence shows that levels of informality are higher for second jobs than for workers with only one job (e.g. Averett, 2001; Guariglia and Kim, 2006; Sarzalska and Szydłowski, 2007).

Figure 2.A3.4 shows that Poland appears to be the only country examined in this chapter where there is substantial multiple job holding – double the EU average of 3.7%. Multiple job holding is on the decline or stable in the Czech Republic, Hungary and the Slovak Republic (no data on trends are available for Mexico or Turkey).⁶ A closer look at Poland shows that multiple job holding is subject to distinct seasonal fluctuations, possibly due to fluctuations in demand for agricultural labour: more than half of all secondary jobs in Poland are in the agricultural sector and only 4% of these workers work in the agricultural sector in their main job. Hours constraints in the main job appear to play little role in motivating multiple job-holding. While there was a trend decline in multiple job holding in Poland in the late 1990s, it has been stable at between 7.5% and 8% since the mid-2000s. Concurrent with a halving of the unemployment rate since 2003, this suggests that secondary jobs are largely being taken up for reasons other than economic disadvantage. This conjuncture is supported when examining the characteristics of multiple job holders, who tend to be those with the best labour market prospects. Workers aged between 35 and 44 years are over-represented among multiple job holders, as are those with tertiary or vocational qualifications.⁷ However, better-educated multiple job holders are less likely than average to be informal (without a contract or social security coverage or evading tax) in their second job (Sarzalska and Szydłowski, 2007).

Figure 2.A3.4. Multiple job-holding



Note: No data available for Korea.

Source: Czech Republic, Hungary, Poland, Slovak Republic and Turkey: Eurostat Labour Force Survey, 2006; Mexico: Nacional de Ingresos y Gastos de los Hogares, 2005.

6. It is unclear to what extent labour force survey estimates presented in Figure 2.A3.4 underestimate the true extent of multiple job holding. Cazes and Nesprova (2004) quote a survey of the Czech Republic in 1998 which reports multiple job holding rates ten times higher than the official LFS figures.
7. Estimates are from the Polish Labour Force Survey, quarter 2, 2007.

Undeclared and under-declared income

Between 10% and 30% of taxes and social security contributions typically go uncollected in the countries examined in this chapter. Calculating theoretical social security liability based on labour cost data from the 2000 national accounts, OECD (2004a) estimated that unpaid receipts amount to 9% for the Czech Republic, 13% for the Slovak Republic, 21% for Turkey, 30% for Korea, 32% for Poland and Hungary and 35% for Mexico. Using a similar methodology, but calculating theoretical social security liability based on income distribution from household surveys, Christie and Holzner (2006) estimated that 30-35% of social security contributions went uncollected in the Czech Republic, Hungary and Slovak Republic in the late 1990s and early 2000s. They find rates of income tax non-compliance of 23% for the Czech Republic, 30% in Hungary, 34% in Poland and 44% in the Slovak Republic.⁸ Both social security and personal income tax compliance in the Czech Republic, Hungary and Poland is improving over time, while compliance rates were relatively stable in the Slovak Republic (Christie and Holzner, 2006). Estimates for Mexico show that 15% of theoretical personal income tax liabilities of salaried workers are not collected compared with 80% for the self-employed. Tax compliance has improved among salaried workers in Mexico, but remains relatively unchanged since 1998 for the self-employed (Breach *et al.*, 2006).

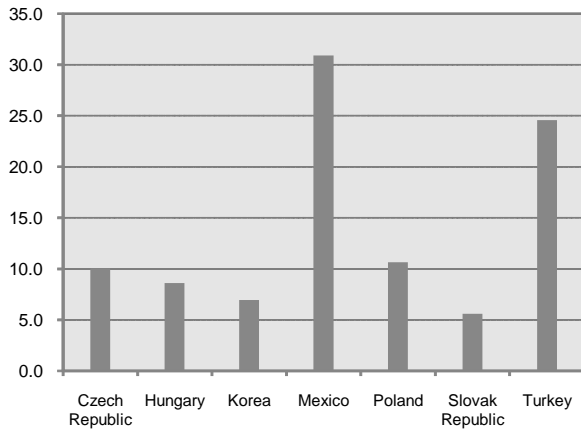
Uncollected personal income tax or social security liabilities arise from two sources. First, some workers and firms are completely unregistered for tax or social security, and therefore fail to declare any of their income. Second, workers who might otherwise be considered formal may fail to declare their entire income for tax or social security purposes. Countries with high rates of undeclared income are also likely to have high rates of under-declared income. However, it is possible that countries with relatively low levels of undeclared income continue to experience tax revenue losses because of partial compliance.

Figure 2.A3.5 shows that 30% of workers in formal firms in Mexico and 25% in Turkey are typically not registered for tax purposes. Rates of total non-compliance are lower in the other countries, notably in Korea, where only 7% of the workforce are not registered, compared with 25% who are not registered for social security. However, among firms that fully register their workforce, many fail to declare their entire wage bill to the tax authorities. Survey data suggest that more than 20% of firms in Turkey and 12% in Hungary under-declare their wage bill, despite being formal in other senses (there no such estimates are available for Korea or Mexico). While tax compliance generally improves with firm size and under-declaration is low among large firms in the central European countries, more than 20% of the wage bill of Turkish firms with more than 100 workers is not reported to tax authorities.

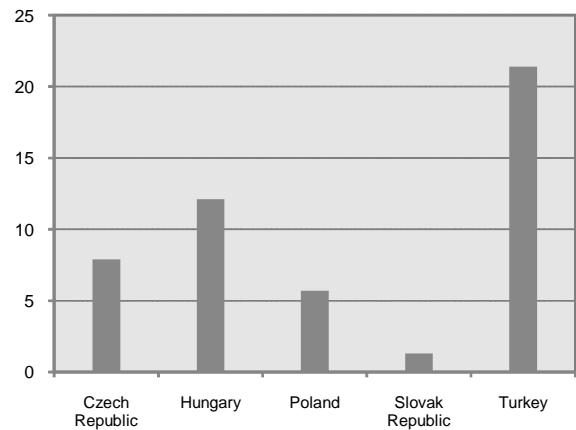
8 . The high rate of tax non-compliance recorded in the Slovak Republic was for 2002, before the introduction of a significant tax reform package that could be expected to have improved compliance rates. Sklenář and Burger (2006) evaluate the impact of the 2003 Slovak tax reforms on tax evasion behaviour of manufacturing firms using the Czech Republic as a comparison group. They find no significant decline in tax evasion as a result of the reforms in 2004, although there was a significant increase in satisfaction with the tax system in the Slovak Republic. They suggest that changes to tax-evasion behaviour may take longer than one year to eventuate.

Figure 2.A3.5. Tax non-compliance by formal firms

A. Proportion of workforce typically not reported for tax purposes



B. Proportion of formal firms typically reporting entire workforce but under-reporting wage bill for tax purposes



Note: Based on answers to the following question: Recognising the difficulties that many firms face in fully complying with labour regulations: what percentage of (i) total workforce and (ii) the actual wage bill would you estimate the typical firm in your area of business reports for tax purposes? Item non-response rates for this question are: Czech Republic: 3%; Hungary: 3%; Korea: 2%; Mexico: 12%; Poland: 1%; Slovak Republic: 16%; Turkey: 6%.

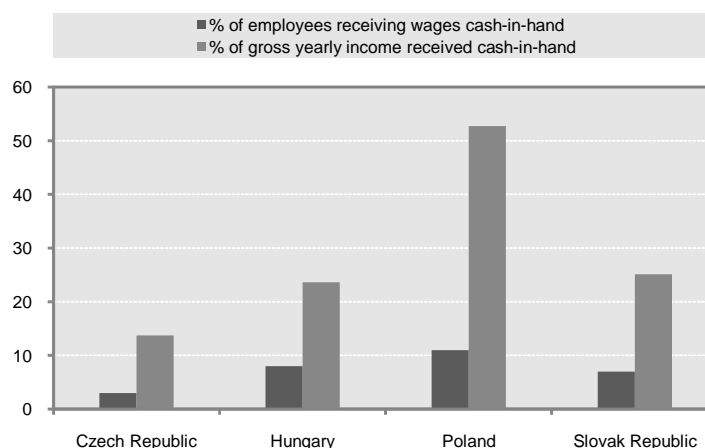
Source: OECD estimates for private sector firms using World Bank Enterprise Surveys, 2005 (2006 for Mexico).

Turkish administrative tax data support the view that under-declaration of income is substantial. On average, 37% of the income of audited (and thus registered) taxpayers was unreported each year between 1991 and 2002. This figure probably overstates the extent of under-declaration because the data are based on tax compliance among audited taxpayers and, given limited resources, tax authorities are likely to concentrate on auditing taxpayers they suspect of having the most uncollected tax revenue. Even so, tax compliance in Turkey appears to be relatively poor, highly variable and sensitive to economic conditions. For example, in 2001, the year of the economic crisis in Turkey, 65% of income was undeclared among audited taxpayers (Acar and Merter, 2004). Under-reporting of income for social security is also widespread. Half of employees registered for social security are reported by their employer to have earnings at the minimum insurable level (World Bank, 2006).

One form of under-declaration that may be common in central European countries is the practice of paying some or all income *cash-in-hand* without declaring it to tax or social security authorities. Figure 2.A3.6 shows that this practice affects 3-11% of employees in the countries examined, below the average for other central and eastern European countries such as Bulgaria (14%), Latvia (17%) and Romania (23%), but, with the exception of the Czech Republic, above the EU-27 average of 5% (European Commission, 2007a). In general, employees receive only a small proportion of their total income cash-in-hand. However, Polish employees who receive cash-in-hand payments receive more than half their pay in this manner on average, indicating that the practice could be a significant source of undeclared income.

Figure 2.A3.6. Cash-in-hand wages

Proportion of employees receiving cash-in-hand wages and percentage of gross yearly earnings paid cash-in-hand to those receiving cash-in-hand wages



Source: European Commission (2007a), *Undeclared Work in the European Union*, Special Eurobarometer Report no. 284/wave 67.3, European Commission, Brussels.

Characteristics of informal workers

The impact of personal characteristics on the probability of being in informal employment is modelled using a multinomial logit model. This is a standard approach adopted in the literature on occupational choice and a similar methodology has been applied to a number of studies of informal employment (e.g. Tansel 2004; Gong and van Soest 2002; Earle and Sakova 2000). The model assumes that individuals choose one employment state from a range of alternatives, where the alternatives are unordered. The probability that an individual chooses a particular employment state (such as being an employee in an informal job) can be modelled as a function of their personal characteristics. The estimation is done separately for each country to allow for cross-country differences in how personal characteristics affect employment status choice, because of slight differences in available variables and because the sample sizes available vary widely between countries. The sample for each country was restricted to include non-agricultural workers only.

The alternative employment states included in the model are: employee in formal job; employee in informal job; own-account worker without employees; unpaid family worker; and employer. Results are presented only for employee in informal job, own-account worker and unpaid family worker, where the base category is employee in formal job. For each country, the following explanatory variables are included: gender, marital status, number of children aged under 12 years, age (in 10-year categories), education, migrant status (except for Mexico and Turkey where data are not available) and a dummy variable for women with children aged under 12 years in order to allow the impact of children to vary by gender. A series of regional dummy variables are also included to control for regional labour market effects. Explanatory variables that are found to be insignificant are nevertheless included in the final specifications, first, to provide a consistent model across countries and, second, because of the difficulty in interpreting tests for non-significant coefficients in the multinomial logit model (see Long and Freese, 2006, for a discussion). Wald tests of the joint significance of the education and age variables reject the

null hypotheses that the education and age variables, respectively, are jointly equal to zero for each specification.⁹

Table 2.A3.1 outlines the data sources and sample sizes used in the estimations. Multiple cross-sections of the European Social Survey are pooled where available to increase the sample size. Estimates are weighted using cross-sectional, individual-level weights supplied with each dataset, except for Mexico, where there are no such weights available (weights provided with the ENIGH survey are suitable for household-level analysis only).

Table 2.A3.1 Data sources, sample size and definitions

Country	Data source	Year	Sample size	Definition of informal jobs
Czech Republic	European Social Survey	2004	2 479	Employees without written employment contract
Hungary	European Social Survey	2002; 2005; 2006/07	3 943	Employees without written employment contract
Korea	Korean Labour and Income Panel Study	2005	5 823	Employees not contributing to national pension scheme
Mexico	Mexican Household Income and Expenditure Survey (ENIGH)	2005	30 909	Employees not registered with IMSS/ISSTE
Poland	European Social Survey	2004; 2006	2 591	Employees without written employment contract
Slovak Republic	European Social Survey	2004; 2006/07	2 532	Employees without written employment contract
Turkey	Turkish Household Labour Force Survey	2006	103 067	Employees not registered with any social security institute

Results for each country are shown in Table 2.A3.2 for three categories proxying informal employment: employees without social security registration or employment contracts (*informal employees*), own-account workers and unpaid family workers. The comparison group in each case is formal employees, or employees with either social security registration or a written employment contract (depending on the country). The results are presented as odds-ratios for each explanatory variable and alternative. An odds-ratio shows the relative chance of a worker with a particular characteristic being informally employed compared with the base category, which in this case is employee in a formal job. An odds-ratio greater than one indicates that the particular characteristic increases the chance that a worker is informally employed rather than an employee in a formal job. An odds-ratio less than one indicates that the particular characteristics reduces the chance that a worker is informally employed rather than an employee in a formal job. For example, an odds-ratio of 2.5 for the variable “Married” indicates that, compared with an unmarried worker, a married worker is 2.5 times more likely to be informally employed rather than an employee in a formal job. Likewise, an odds-ratio of 0.5 for the variable “Completed post-school education” indicates that, compared with a worker who only has a primary education or less (the comparison category for education), a worker who has completed post-school education is half as likely to be informally employed rather than a formal employee.

9. Wald tests, rather than likelihood ratio tests, are used because the models are estimated using robust Huber-White standard errors, which precludes the use of a likelihood ratio test.

Table 2.A3.2 Factors affecting the likelihood of informal employment

Odds-ratios from a multinomial logit model of probability of being in given category rather than a formal employee

	Czech Republic				Hungary				Korea				Mexico			
	Informal employee	Own account worker	Unpaid family worker		Informal employee	Own account worker	Unpaid family worker		Informal employee	Own account worker	Unpaid family worker		Informal employee	Own account worker	Unpaid family worker	
Female	1.325 [0.55]	0.515** [2.26]	1.418 [0.66]	0.612** [2.11]	0.578*** [2.62]	0.779 [0.62]	1.603*** [5.24]	1.079 [0.70]	15.220*** [11.81]	1.169*** [3.43]	3.209*** [13.93]		1.602*** [9.32]	0.412*** [13.50]	1.071*** [4.51]	2.553*** [12.50]
Married	0.454 [1.56]	0.528** [2.38]	0.96 [0.09]	1.2 [0.76]	1.305 [1.33]	1.598 [1.11]	0.635*** [4.49]	0.748** [2.44]	5.218*** [5.67]	1.062 [1.33]	0.747*** [2.99]		1.154*** [2.75]	0.738*** [6.55]	1.286*** [4.28]	0.739*** [3.61]
Number of children under 12	3.446*** [3.45]	1.086 [0.36]	0.137** [2.38]	0.791 [1.28]	0.877 [0.73]	0.767 [0.80]	0.825*** [2.81]	1.045 [0.62]	0.822 [1.02]	1.059*** [4.42]	1.111*** [4.28]		1.071*** [4.51]	2.345*** [19.88]	1.071*** [4.42]	1.111*** [4.28]
Mother with children under 12	0.000*** [39.70]	1.096 [0.18]	29.333*** [2.51]	2.315* [1.90]	0.946 [0.14]	2.28 [1.18]	1.481** [2.36]	1.175 [0.81]	1.662 [1.57]	0.944 [1.09]	0.915 [0.99]		1.286*** [4.36]	0.412*** [13.50]	1.286*** [4.36]	0.915 [0.99]
Born outside country	2.226 [1.28]	0.213* [1.91]	4.315* [1.85]	1.416 [0.71]	0.458 [1.06]	0.000*** [109.51]	1.019 [0.03]	1.798 [0.84]	0.000*** [36.28]	1.019 [0.03]	0.000*** [36.28]		1.798 [0.84]	2.345*** [19.88]	1.019 [0.03]	0.000*** [36.28]
Aged 15-24 years	21.026*** [4.15]	0.121** [2.35]	3.741 [1.31]	5.933*** [3.93]	0.81 [0.50]	0.935 [0.09]	0.975 [0.15]	0.431*** [3.17]	0.576 [1.07]	2.345*** [19.88]	2.553*** [12.50]		0.412*** [13.50]	2.345*** [19.88]	0.412*** [13.50]	2.553*** [12.50]
Aged 25-34 years	0.377 [1.03]	0.553 [1.59]	0.825 [0.28]	1.177 [0.36]	1.125 [0.43]	0.494 [1.02]	0.614*** [4.38]	0.326*** [7.82]	0.427*** [3.62]	1.227*** [5.24]	0.739*** [3.61]		0.738*** [6.55]	1.227*** [5.24]	0.738*** [6.55]	0.739*** [3.61]
Aged 45-54 years	0.486 [0.89]	0.844 [0.49]	1.57 [0.49]	1.627 [1.15]	1.705** [1.98]	0.638 [0.93]	0.745** [2.47]	1.336** [2.30]	1.119 [0.57]	0.899** [2.20]	0.764*** [2.77]		1.467*** [7.68]	0.899** [2.20]	1.467*** [7.68]	0.764*** [2.77]
Aged 55+ years	1.724 [0.77]	0.498* [1.88]	0.906 [0.11]	1.716 [1.40]	0.619 [1.64]	0.449* [1.81]	1.275* [1.68]	2.230*** [5.33]	1.534 [1.64]	1.230*** [3.29]	1.609*** [4.45]		3.189*** [18.79]	1.230*** [3.29]	3.189*** [18.79]	1.609*** [4.45]
Lower secondary education	0.576 [0.41]	0.052** [2.26]	0.045*** [2.75]	0.628* [1.74]	2.990*** [2.96]	0.725 [0.72]	0.916 [0.51]	1.108 [0.53]	0.997 [0.01]	0.460*** [18.78]	0.586*** [7.35]		0.456*** [16.82]	0.460*** [18.78]	0.456*** [16.82]	0.586*** [7.35]
Completed secondary education	0.167 [1.40]	0.198 [1.42]	0.054** [2.50]	0.393*** [3.26]	5.457*** [4.58]	1.148 [0.34]	0.426*** [5.48]	0.739* [1.76]	0.656* [1.73]	0.274*** [28.10]	0.339*** [12.94]		0.259*** [23.80]	0.274*** [28.10]	0.259*** [23.80]	0.339*** [12.94]
Completed post-school education	0.544 [0.41]	0.263 [1.13]	0.090* [1.94]	0.189*** [3.47]	3.759*** [3.43]	1.618 [1.08]	0.122*** [12.42]	0.281*** [6.86]	0.189*** [5.55]	0.196*** [37.77]	0.170*** [19.84]		0.201*** [33.06]	0.196*** [37.77]	0.201*** [33.06]	0.170*** [19.84]
Regional dummy variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Pseudo R-squared	0.127			0.081			0.123			0.106			0.106			
N	2479			3,943			5,823			30,909			30,909			

Note: * significant at 10%; ** significant at 5%; *** significant at 1%.
 Robust t-statistics in brackets.
 Comparison categories are aged 35-44 years and primary school or below.

Table 2.A3.2 (continued)

	Poland			Slovak Republic			Turkey		
	Informal employee	Own account worker	Unpaid family worker	Informal employee	Own account worker	Unpaid family worker	Informal employee	Own account worker	Unpaid family worker
Female	0.992 [0.04]	0.605** [2.06]	0.492* [1.68]	0.991 [0.03]	0.335*** [4.26]	0.375* [1.82]	1.086*** [2.65]	0.619*** [8.19]	1.208*** [3.12]
Married	0.452*** [3.15]	1.37 [1.19]	2.515** [2.48]	0.435** [2.37]	1.359 [1.23]	0.753 [0.51]	0.444*** [26.31]	0.679*** [7.48]	0.513*** [10.99]
Number of children under 12	1.309 [1.45]	1.07 [0.39]	0.458 [1.52]	1.631** [2.49]	0.908 [0.54]	0.98 [0.06]	1.085*** [7.47]	1.115*** [8.15]	0.591*** [12.57]
Mother with children under 12	0.533 [1.39]	0.904 [0.27]	1.348 [0.36]	0.664 [0.82]	1.56 [1.15]	2.328 [0.86]	1.557*** [9.45]	2.888*** [14.34]	6.832*** [22.41]
Born outside country	0.000*** [101.53]	1.111 [0.10]	0.000*** [78.77]	2.389 [1.22]	0.758 [0.37]	2.368 [0.75]			
Aged 15-24 years	8.255*** [4.94]	0.669 [1.04]	5.679*** [3.14]	12.754*** [4.83]	1.422 [0.92]	6.229** [1.98]	3.200*** [32.81]	0.885* [1.86]	3.776*** [18.02]
Aged 25-34 years	2.875** [2.54]	0.579* [1.82]	1.811 [0.92]	1.561 [0.83]	1.195 [0.67]	2.043 [0.80]	1.258*** [8.70]	0.976 [0.68]	1.428*** [5.60]
Aged 45-54 years	1.615 [1.10]	0.877 [0.48]	0.76 [0.40]	1.361 [0.54]	0.922 [0.29]	1.669 [0.59]	1.837*** [17.82]	2.400*** [20.90]	1.224** [2.23]
Aged 55+ years	0.712 [0.71]	0.491** [2.26]	0.682 [0.64]	0.616 [0.80]	0.245*** [3.63]	0.212 [1.20]	5.070*** [26.78]	12.420*** [39.54]	3.649*** [10.37]
Lower secondary education	0.646 [1.46]	1.589 [1.24]	0.89 [0.19]	0.658 [0.78]	0.204* [1.80]	1.5e+09*** [27.97]	0.577*** [20.46]	0.519*** [15.56]	0.774*** [4.53]
Completed secondary education	0.343*** [3.22]	1.977* [1.87]	0.966 [0.06]	0.157*** [3.56]	1.055 [0.10]	2.5e+08*** [28.89]	0.215*** [58.85]	0.247*** [36.24]	0.430*** [16.46]
Completed post-school education	0.166*** [3.97]	1.735 [1.35]	1.073 [0.11]	0.080*** [3.23]	1.079 [0.14]	3.60E+08 .	0.051*** [66.89]	0.064*** [43.93]	0.108*** [25.93]
Regional dummy variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.131			0.121			0.141		
N	2591			2,532			103067		

Note: * significant at 10%; ** significant at 5%; *** significant at 1%.
 Robust t-statistics in brackets.
 Comparison categories are aged 35-44 years and primary school or below.

The regression analysis highlights the following cross-country and within-country differences in the characteristics of informal workers:

- *Employees in informal jobs*: In all seven countries, the likelihood of being in an informal job decreases sharply as employees' education levels rise. In Mexico and Turkey, the likelihood of being in an informal job is higher for both the youngest and oldest workers than for those of prime working age. In Korea, the likelihood is highest for workers aged 55 years and older, while in the central European countries, young employees are the most likely to be in informal jobs. In Korea, Mexico and Turkey, women have a significantly increased probability of being in informal jobs compared with men, while in Hungary, the opposite is true.¹⁰
- *Own account workers*: In Korea, Mexico and Turkey, the probability of being an own-account worker increases with age, but falls with education level. In contrast, in Hungary and Poland, and less clearly in the Czech Republic and the Slovak Republic, own-account workers are more likely to have medium levels of education and be middle-aged, suggesting that own-account work is more 'voluntary' in central Europe, while it remains a survival strategy for those with few labour market opportunities in Korea, Mexico and Turkey. In the central European countries, men are more likely than women to be own-account workers, while in Mexico, women have a higher probability of own-account work. Own-account work could be attractive to workers with family responsibilities in countries where child care is scarce or costly because it provides them with greater control over working hours and place of work. In Mexico and Turkey, mothers with children aged less than 12 years are more likely to be own-account workers than formal employees, other things equal.
- *Unpaid family workers*: In Korea, Mexico and Turkey, where there is a sizeable proportion of unpaid family workers, they share similar characteristics to employees in informal jobs. The likelihood of being an unpaid family worker declines with education and is highest for the youngest and the oldest age groups in Mexico and Turkey and for workers aged over 55 years in Korea. Women are far more likely than men to be unpaid family workers.

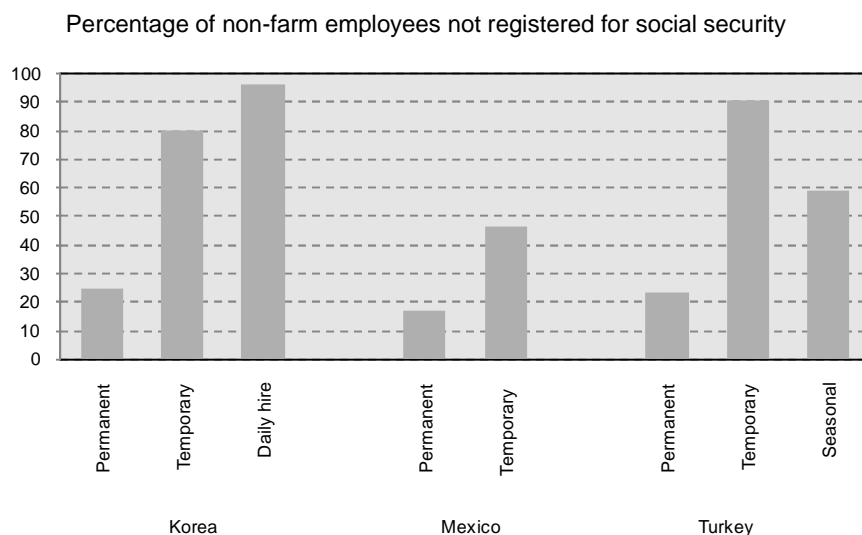
For employees, informal jobs are particularly prevalent in small firms; they account for more than 70% of employees in firms with less than 10 employees in Korea and Mexico, 60% in Turkey and 20% in Poland. The proportion of all informal employees who are employed in small businesses ranges from 27% in Hungary (employees without written contracts), around 50% in the Czech Republic and the Slovak Republic, 58% in Korea to around 70% in Poland, Mexico (employees not registered for social security) and Turkey.

There is also a clear association between informality and other forms of labour market duality experienced by employees. Figure 2.A3.7 shows that employees on temporary, casual, seasonal or daily-hire contracts are far more likely to be informal than permanent employees. Daily-hire workers in Korea are particularly prone to informality. This stems, in part, from previous exemptions of daily-hire workers from coverage by some forms of social protection, although both the National Pension Scheme (shown in Figure 2.A3.7) and the Employment Insurance Scheme are now mandatory for daily-hire workers (Grubb, Lee and Tergeist, 2007). The fixed administrative costs of registering an employee for social security, combined with the low probability of being caught for not registering a non-permanent employee, mean

10. Unfortunately, there are no microdata available to examine the characteristics of employees in Hungary who are not registered for social security. Comparing administrative data on pension coverage and labour force survey data, Elek, Scharle and Szabó (2008) find that prime-aged men are most likely to be unregistered for social security, and that the incidence of informal jobs is highest in the construction, personal services and transport industries.

that employers may find it is less attractive to register non-permanent than permanent employees. However, the spread of non-permanent employment cannot fully explain the high incidence of informal employment. Permanent employment is still dominant in all three countries, partly due to strict regulations preventing the use of non-permanent contracts, especially in Turkey and Mexico. Permanent employees account for 80% of all employees in Korea, 45% in Mexico and 90% in Turkey. Non-compliance with social security is widespread among permanent employees, ranging from 16% in Mexico to almost 25% in Korea and Turkey.

Figure 2.A3.7. Informal employees by contract type, 2005



Note: For Korea, “daily hire” refers to workers with a work contract of less than one month, workers with a daily-based wage or workers who do not have a regular (fixed) workplace, while “temporary” refers to workers with a work contract for more than one month but less than one year, or where there is no work contract but an expectation that work will be offered for less than one year.

Source: OECD calculations using following data sources: Korea: Korean Labor and Income Panel Study, 2005; Mexico: Encuesta Nacional de Ingresos y Gastos de los Hogares, 2005; Turkey: Turkish Household Labour Force Survey, 2006.

The characteristics of some own-account workers (especially those in the central European countries who tend to be well-educated and of prime working age) suggest that own-account work may be a choice rather than an economic necessity. Table 2.A3.3 shows that only a small proportion of the self-employed (here including both own-account workers and employers) would prefer to work as an employee. In the Czech Republic and the Slovak Republic, the self-employed are more satisfied than full-time employees, while in Hungary, average job satisfaction is about the same for both groups. Only in Poland and Turkey (among the countries for which data are available) are the self-employed less satisfied with their job than employees. Relative satisfaction with self-employment comes despite a widespread acknowledgement of the insecurity of self-employment. These findings suggest differences in preferences for risk between own-account workers and employees. There may also be benefits other than job security which motivate people to become self-employed, including both monetary and non-pecuniary rewards, such as flexible working hours or greater autonomy over the pace, location or type of work. In the early 1990s, two thirds of Mexican workers moving from formal salaried jobs to self-employment did so voluntarily, primarily for greater independence or higher pay (Perry *et. al*, 2007).

Monetary benefit from self-employment may arise because particular skills or experience are not well-rewarded in the formal sector, or because opportunities for tax and social contribution evasion are better. Previous research paints a mixed picture of the earnings benefits to being an own-account worker

and highlights the importance of a country-specific approach. Earle and Sakova (2000) find, after controlling for personal and job characteristics, a small premium for own-account workers in the Czech Republic and the Slovak Republic, very little difference in Hungary and a small earnings penalty for own-account workers in Poland in the mid-1990s.¹¹ Workers ‘choose’ to be own-account workers in Hungary and Poland, despite not earning more than in salaried jobs, a result the authors attribute to labour market rationing. Lehmann and Terrell (2005) find that own-account workers in the Czech Republic in 1998 have lower gross earnings than employees, but earn more in net terms, due to widespread non-payment of social contributions by own-account workers. Co, Gang and Yun (2005) estimate the employee-self-employed wage premium in Hungary in 1994 and find that there is no difference in returns to characteristics between the two sectors.¹² They suggest that non-pecuniary benefits or differences in preferences determine the choice to be self-employed, rather than earnings potential. Tansel (2000) finds that own-account workers in Turkey in 1994 earn less per hour than either formal or informal employees after controlling for personal characteristics and selection into alternative types of work. The earnings differential between formal employees and own-account workers increases with experience and education level, at least for men.¹³ Although the definitions of self-employed in Mexico differ between studies, the general finding is that self-employment (incorporating own-account workers and employers operating small businesses) is associated with a net earnings premium over formal salaried work (e.g. Gong and van Soest, 2002; Maloney, 1999).¹⁴ Gong and van Soest (2002) find evidence that the earnings premium (or at least lack of an earnings penalty) for self-employment only applies to workers with little education. For highly-educated workers, self-employment earnings are lower than employee earnings.¹⁵

Table 2.A3.3. Views about self-employment

	Percentage of self-employed				
	Would prefer to be an employee		Employees have more job security than self-employed	Job satisfaction (scale 1-10)	
	2005	1997		Full time employee	Self-employed
Czech Republic	27.5	14.3	59.9	7.2	8.0
Hungary	18.3	9.0	46.9	6.7	6.8
Korea	23.8	..	68.2	..	..
Mexico	8.7	..	70.2	..	..
Poland	..	6.2	..	6.7	5.7
Slovak Republic	..	..	..	6.6	7.1
Turkey	..	..	..	6.6	5.6

Note: -- = not available. Agree or strongly agree that employees have more job security than the self-employed.

- 11 . The analysis includes all employed persons, including farm workers. To the extent that farmer are likely to have lower earnings than other own-account workers, this will have a much bigger influence on the results for Poland, where a large proportion of own-account workers are farmers, than in the Czech and Slovak Republics, where very few people are employed in agriculture.
- 12 . They do not distinguish between own-account workers and employers.
- 13 . The relationship for women is less clear because small sample size means that the wage equation for female own-account is not well defined.
- 14 . A number of other studies (e.g. Marcouiller, Ruiz de Castilla and Woodruff, 1995) examine the formal-informal wage gap in Mexico, but use definitions of informality based on firm size or social protection coverage that make them difficult to compare to the results in this chapter.
- 15 . Despite lower average earnings, self-employment often has a greater dispersion of earnings, making it attractive to risk-loving individuals.

Source: Preferences and views about job security: International Social Survey Programme, Work Orientation Survey 2005. Job satisfaction: World Values Survey: Czech Republic, Hungary, Poland and Slovak Republic, 1999; Turkey, 2001.

Characteristics of workers with undeclared income

Because of the sensitivity involved in collecting information about tax-evasion behaviour, little is known about the characteristics of under-declarers. Direct survey estimates about tax evasion are likely to underestimate the extent of undeclared income because respondents probably fail to answer such sensitive questions accurately. Nevertheless, they can provide some guidance as to the types of workers who are most likely to under-declare income. In a 2000 survey in the Czech Republic and the Slovak Republic, working without declaring income was found to be more common for men than women, and for workers aged less than 25 years than for older workers. The earnings and hours profiles of undeclared workers suggest that people engaged in undeclared work in the Slovak Republic have lower levels of education than in the Czech Republic. In general, tax evasion appears to be more common among those with mid-level education (Hanousek and Pulda, 2002). On average across Europe, cash-in-hand payments are more likely to be received by younger than older workers, by men than women and by workers with medium levels of education and those in manual occupation (European Commission, 2007a).¹⁶

Estimated earnings premiums for informal employment in Korea, Mexico and Turkey

The difference between potential earnings for employees in formal and informal jobs are estimated for the three countries where there are significant numbers of employees in informal jobs; Korea, Mexico and Turkey.¹⁷ If workers were randomly allocated between formal and informal jobs and returns to personal characteristics were the same in both sectors, the formal earnings premium could be estimated by including a dummy variable (or series of dummy variables) for each sector in a standard OLS earnings regression for all workers. However, previous research shows that the probability of being in the formal or informal sectors is likely to be influenced by observed and unobserved characteristics that also influence earnings, and that the returns to personal characteristics differ between sectors. In order to allow for these factors, an endogenous switching model is estimated using a two-stage estimation procedure. In the first stage, workers 'choose' between being formal employees, informal employees, own-account workers, unpaid family workers and employers, with the probability of choosing each outcome modelled using a multinomial logit model.¹ In the second stage, earnings are estimated separately for informal and formal employees by including a number of selection variables estimated from the first-stage regression as controls in the earnings regressions. There are a number of alternative ways to control for sample selection using a multinomial logit selection model (e.g. Lee, 1983; Dubin and McFadden, 1984; Dahl, 2002).

16. The results from the survey are for EU-27 countries on average and should be taken only as indicative of the characteristics of the central European countries examined in this chapter.

17. Earnings premiums for formal employment compared with own-account work were not estimated because of difficulties in accurately measuring the earnings of own-account workers and comparability with employee earnings data.

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Bourguignon, Fournier and Gurgand (2007) show that Dubin and McFadden's (1984) method is preferred for large samples like those used here. The second-stage OLS regression with selection-correction terms is:

$$w_s = X\beta_s + \sigma_s \sum_{j \neq s} \left(\frac{P_j \ln(P_j)}{1 - P_j} + \ln(P_s) \right) + u_s$$

where w_s is log earnings in outcome s , X are personal characteristics and P is the probability of outcome j predicted by the multinomial logit model.

Earnings equations include as regressors education, years of work experience (or potential experience), years of tenure in current job (where available), regional dummies and a control for weekly hours of work. All selection equations include earnings equation variables (with the exception of the weekly hours control) and a number of additional variables. In order to identify the earnings equation, a variable should be included in the selection equation that affects the chance of selection but not earnings. Previous studies on this topic include a range of identifying restrictions, such as a control for whether another household member is registered for social security, family history of self-employment, household unearned income or wealth, family size and number of children. The following data sources were used in the estimation:

- *Korean Labour and Income Panel Study (KLIPS) 2005* – The sample used includes all employed persons (employees, self-employed, employers and unpaid family workers) except those employed in agriculture, forestry or fishing industries. A small number of observations are dropped from the sample because they had zero monthly income. Five categories of workers are identified: formal employees, informal employees, own-account workers, employers and unpaid family workers. Employees are identified as formal if they contribute to the National Pension Scheme in their main job and informal otherwise. Own-account workers are those who run their own business without paid employees (they may have unpaid family workers). Unpaid family workers are those whose main job involves working 18 or more hours per week in a family business without pay. Earnings are net monthly earnings in the month prior to the survey, calculated as gross earnings less taxes paid on earnings. Work experience variables are constructed from the KLIPS Job History file.
- *Mexican Survey of Household Income and Expenditure (Encuesta Nacional de Ingresos y Gastos de los Hogares) 2005* – The sample used includes all employed persons (employees, self-employed, employers and unpaid family workers) except those employed in agriculture, forestry or fishing and cooperative workers. Domestic workers in households are also excluded because at least some of their income is likely to be paid in-kind (e.g. accommodation and food) (Marcouiller, Ruiz de Castilla and Woodruff, 1995). Income variables refer to income from all jobs, so workers with more than one job (around 3 per cent of the sample), along with those who work outside Mexico are also excluded from the analysis. Five categories of workers are identified: formal employees, informal employees, own-account workers, employers and unpaid family workers. Employees are identified as formal if they contribute to IMSS or ISSSTE in their main job and informal otherwise. Own-account workers are those who run their own business without paid employees (they may have unpaid family workers). Earnings are gross monthly income from month prior to the survey. For employees, monthly income includes wages and salaries, plus the monthly average (averaged over the past 6 months) of bonus payments such as Christmas and holiday bonuses. There is no measure of work experience, so potential experience is constructed as age minus years of education minus six. Years of education is constructed from completed education categories as follows: preescolar (0 years); primaria (6 years); secundaria (9 years); preparatoria o bachillerato (12 years); carrera tecnica o commercial (14 years);

professional (16 years); maestria (18 years); doctorado (20 years). Number of children refers to total number of children aged less than 12 years in household.

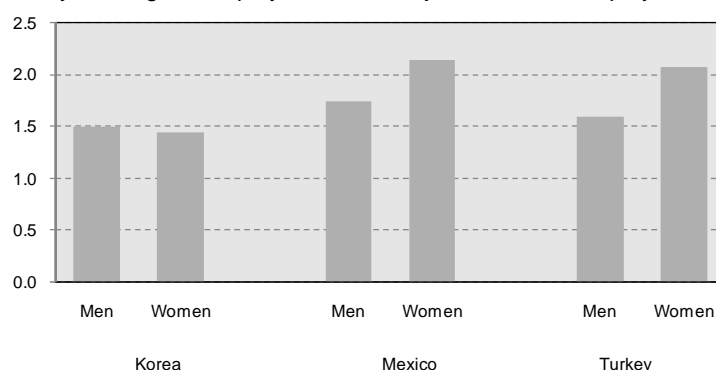
- *Turkish Household Budget Survey 2005* – The sample used includes all employed persons (employees, self-employed, employers and unpaid family workers) except those employed in agriculture, forestry or fishing industries. Five categories of workers are identified: formal employees, informal employees, own-account workers, employers and unpaid family workers. Employees are identified as formal if they are registered with any social security institution and informal otherwise. Own-account workers are those who run their own business without paid employees (they may have unpaid family workers). Earnings are net monthly income from the month prior to the survey. There is no measure of work experience, so potential experience is constructed as age minus years of education minus six. Years of education is constructed from completed education categories as follows: illiterate (0 years); literate but not finished primary school (2 years); primary school (5 years); junior high school or middle school (8 years); high or vocational high school (11 years); 2-year university (13 years); 4-year university (15 years); higher degree (17 years).

Due to differences in data availability and the difficulty in choosing between alternative specifications (see Long and Freese, 2006, for a discussion of the difficulty of interpreting tests for non-significant coefficients in the multinomial logit model), a number of alternative earnings- and selection-specification combinations are estimated for each country and earnings premiums predicted for each (12 combinations each for men and women for Korea; and eight each for Mexico and Turkey). Earnings premium estimates presented here are calculated using the estimated coefficients from earnings equations to predict log earnings for a worker with sample-average characteristics (or with different levels of education or experience, but otherwise sample-average characteristics). In general, the estimates are robust to changes in the specifications, with the exception of Turkish women with tertiary education. However, changes in the model specifications do not change the overall direction of the results presented below, which reflect the median estimated premiums for each country.

Given their low levels of human capital and relative youth (at least in Mexico and Turkey), it is not surprising that informal employees earn less, on average, than formal employees. However, even after controlling for differences in observable characteristics such as education, work experience and location and for unobserved characteristics that influence both the relative likelihood of being an informal employee and earnings, Figure 2.A3.8 shows that a worker with average characteristics will earn 1.5-2 times more in a formal job than in an informal job. In Mexico and Turkey, the earnings penalty for having an informal job is higher for women than men. The estimated gross earnings premiums for Mexico tend to be slightly higher than those for Korea or Turkey, where net earnings are used in estimation. Better opportunities for tax and social security avoidance or evasion may be one of the motivations for having an informal, rather than a formal, job. If this is the case, the estimated earnings premiums for Mexico probably overestimate the true net earnings premium for formal jobs.

Figure 2.A3.8. Formal earnings premium for an average employee

Ratio of monthly earnings of employees in formal jobs to that of employees in informal jobs



Note: Earnings refer to net earnings for Korea and Turkey and gross earnings for Mexico.

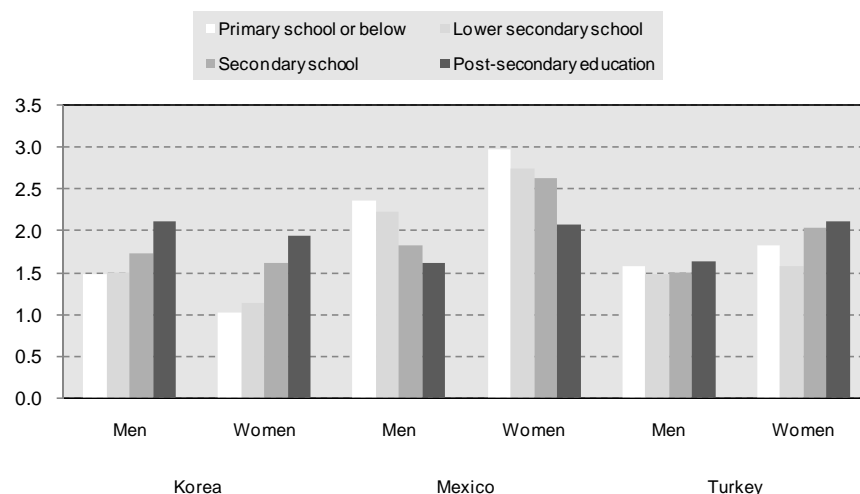
Source: OECD calculations using following data sources: Korea: Korean Labor and Income Panel Study, 2005; Mexico: Encuesta Nacional de Ingresos y Gastos de los Hogares, 2005; Turkey: Turkish Household Budget Survey, 2005.

Earnings premium for an average worker shown in Figure 2.A3.8 mask differences in the penalty for informal jobs for employees with different characteristics. Figure 2.A3.9 shows the ratio of formal to informal earnings for an average worker as education and experience increase. In Korea and, to a lesser extent, Turkey, the earnings penalty for informal jobs is highest for highly educated workers. There is no earnings penalty for women in Korea with primary school or lower secondary education working in informal jobs. In contrast, in Mexico the earnings penalty for informal jobs is highest for low-skilled workers with little experience, who are the most likely to be in informal jobs. In both Turkey and Mexico, the earnings penalty falls with increasing work experience, suggesting that older workers, who have a higher probability of being informal employees than prime-aged workers, face less of a penalty than would otherwise be the case.

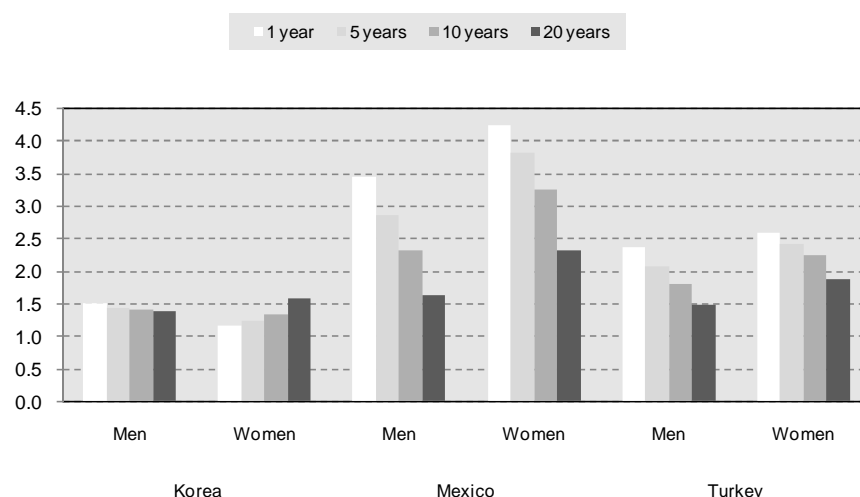
The results confirm previous findings for Mexico and Turkey that informal employees earn less than formal salaried workers with similar characteristics. Maloney (1999) finds that workers moving between informal and formal salaried jobs experience an increase in earnings. However, Maloney defines informal jobs as those in firms with less than six workers, rather than using social security affiliation as here, so the results are not completely comparable. Tansel (2000) finds that formal-informal earnings premiums of a similar magnitude to those in Figure 2.A3.8 for men in Turkey. Her estimated earnings premiums for women are substantially higher, although she warns that the equations for women are not well-estimated.

Figure 2.A3.9. Returns to education and experience in formal and informal jobs

a. Ratio of monthly earnings of employees in formal jobs to that of employees in informal jobs by education level



b. Ratio of monthly earnings of employees in formal jobs to that of employees in informal jobs by work experience



Note: Earnings refer to net earnings for Korea and Turkey and gross earnings for Mexico.

Source: OECD calculations using following data sources: Korea: Korean Labor and Income Panel Study, 2005; Mexico: Encuesta Nacional de Ingresos y Gastos de los Hogares, 2005; Turkey: Turkish Household Budget Survey, 2005.

Bibliography

- Acar, İ. and M. Merter (2004), “Türkiye’ de 1990 Sonrası Dönemde, Vergi Denetimi ve Vergi Denetiminde, Etkinlik Sorunu”, *Maliye Dergisi*, Vol. 147, pp. 5-27.
- Averett, S. (2001), “Moonlighting: Multiple Motives and Gender Differences”, *Applied Economics*, Vol. 33, No. 11, pp. 1391-1410.
- Bernabè, S. (2002), “Informal Employment in Countries in Transition: A Conceptual Framework”, CASEpaper No. 56, Centre for Analysis of Social Exclusion, London School of Economics, London.

- Bourguignon, F., M. Fournier and M. Gurgand (2007), “Selection Bias Corrections Based on the Multinomial Logit Model: Monte Carlo Comparisons” *Journal of Economic Surveys*, Vol. 21, No. 1, pp. 174-205.
- Breach, R., A. Martínez, V. Montenegro and F. Mateos (2006), “Medición de la Evasión Fiscal en México”, Centro De Economía Aplicada Y Políticas Públicas Del ITAM, Mexico City.
- Cazes, S. and A. Nesporova (2003), *Labour Markets in Transition: Balancing Flexibility and Security in Central and Eastern Europe*, International Labour Office, Geneva.
- Christie, E. and M. Holzner (2006), “What Explains Tax Evasion? An Empirical Assessment Based on European Data”, Vienna Institute for International Economic Studies Working Paper No. 40.
- Co, C., R. Gang and M. Yun (2005), “Self-Employment and Wage Earning in Hungary”, *Review of Development Economics*, Vol. 9, No. 2, pp. 150-165.
- Dahl, G. (2002), “Mobility and the Returns to Education: Testing a Roy Model with Multiple Markets”, *Econometrica*, Vol. 70, pp. 2367-2420.
- Davis, S. J., and M. Henrekson (2004), “Tax Effects on Work Activity, Industry Mix and Shadow Economy Size: Evidence from Rich Country Comparisons”, NBER Working Paper No. 10509, May. [<http://www.nber.org/papers/W10509.pdf>].
- Dubin J. and D. McFadden (1984), “An Econometric Analysis of Residential Electric Appliance Holdings and Consumption”, *Econometrica*, Vol. 52, pp. 345-362.
- Earle, J. and Sakova, Z. (2000), “Business Start-Ups or Disguised Unemployment? Evidence on the Character of Self-Employment in Transition Countries”, *Labour Economics*, Vol. 7, pp. 575-601.
- Elek, P., Á. Scharle and B. Szabó (2008), “An Estimation of Undeclared Employment in Hungary Based on Administrative Data”, background paper prepared as part of the World Bank Project: Hungary Undeclared Employment, Ministry of Finance, Government of Hungary, Budapest.
- European Commission (2007a), *Undeclared Work in the European Union*, Special Eurobarometer Report No. 284/wave 67.3, European Commission, Brussels.
- Gasparini, L. and L. Tornarolli (2007), “Labor Informality in Latin America and the Caribbean: Patterns and Trends from Household Survey Microdata”, Centro de Estudios Distributivos, Laborales y Sociales, Maestría en Economía Universidad Nacional de La Plata , Working Paper No. 0, February.
- Gong, X. and A. van Soest (2002), “Wage Differential and Mobility in Mexico’s Urban Labour Markets”, *Labour Economics*, No. 9, pp. 513-529.
- Guariglia, A. and B. Kim (2006), “The Dynamics of Moonlighting in Russia: What is Happening in the Russian Informal Economy?”, *Economics of Transition*, Vol. 14, No. 1, pp. 1-45.
- Hála, J., 2007, “Economically Dependent Workers in the Czech Republic”, EIROnline, available at <http://www.eurofound.europa.eu/eiro/2007/02/articles/cz0702089i.htm>.
- Hanousek, J. and F. Palda (2002), “Why People Evade Taxes in the Czech and Slovak Republic: A Tale of Twins”, CERGE-EI Discussion Paper No. 85, April.

- Henley, A., G. Reza Arabsheibani and F. Carneiro (2006), “On Defining and Measuring the Informal Sector”, World Bank Policy Research Working Paper No. 3866, World Bank, Washington.
- Köllő, J. (2007), “Two Notes on Unreported Employment and Wages”, unpublished draft prepared for the project *The Incentives to Work Formally*, World Bank and the Prime Minister’s Office, Hungary.
- Lee, L. (1983), “Generalized Econometric Models with Selectivity”, *Econometrica*, Vol. 51, pp. 507-512.
- Lehmann, F. and K. Terrell (2005), “The Puzzle of Self-employment: New Evidence from the Czech Republic”, paper presented at seminar at Faculdade de Ciências Económicas e Empresariais, Universidade Católica Portuguesa, Lisbon.
- Long, J. and J. Freese (2006), *Regression Models for Categorical Dependent Variables Using Stata*, Second Edition, Stata Press, College Station, Texas.
- Maloney, W. (1999), “Does Informality Imply Segregation in Urban Labor Markets? Evidence from Sectoral Transitions in Mexico”, *World Bank Economic Review*, Vol. 13, pp. 275-302.
- Marcouiller, D., V. Ruiz de Castilla and C. Woodruff (1995), “Formal Measures of the Informal Sector Wage Gap in Mexico, El Salvador, and Peru”, Boston College Working Papers in Economics, No. 294.
- Neumann, L. (2007), “Economically Dependent Workers in Hungary”, EIROnline, available at <http://www.eurofound.europa.eu/eiro/2007/04/articles/hu0704019i.htm>.
- OECD (2004a), *OECD Employment Outlook*, OECD, Paris.
- Perry, G., W. Maloney, O. Arias, P. Fajnzylber, A. Mason and J. Saavedra-Chanduvi (2007), *Informality: Exit and Exclusion*, World Bank, Washington.
- Sarzalska, M. and A. Szydłowski (2007), “Labour in Non-Observed Economy”, in A. Baranowska, M. Bukowski, M. Bober, P. Lewandowski, I. Magda, M. Sarzalska, A. Szydłowski and J. Zawistowski, *Employment in Poland 2006: Productivity For Jobs*, Institute for Structural Research, Ministry of Labour and Social Policy of Poland, pp. 163-199.
- Sklenář, P. and I. Burger (2006), “Impact of the Slovak Tax Reforms on Firms’ Tax Evasion: A Comparative Study of the Czech and Slovak Republics”, unpublished paper available at http://www.cerge-ei.cz/pdf/gdn/RRCV_33_paper_01.pdf.
- Stănculescu, M. (2005), “Working Conditions in the Informal Sector”, *South-East Europe Review*, No. 3, pp. 79-93.
- Tansel, A. (2000), “Wage Earners, Self-Employment and Gender in the Informal Sector in Turkey”, Policy Research Report on Gender and Development, Working Paper Series No. 24, World Bank, Washington.
- Turkstat (2000), *Survey of Employment in Small and Unincorporated Enterprises*, Turkish Statistical Institute.
- World Bank (2006), *Turkey Labour Market Study*, Report No. 33254-TR, World Bank, Washington.