

Chapter 2

The Determinants of Tax Evasion: A Cross-Country Study

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Abstract The aim of this study is to build on the work of Riahi-Belkaoui (J Int Account Audit Tax 13: 135–143, 2004) and systematically examine on a cross-country basis, many of the key determinants of tax evasion identified by Jackson and Milliron (J Account Literat 5: 125–165, 1986). Based on data for 45 countries, the regression results show that non-economic determinants have the strongest impact on tax evasion. In particular, complexity is the most important determinant of tax evasion. Other important determinants of tax evasion are education, income source, fairness and tax morale. Overall, the regression results indicate that the lower the level of complexity and the higher the level of education, services income source, fairness and tax morale, the lower is the level of tax evasion. The findings are robust to various cross-country control variables, an alternative measure of tax evasion and several interactions.

2.1 Introduction

Tax evasion has been the subject of a great deal of academic research in most developed countries over a long period of time (e.g., Jackson and Milliron 1986; Long and Swingen 1991; Cuccia 1994; Andreoni et al. 1998; Richardson and Sawyer 2001). However, little research has investigated the underlying determinants of tax evasion on a cross-country basis. This is disappointing because Andreoni et al. (1998) and Tan and Sawyer (2003) have argued there is a need for international and cross-country comparisons on this topic. Riahi-Belkaoui (2004) examined the association between several determinants of tax morale and tax evasion, employing data from 30 countries. He provides evidence which shows that tax evasion across countries is negatively associated with the level of economic freedom, the level of importance of the equity market, the effectiveness of competition laws and high moral norms. Notwithstanding,

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Riahi-Belkaoui (2004) only explored the broad link between tax evasion and some selected determinants of tax morale across countries. However, tax morale is one of many potential determinants of tax evasion. The first major tax evasion literature review by Jackson and Milliron (1986) established 14 key determinants of tax evasion. These include: age, gender, education and occupation status ('demographic' determinants), income level, income source, marginal tax rates, sanctions and probability of detection ('economic' determinants), and complexity, fairness, revenue authority contact, compliant peers and ethics or tax morale ('behavioral' determinants).

The aim of this study is to build on the work of Riahi-Belkaoui (2004) and systematically investigate on a cross-country basis, many of the key determinants of tax evasion identified by Jackson and Milliron (1986). When the determinants of tax evasion are clearly identified in a systematic way by empirical analysis, appropriate policy conclusions can then be drawn, and policymakers are then in a position to design and implement measures to control and restrain its damaging effects. Based on data for 45 countries, the regression results show that non-economic determinants have the strongest impact on tax evasion. In particular, complexity is the main determinant of tax evasion. Other significant determinants of tax evasion are education, income source, fairness and tax morale. Overall, the results of the regressions show that the lower the level of complexity and the higher the level of education, services income source, fairness and tax morale, the lower is the level of tax evasion. The findings are robust to several cross-country control variables, another tax evasion measure and various interactions.

This study makes several important contributions. First, it builds on the original work of Riahi-Belkaoui (2004) and systematically examines many of the key demographic, economic and behavioral determinants of tax evasion. It thus fills a gap in the literature by exploring the major determinants of tax evasion across countries. Second, it shows that 'mixed' models of tax evasion that include demographic, economic and behavioral tax evasion determinants offer valuable insights into tax evasion across countries. Third, it provides a sound empirical framework for further research on tax evasion internationally. Finally, it presents a key summary of multiple data sources for future international tax research.

The rest of this chapter is organized into the following sections. Section 2.2 reviews the major determinants of tax evasion as discussed in the literature and develops hypotheses. Section 2.3 describes the research design. Section 2.4 reports the empirical results. Section 2.5 concludes this chapter.

2.2 Major Determinants of Tax Evasion: Theory and Hypotheses

Why do taxpayers in some countries evade paying income taxes more frequently than taxpayers in other countries? This question can be answered by considering the major determinants of tax evasion previously identified. Jackson and Milliron (1986) provide the first detailed review on this topic, and find 14 key demographic,

economic and behavioral determinants of tax evasion. This study considers the impact of ten of these: age, gender, education, income level, income source, marginal tax rates, fairness, complexity, revenue authority contact and tax morale.¹

The chronological age of taxpayers is one of the main determinants of tax evasion (Jackson and Milliron 1986). Studies find that older taxpayers are generally more compliant than younger taxpayers (Tittle 1980; Witte and Woodbury 1985; Dubin and Wilde 1988; Feinstein 1991; Hanno and Violette 1996). Tittle (1980) explains the relationship between age and tax deviance as attributable to lifecycle variations and generational differences. Younger taxpayers are more risk-seeking, less sensitive to penalties (a lifecycle variation), and reflect the social and psychological differences related to the period in which they are raised (a generational difference).

Gender of the taxpayer has been revealed to be significant in past studies. Vogel (1974) and Mason and Calvin (1978) show that the compliance levels of female taxpayers are higher than for males. Jackson and Milliron (1986) argue that this compliance gap is shrinking over time as new generations of liberated women emerge. Other studies find different outcomes (Brooks and Doob 1990; Collins et al. 1992).

Education attainment is one more key determinant. Jackson and Milliron (1986) claim that education has two elements: the general degree of fiscal knowledge and the specific degree of knowledge about tax evasion opportunities. They claim that by enhancing the level of general fiscal knowledge, tax compliance improves due to more positive perceptions about taxation. Increased knowledge of tax evasion opportunities has a negative impact on tax compliance as it aids non-compliance (Jackson and Milliron 1986). Song and Yarbrough (1978) and Witte and Woodbury (1985) find a negative association between general education and tax evasion.

Income level is another important determinant. It usually refers to the adjusted gross income or total positive income of a taxpayer (Jackson and Milliron 1986). Mason and Lowry (1981) and Witte and Woodbury (1983) find that middle income taxpayers are generally compliant with tax laws, while low income level taxpayers and high income level taxpayers are relatively non-compliant with tax laws. Richardson and Sawyer (2001) show however that overall findings remain mixed. Income source usually refers to the type or nature of the taxpayer's income (Jackson and Milliron 1986). Schmolder's (1970) shows that when a large part of a country's labor force is engaged in agriculture and small trading, income and profit taxation is unsuccessful. Wallschutzky (1984) finds that the greatest opportunity to evade income tax exists from those who derive their income from agriculture, independent trades or self-employment, whereas the least opportunity exists for those taxpayers whose source of income is dependent on wages or salaries subject to withholding, such as from the services sector.

¹Occupation status, sanctions, probability of detection and compliant peers are not considered due to the lack of available cross-country data for these determinants.

Marginal tax rates is one more key tax evasion determinant, but empirical results are mixed. Clotfelter (1983) and Mason and Calvin (1984) show a positive association between marginal tax rates and tax evasion, while Feinstein (1991) and Christian and Gupta (1993) show a negative association between them. Richardson and Sawyer (2001) claim that not controlling for the correlation between marginal tax rates and income level may cause this inconsistency. They cite the work of Feinstein (1991) who tests an economic model of tax evasion using pooled data. By pooling data from years in which different tax schedules were operating in the US, Feinstein (1991) is able to separate-out the effects of marginal tax rates and income level. The results show that higher marginal tax rates reduces tax evasion.²

It is generally accepted that perceptions about tax fairness and tax evasion are related (Jackson and Milliron 1986). The importance of taxpayers' 'perceptions' of tax fairness should not be underestimated (Richardson and Sawyer 2001). Spicer (1974) finds a significant negative association between these, while Song and Yarbrough (1978) find a significant negative association, with 75 % of subjects stating that 'ability to pay' was more significant than 'benefits.' Hite and Roberts (1992) also find that tax fairness was significantly associated with perceptions of an improved tax system, and that tax fairness and tax evasion are negatively related.

Because tax systems have become more complex over time in many developed countries around the world, complexity has become a major tax evasion determinant (Jackson and Milliron 1986; Richardson and Sawyer 2001). Previous research, utilizing archival data (Clotfelter 1983; Long and Swingen 1988) and survey data (Vogel 1974; Milliron and Toy 1988; Collins et al. 1992) methodologies provide strong empirical evidence to show that complexity has a positive association with tax evasion. Revenue authority contact is another important determinant. Spicer and Lundstedt (1976) find that taxpayers' direct experience with the revenue authority is positively associated to increased tax resistance and tax evasion. Research by Klepper and Nagin (1989a, b) and Brooks and Doob (1990) also supports this view. In contrast, by reducing the level of contact between taxpayers and public tax officials through a self-assessment tax system, this reduces the possibility of widespread tax resistance and tax evasion (Tanzi 2000; Sarker 2003; Torgler and Murphy 2004).

While tax morale is a vague concept (Jackson and Milliron 1986), it describes the morale principles or values individuals hold about paying taxes (Torgler and Murphy 2004). Research by Spicer (1974), Spicer and Lundstedt (1976) and Tittle (1980) finds that the tax morale of individuals is negatively associated with tax evasion. Torgler (2003a) also shows that tax morale and tax evasion are negatively correlated. Moreover, Riahi-Belkaoui (2004) also provides evidence which indicates that tax evasion across countries is negatively related to selected determinants of tax morale.

²In fact, by combining data from various countries with different tax schedules, this present study is able to separate-out the effects of marginal tax rates and income level.

Following from the above discussion, it is hypothesized that:

- H1** All else equal, there is a significant negative association between older taxpayers and tax evasion in a country.
- H2** All else equal, there is a significant negative association between female taxpayers and tax evasion in a country.
- H3** All else equal, there is a significant negative association between the general education knowledge of taxpayers and tax evasion in a country.
- H4** All else equal, there is a significant positive association between low income level and high income level taxpayers, and tax evasion in a country.
- H5** All else equal, there is a significant positive (negative) association between income derived from agriculture (services) and tax evasion in a country.
- H6** All else equal, there is a significant negative association between high marginal tax rates and tax evasion in a country.
- H7** All else equal, there is a significant negative association between perceptions of fairness and tax evasion in a country.
- H8** All else equal, there is a significant positive association between complexity and tax evasion in a country.
- H9** All else equal, there is a significant negative association between self-assessment and tax evasion in a country.
- H10** All else equal, there is a significant negative association between tax morale and tax evasion in a country.

2.3 Research Design

2.3.1 Data Description

Data for this study are collected from a wide range of sources. The Appendix presents a comprehensive description of data used to measure the different variables used and their various sources. To achieve robustness, both objective and survey measures of the variables are employed. La Porta et al. (1999, 234) argue that this is important for subjective assessments of variables, since “within the same survey responses” to different questions may simply reflect some general underlying sentiment toward a country. When different surveys use diverse respondents, this potential risk is reduced. A brief discussion of the relevant variables used now follows.

2.3.2 Dependent Variable

The dependent variable in this study is represented by tax evasion (TEVA). Its measure is based on a country survey rating of tax evasion collected by the World Economic Forum (WEF) and published in the *Global Competitiveness Report*

(World Economic Forum 2002, 2003, 2004). While the *Global Competitiveness Report* is a valuable source of cross-country tax evasion data, using one question in this study to measure tax evasion raises concerns about reliability due to measurement error. However, measurement error can be minimized by using average data for several years (Fisman and Gatti 2002; You and Khagram 2005).³ Thus, averaged WEF tax evasion data for several years (from 2002–2004) are used as the dependent variable instead of data for a single year to reduce the possibility of measurement error.

2.3.3 Independent Variables

The independent variables are denoted in this study by age (AGE), gender (GEND), education (EDUC), income level (ILEVEL): low income level (LILEVEL) and high income level (HILEVEL), income source (ISOURCE): agriculture income source (AISOURCE) and services income source (SISOURCE), marginal tax rates (MTR), fairness (FAIR), complexity (COMP), self-assessment (SELFA) and tax morale (MORALE). Where possible, data for these independent variables are computed as three-year averages, covering 2002–2004 so as to be consistent with the measurement of the dependent variable and to reduce the possibility of measurement error.

AGE (percentage of the population greater than 65)⁴ and GEND (percentage of the population that is female) are both measured from data collected by the World Bank and published in the *2005 World Development Indicators* (World Bank 2005a). EDUC is measured by a country survey rating of the quality of a country's general education system. Data are collected by the Institute of Management Development (IMD) and published in the *World Competitiveness Year Book* (Institute of Management Development 2002, 2003, 2004). LILEVEL is measured as the proportion of household income going to the lowest 20 % of households, while HILEVEL is measured as the proportion of household income going to the highest 20 % of households. Data for each of these variables are taken from the *World Competitiveness Year Book* (Institute of Management Development 2002, 2003, 2004). AISOU is measured as the percentage of employment in the agricultural sector, while SISOU is measured as the percentage of employment in the services sector. Data for these variables are gathered from the *World Competitiveness Year Book* (Institute of Management Development 2002, 2003, 2004). MTR is measured by the top marginal income tax rate for individuals. Data for this variable are collected from the *2005 World Development Indicators*

³Assuming that measurement error has a normal distribution with a mean of zero and a variance of σ^2 , averaging of N observations will decrease the variance to σ^2/N .

⁴The age of '65' has been used as the cut-off point to represent older tax payers in tax evasion research by Clotfelter (1983) and Witte and Woodbury (1985), for example.

(World Bank 2005a). FAIR is measured by a country survey rating of the fairness of tax policy. Data for this variable are gathered by the Institute of Industrial Policy Studies (IPS) and published in the *National Competitiveness Report* (Institute for Industrial Policy Studies 2002). COMP is measured by a country survey rating of complexity in the tax system. Data for this variable are collected from the *Global Competitiveness Report* (World Economic Forum 2003, 2004). SELFA is measured by a dummy variable (1 if a country has a self-assessment tax system, 0 otherwise) based on information provided by the Organisation for Economic Co-operation and Development (2002), PricewaterhouseCoopers (2004) and KPMG (2003). Finally, in line with Torgler (2003a, b, 2005) and Torgler and Murphy (2004), MORALE is measured by a country survey rating of tax cheating. Data for this variable are gathered from the World Values Survey (Inglehart 2003; Inglehart et al. 2004).

2.3.4 Control Variables

Because this study is undertaken at the country level of analysis, it is necessary to control for potential cross-country effects. Thus, several control variables relating to economic, political and cultural factors are included in this study. The level of economic development (EDEV) can affect tax evasion across countries (Quirk 1997; Alm and Martinez-Vazquez 2003). Quirk (1997) claims that countries in the early stages of economic development are especially prone to tax evasion. Studies of tax evasion carried out in developing countries show that it is not uncommon for 50 % or more of potential income tax to remain uncollected due to tax evasion (Gillis 1989; Richupan 1984). Das-Gupta et al. (1995) find that in India, the amount of income not subject to tax is estimated to be more than 200 % of the assessed income. EDEV is measured in this study as the natural log of GDP per capita, which is collected from the 2005 *World Development Indicators* (World Bank 2005a).

Political institutions based on notions of democracy (DEMOC) can also influence tax evasion levels across countries (Pommerehne and Weck-Hannemann 1996; Alm et al. 1999). As the taxpaying public is allowed to directly participate in the democratic political process via the right to vote on tax issues, politicians are more accountable and transparent so they must take taxpayer preferences into account. This improves taxpayer confidence and can reduce country tax evasion levels (Feld and Tyran 2002; Torgler et al. 2003). DEMOC is measured based on the political rights index developed by Freedom House (2005).

Culture (CULT) and religion (RELIG) can also affect tax evasion across countries. Research by Tittle (1980) in the US finds that cultural and religious background is associated with tax evasion. Focus group research by Coleman and Freeman (1997) in Australia also shows that cultural and religious background influences tax compliance. A cross-country survey study of tax evasion by

Chan et al. (2000) in Hong Kong and the US shows that cultural background affects tax evasion. CULT is measured in this study by ethnolinguistic fractionalization, collected from Mauro (1995), while RELIG is measured by the percentages of Protestants (PROT), Catholics (CATH), Muslims (MUSL) and other denominations (OTHRD), gathered from La Porta et al. (1999).

Additional controls for legal system (LEGAL), colonial heritage (COLONY) and regional developing countries (REGION) are also included in this study. This considers whether tax evasion is driven by differences between common law system countries versus civil law system countries, colonial countries versus non-colonial countries and regional developing countries versus developed countries (Treisman 2000; Brunetti and Weader 2003). Thus, dummy variables for LEGAL, COLONY and REGION are also included in this study. LEGAL is measured by the common law system country classification of La Porta et al. (1999). COLONY is measured by the colonial heritage country classification of Barro and Lee (1994). REGION is measured by the developing country grouping classifications of: East Asia and Pacific region (EAPR), Europe and Central Asia region (EUCAR) and Latin America and the Caribbean region (LACR), collected from the *World Bank Group—Data and Statistics* (World Bank 2005b).

2.3.5 Base Regression Model

To examine the determinants of tax evasion, the following base ordinary least squares (OLS) regression equation is estimated:

$$\begin{aligned} TEVA_i = & \alpha_0 + \beta_1 AGE_i + \beta_2 GEND_i + \beta_3 EDUC_i + \beta_4 LILEVEL_i + \beta_5 HILEVEL_i + \beta_6 AISOURCE_i \\ & + \beta_7 SISOURCE_i + \beta_8 MTR_i + \beta_9 FAIR_i + \beta_{10} COMP_i + \beta_{11} SELFA_i + \beta_{12} MORALE_i + \varepsilon_i \end{aligned} \quad (6.1)$$

where: $TEVA_i$ is the tax evasion score for country i , AGE_i is the percentage of the population greater than 65 for country i , $GEND_i$ is the percentage of the population that is female for country i , $EDUC$ is the general education score for country i , $LILEVEL$ is the proportion of household income going to the lowest 20 % of households for country i , $HILEVEL$ is the proportion of household income going to the highest 20 % of households for country i , $AISOURCE_i$ is the percentage of employment in the agricultural sector for country i , $SISOURCE_i$ is the percentage of employment in the services sector for country i , MTR_i is the top marginal income tax rate for individuals of country i , $FAIR_i$ is the fairness score for country i , $COMP_i$ is the complexity score for country i , $SELFA_i$ is a dummy variable represented by 1 if country i has a self-assessment tax system, 0 otherwise, $MORALE_i$ is the tax morale score for country i and ε_i is the error term for country i .

2.4 Results

2.4.1 Descriptive Statistics and Correlation Results

Table 2.1 reports descriptive statistics for the variables used in this study from a cross-section of 45 countries.⁵ The Pearson correlation matrix for this study's dependent and independent variables is presented in Table 2.2.

The Pearson correlation matrix shows that there are some significant associations between tax evasion and the independent variables. For example, there are fairly high correlations ($p < 0.01$) between TEVA and FAIR ($r = -0.72$), TEVA and COMP ($r = 0.68$), TEVA and SISOURCE ($r = -0.61$), TEVA and EDUC ($r = -0.53$) and TEVA and AISOURCE ($r = 0.51$). Correlations are also found ($p < 0.05$) between TEVA and AGE ($r = -0.29$), TEVA and SELFA ($r = -0.27$) and TEVA and MORALE (-0.24). However, no correlations are found between TEVA and GEND, TEVA and LILEVEL, TEVA and HILEVEL or TEVA and MTR.⁶

These univariate results provide some preliminary support for H1, H3, H5, H7, H8, H9 and H10. Moreover, these results also show that behavioral and demographic variables have the strongest impact on tax evasion as compared to economic variables. This is an interesting finding which shows that non-economic variables are fundamental and should be examined along with economic variables in 'mixed models' of tax evasion across countries.

2.4.2 Regression Results

Table 2.3 reports the results of the regression analysis for the base regression model (Column 1), and includes several control variables (Columns 2–8) to consider potential cross-country effects.

⁵The 45 countries for which data are available for the study are represented by: Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China (PRC), Colombia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Italy, Japan, Korea (South), Mexico, Netherlands, New Zealand, Norway, Philippines, Poland, Portugal, Russia, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Kingdom, United States and Venezuela.

⁶Significant correlations are also found between tax evasion and some of the control variables. For instance, there are reasonably high correlations ($p < 0.01$) between TEVA and EDEV ($r = -0.63$), TEVA and COLONY ($r = -0.48$) and TEVA and LEGAL ($r = -0.44$). Correlations are also observed ($p < 0.05$) between TEVA and PROT ($r = -0.29$), TEVA and EUCAR ($r = 0.29$) and TEVA and LACR ($r = 0.28$). Finally, some marginal correlations are also detected ($p < 0.10$) between TEVA and EAPR ($r = 0.22$) and TEVA and CATH ($r = 0.21$). No significant correlations are found between TEVA and DEMOC, CULT, MUSL or OTHRD.

Table 2.1 Descriptive statistics of the variables

Variable	Number	Mean	Std. Dev.	Minimum	Maximum
TEVA	45	4.33	1.13	1.80	6.10
AGE	45	11.48	4.58	3.93	18.37
GEND	45	0.51	0.01	0.48	0.53
EDUC	45	5.20	1.50	2.30	8.41
ILEVEL: LILEVEL	45	6.84	2.23	2.33	10.87
ILEVEL: HILEVEL	45	43.92	8.26	32.53	65.37
ISOURCE: AISOURCE	45	11.94	14.31	0.30	62.45
ISOURCE: SISOURCE	45	59.62	14.99	23.10	84.27
MTR	45	0.41	0.10	0.13	0.59
FAIR	45	5.43	1.56	1.30	8.00
COMP	45	4.72	1.11	1.55	6.35
SELFA	45	0.47	0.50	0	1
MORALE	45	8.31	0.88	4.82	9.82
EDEV	45	9.19	1.20	6.14	10.80
DEMOC	45	1.82	1.43	1.00	7.00
CULT	44	0.21	0.22	0.00	0.83
RELIG: PROT [†]	45	19.11	29.24	0	97.80
RELIG: CATH	45	40.44	39.24	0	96.90
RELIG: MUSL	45	5.43	16.71	0	99.20
RELIG: OTHRD	45	35.02	34.13	0.70	98.50
LEGAL	45	0.27	0.45	0	1
COLONY	45	0.24	0.43	0	1
REGION: EAPR	45	0.10	0.31	0	1
REGION: EUCAR	45	0.12	0.33	0	1
REGION: LACR	45	0.12	0.33	0	1

Variable definitions *TEVA* tax evasion, *AGE* age, *GEND* gender, *EDUC* education, *ILEVEL* income level (*LILEVEL* low income level and *HILEVEL* high income level), *ISOURCE* income source (*AISOURCE* agriculture income source and *SISOURCE* services income source), *MTR* marginal tax rates, *FAIR* fairness, *COMP* complexity, *SELFA* revenue authority contact, *MORALE* morale, *EDEV* economic development, *DEMOC* democracy, *CULT* culture, *RELIG* religion (*PROT* protestant, *CATH* catholic, *MUSL* muslim and *OTHRD* other denomination), *LEGAL* legal system, *COLONY* colonial heritage and *REGION* regional developing countries (*EAPR* East Asia and Pacific region, *EUCAR* Europe and Central Asia region and *LACR* Latin America and Caribbean region)

[†]Reference category only

Table 2.3 (Column 1) shows that the base regression model is significant at the $p < 0.01$ level (F statistic = 13.20), while the adjusted R^2 for this regression model is 0.80. In terms of the significance of the regression coefficients summarized in Table 2.3 (Column 1), the results show that *COMP* is the most important determinant of tax evasion ($p < 0.01$) across countries, thus H8 is supported by the results. Where a country's tax system has a high level of complexity, this increases the incidence of tax evasion. This result is consistent with prior research

Table 2.2 Pearson correlation matrix for dependent and independent variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. TEVA	1												
2. AGE	-0.29**	1											
3. GEND	0.15	0.44***	1										
4. EDUC	-0.53***	0.26**	-0.16	1									
5. LILEVEL	0.01	0.62***	0.07	0.27**	1								
6. HILEVEL	0.16	-0.72***	-0.06	-0.38***	-0.82***	1							
7. AISOURCE	0.51***	-0.60***	-0.38***	-0.33***	-0.15	0.30**	1						
8. SISOURCE	-0.61***	0.49***	0.07	0.34***	0.15	-0.36***	-0.73***	1					
9. MTR	-0.16	0.51***	-0.08	0.23*	0.52***	-0.58***	-0.29**	0.26**	1				
10. FAIR	-0.72***	0.45***	-0.03	0.55***	0.21*	-0.34**	-0.54***	0.49***	0.33**	1			
11. COMP	0.68***	0.08	0.21*	-0.38***	0.16	-0.10	0.13	-0.20*	0.26**	-0.49***	1		
12. SELFA	-0.27**	-0.28**	-0.06	-0.16	-0.29**	0.33**	0.18*	-0.24**	-0.22*	-0.25**	0.10	1	
13. MORALE	-0.24**	-0.08	-0.38***	-0.06	0.22**	-0.31**	0.01	0.18	0.34***	0.06	-0.04	0.03	1

Variable definitions TEVA tax evasion, AGE age, GEND gender, EDUC education, LILEVEL low income level and HILEVEL high income level, AISOURCE income source (AISOURCE agriculture income source and SISOURCE services income source), MTR marginal tax rates, FAIR fairness, COMP complexity, SELFA revenue authority contact, MORALE morale, EDEV economic development, DEMOC democracy, CULT culture, RELIG religion (PROT protestant, CATH catholic, MUSL muslim and OTHERD other denomination), LEGAL legal system, COLONY colonial heritage and REGION regional developing countries (EAPR East Asia and Pacific region, EU/CAR Europe and Central Asia region and LACR Latin America and Caribbean region)

N = 45

*, **, *** Significant at 0.10, 0.05 and 0.01 levels, respectively

Table 2.3 Regression results (dependent variable: tax evasion, WEF)

	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)
CONSTANT	10.263 (1.185)	13.321 (1.379)	8.833 (1.001)	13.037 (1.390)	14.063 (1.433)	14.995 (1.664)	14.995 (1.664)	13.482 (1.395)
AGE	-0.256 (-1.331)	-0.201 (-0.967)	-0.270 (-1.397)	-0.313 (-1.500)*	-0.181 (-0.795)	-0.237 (-1.263)	-0.237 (-1.263)	-0.185 (-0.877)
GEND	-0.008 (-0.065)	-0.031 (-0.234)	-0.010 (-0.076)	-0.024 (-0.179)	-0.071 (-0.488)	-0.075 (-0.562)	-0.075 (-0.562)	-0.056 (-0.388)
EDUC	-0.205 (-1.877)**	-0.192 (-1.723)**	-0.214 (-1.945)**	-0.206 (-1.721)**	-0.217 (-1.967)**	-0.142 (-1.248)*	-0.142 (-1.248)*	-0.190 (-1.637)**
LILEVEL	0.047 (0.212)	0.009 (0.039)	0.078 (0.349)	0.025 (0.100)	0.106 (0.460)	0.041 (0.185)	0.041 (0.185)	0.018 (0.075)
HILEVEL	-0.248 (-0.859)	-0.292 (-0.982)	-0.242 (-0.837)	-0.295 (-0.952)	-0.229 (-0.785)	-0.305 (-1.074)	-0.305 (-1.074)	-0.284 (-0.831)
AISOURCE	0.012 (0.079)	0.112 (0.549)	0.042 (-0.269)	0.004 (0.022)	0.014 (0.090)	0.074 (0.480)	0.074 (0.480)	0.069 (0.396)
SISOURCE	-0.301 (-2.429)**	-0.265 (-1.978)**	-0.285 (-2.372)**	-0.351 (-2.435)**	-0.319 (-2.318)**	-0.337 (-2.732)**	-0.337 (-2.732)**	-0.330 (-2.343)**
MTR	-0.047 (-0.416)	-0.023 (-0.198)	-0.008 (-0.069)	-0.017 (-0.132)	-0.114 (-0.744)	-0.078 (-0.698)	-0.078 (-0.698)	-0.026 (-0.194)
FAIR	-0.212 (-1.820)**	-0.202 (-1.708)**	-0.203 (-1.736)**	-0.235 (-1.876)**	-0.246 (-2.035)**	-0.219 (-1.924)**	-0.219 (-1.924)**	-0.218 (-1.772)**
COMP	0.438 (4.057) ***	0.438 (4.017) ***	0.442 (4.078) ***	0.405 (3.363) ***	0.416 (3.751) ***	0.427 (4.046) ***	0.427 (4.046) ***	0.418 (3.344) ***
SELFA	-0.106 (-1.286)	-0.108 (-1.294)	-0.100 (-1.198)	-0.093 (-1.044)	-0.079 (-0.857)	-0.042 (-0.466)	-0.042 (-0.466)	-0.096 (-1.102)
MORALE	-0.245 (-2.318)**	-0.241 (-2.259)**	-0.269 (-2.424)**	-0.251 (-2.378)**	-0.222 (-1.861)**	-0.228 (-2.199)**	-0.228 (-2.199)**	-0.258 (-2.316)**
EDEV		-0.203 (-0.744)						

(continued)

Table 2.3 (continued)

	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)
DEMOC			-0.097 (-0.925)					
CULT				-0.134 (-1.146)				
RELIG					0.077 (0.521)			
PROT [†]					-0.024			
CATH					(-0.208)			
MUSL					-0.085			
OTHRD					(-0.481)			
LEGAL						-0.162 (-1.509)		
COLONY							-0.162 (-1.509)	
REGION								0.088 (0.761)
EAPR								0.077 (0.700)
EUCAR								0.103 (0.747)
LACR								
N	45	45	44	45	45	45	45	45
R ² (adjusted)	0.80	0.80	0.80	0.78	0.80	0.81	0.81	0.78
F statistic	13.20***	12.01***	12.18***	10.74***	10.60***	12.98***	12.98***	9.84***

Variable definitions: TEVA tax evasion, AGE age, GEND gender, EDUC education, ILEVEL income level (LILEVEL low income level and HILEVEL high income level), ISOURCE income source (AISOURCE agriculture income source and SISOURCE services income source), MTR marginal tax rates, FAIR fairness, COMP complexity, SELFA revenue authority contact, MORALE morale, EDEV economic development, DEMOC democracy, CULT culture, RELIG religion (PROT protestant, CATH catholic, MUSL muslim and OTHRD other denomination), LEGAL legal system, COLONY colonial heritage and REGION regional developing countries (EAPR East Asia and Pacific region, EUCAR Europe and Central Asia region and LACR Latin America and Caribbean region), t-statistics are in parentheses. Standard errors are corrected for heteroskedasticity

* **, *** Significant at 0.10, 0.05 and 0.01 levels, respectively

[†]Reference category only

(Vogel 1974; Clotfelter 1983; Long and Swingen 1988; Milliron and Toy 1988; Collins et al. 1992).

EDUC, SISOURCE, FAIR and MORALE represent the next most important determinants of tax evasion ($p < 0.05$) across countries as reported in Table 2.3 (Column 1). For EDUC, H3 is supported by the results. Where a country has a good general education system, this helps to reduce the level of tax evasion. This result is consistent with theory (Song and Yarbrough 1978; Witte and Woodbury 1985). For ISOURCE, only SISOURCE is significant, thus H5 is partially confirmed by the results. Where a country has income that is subject to withholding (e.g. services employment income), this can significantly reduce the level of tax evasion in a country (Schmolders 1970; Wallschutzky 1984). Concerning FAIR, H7 is also corroborated by the results. Where taxpayers perceive that their country's tax policy is fair, this helps to reduce the level of tax evasion. This result is also consistent with theory (Spicer 1974; Song and Yarbrough 1978; Hite and Roberts 1992). For MORALE, H10 is also confirmed by the results. Where tax morale in a country is high, this assists in reducing the level of tax evasion. This confirms Riahi-Belkaoui's (2004) findings, but using a direct measure of tax morale in this instance. Finally, for AGE, GEND, LILEVEL, HILEVEL, MTR and SELFA, no significant relationships are found with tax evasion. Therefore, H1, H2, H4, H6 and H9 are not supported by the results on a multivariate basis.

Consistent with the univariate findings reported in Table 2.2, the behavioral and demographic variables in comparison with the economic variables are found to have the strongest impact on tax evasion in the base regression model. These results show that by including not only economic variables, but also behavioral and demographic variables into mixed models of tax evasion, this provides the most compelling results. This supports the views of Cuccia (1994) and Cummings et al. (2001) who argue that by combining economic and non-economic views of tax evasion, this can lead to a better understanding of the subject.

Table 2.3 (Columns 2–8) present the results of the supplementary regression models, including some cross-country control variables. The results show that the supplementary regression models are all significant at the $p < 0.01$ level (F statistics ranging from 9.84 to 12.98), while the adjusted R^2 's for these regression models (i.e. around 0.80) are relatively consistent with the adjusted R^2 for the base regression model (Column 1). This indicates that the explanatory power of the base regression model is not improved by the inclusion of cross-country control variables.

In the supplementary regression models, COMP ($p < 0.01$) remains the key determinant of tax evasion, while its regression coefficient is relatively stable across all of the supplementary regression models. SISOURCE, FAIR, MORALE and EDUC remain the next most significant determinants of tax evasion ($p < 0.05$, but EDUC does at times fall to $p < 0.10$ in some of the regressions) and have relatively stable regression coefficients. Non-economic variables are again shown to have the strongest impact on tax evasion compared to economic variables across the supplementary regressions.

For the significance of the regression coefficients of the cross-country control variables in Table 2.3 (Columns 2–8), none of the control variables relating to EDEV, DEMOC, CULT, RELIG, LEGAL, COLONY, REGION are found to be significantly related to tax evasion. This shows that the base regression model results in Table 2.3 (Column 1) described above remain robust and are not driven by cross-country differences in the levels of economic development, democracy, culture, religion, type of legal system, colonial heritage and regional developing countries.

In general, the supplementary regression model results are comparable to the base regression model results presented earlier. Thus, this study's findings, after controlling for a broad range of cross-country variables, appear to be robust.

2.4.3 Sensitivity Analysis

The regression analysis so far has made use of a specific measure of tax evasion collected by the World Economic Forum (2002, 2003, 2004). This raises the question of whether the results are characteristics of this data as tax evasion is not easily observable. The robustness of the results is tested by using an alternative measure of tax evasion based on a country survey rating gathered by the Institute of Management Development (2002, 2003, 2004). Data for this measure of tax evasion are computed as three-year averages, covering the 2002–2004 years, to reduce the possibility of measurement error. The IMD tax evasion measure has a high correlation ($r = 0.95$; $p < 0.01$) with its WEF complement, suggesting that this measure of tax evasion is sound. The results of this sensitivity analysis are summarized in Table 2.4.

The results of the sensitivity analysis using the Institute of Management Development (2002, 2003, 2004) measure of tax evasion show that the regression coefficients of COMP, EDUC, SISOURCE, FAIR and MORALE are significant and remain quite stable across the various regression model specifications which are reported in Table 2.4 (Columns 1–8). This is consistent with the earlier regression results using the WEF measure of tax evasion. However, the level of significance of some of these independent variables changes slightly when using the IMD tax evasion measure.

COMP is still the most significant determinant of tax evasion across countries ($p < 0.01$). This is followed by EDUC ($p < 0.05$ or greater) and MORALE (usually $p < 0.05$). SISOURCE and FAIR also have significant relationships with tax evasion ($p < 0.10$ or greater). For AGE, GEND, LILEVEL, HILEVEL, AISOURCE, MTR and SELFA, no significant associations are found with tax evasion. Again, non-economic variables are found to have the strongest impact on tax evasion. Finally, for the cross-country control variables of EDEV, DEMOC, CULT, RELIG, LEGAL, COLONY, REGION, none of these variables are found to have a significant relationship with tax evasion.

Table 2.4 Regression results (dependent variable: tax evasion, IMD)

	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)
CONSTANT	15.354 (1.108)	17.775 (1.140)	15.039 (1.047)	18.546 (1.287)	19.966 (1.373)	18.511 (1.236)	18.511 (1.236)	20.949 (1.366)
AGE	-0.154 (-0.737)	-0.125 (-0.547)	-0.157 (-0.730)	-0.203 (-0.944)	-0.122 (-0.531)	-0.146 (-0.687)	-0.146 (-0.687)	-0.116 (-0.510)
GEND	-0.002 (-0.011)	-0.011 (-0.073)	-0.004 (-0.030)	-0.013 (-0.097)	-0.059 (-0.397)	-0.029 (-0.190)	-0.029 (-0.190)	-0.029 (-0.185)
EDUC	-0.309 (-2.593)**	-0.302 (-2.461)**	-0.310 (-2.542)**	-0.290 (-2.345)**	-0.322 (-2.881)**	-0.280 (-2.167)**	-0.280 (-2.167)**	-0.321 (-2.558)**
LILEVEL	0.184 (0.763)	0.205 (0.813)	0.180 (0.721)	0.217 (0.855)	0.065 (0.281)	0.225 (0.886)	0.225 (0.886)	0.255 (0.996)
HILEVEL	-0.328 (-1.159)	-0.352 (-1.181)	-0.327 (-1.129)	-0.309 (-1.193)	-0.301 (-1.123)	-0.354 (-1.110)	-0.354 (-1.110)	-0.386 (-1.188)
AISSOURCE	0.165 (0.987)	0.110(0.489)	0.160(0.921)	0.218 (1.204)	0.165 (1.034)	0.136 (0.778)	0.136 (0.778)	0.181 (0.960)
SISOURCE	-0.212 (-1.566)*	-0.193 (-1.304)*	-0.211 (-1.527)*	-0.242 (-1.632)*	-0.195 (-1.401)*	-0.228 (-1.633)*	-0.228 (-1.633)*	-0.266 (-1.744)**
MTR	-0.085 (-0.691)	-0.072 (-0.556)	-0.079 (-0.592)	-0.102 (-0.749)	-0.114 (-0.735)	-0.099 (-0.782)	-0.099 (-0.782)	-0.050 (-0.346)
FAIR	-0.186 (-1.461)*	-0.180 (-1.385)*	-0.185 (-1.418)*	-0.199 (-1.538)*	-0.222 (-1.817)**	-0.189 (-1.466)*	-0.189 (-1.466)*	-0.209 (-1.570)*
COMP	0.375 (3.180) ***	0.375 (3.123) ***	0.375 (3.119) ***	0.345 (2.786) ***	0.331 (2.954) ***	0.370 (3.091) ***	0.370 (3.091) ***	0.303 (2.242) **
SELF A	-0.109 (-1.210)	-0.110 (-1.198)	-0.108 (-1.171)	-0.071 (-0.781)	-0.089 (-0.946)	-0.080 (-0.776)	-0.080 (-0.776)	-0.109 (-1.160)
MORALE	-0.199 (-1.723)**	-0.197 (-1.673)**	-0.201 (-1.689)**	-0.269 (-2.479)**	-0.196 (-1.628)**	-0.191 (-1.625)*	-0.191 (-1.625)*	-0.224 (-1.852)**
EDEV	-0.110 (-0.365)							

(continued)

Table 2.4 (continued)

	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)
DEMOC			-0.015 (-0.125)					
CULT				-0.159 (-1.328)				
RELIG					0.127 (0.755)			
PROT [†]					0.010 (0.081)			
CATH					0.002 (0.009)			
MUSL								
OTHRD								
LEGAL						-0.074 (-0.606)		
COLONY							-0.074 (-0.606)	
REGION								-0.036 (-0.290)
EAPR								0.064 (0.536)
EUCAR								0.146 (0.979)
LACR								
N	45	45	45	44	45	45	45	45
R ² (adjusted)	0.76	0.75	0.75	0.77	0.79	0.75	0.75	0.74
F statistic	10.75***	9.59***	9.54***	10.03***	10.36***	9.70***	9.70***	8.19***

Variable definitions *TEVA* tax evasion, *AGE* age, *GEND* gender, *EDUC* education, *ILEVEL* income level (*ILEVEL* low income level and *HILEVEL* high income level), *ISOURCE* income source (*ISOURCE* agriculture income source and *SOURCE* services income source), *MTR* marginal tax rates, *FAIR* fairness, *COMP* complexity, *SELFA* revenue authority contact, *MORALE* morale, *EDEV* economic development, *DEMOC* democracy, *CULT* culture, *RELIG* religion (*PROT* protestant, *CATH* catholic, *MUSL* muslim and *OTHRD* other denomination), *LEGAL* legal system, *COLONY* colonial heritage and *REGION* regional developing countries (*EAPR* East Asia and Pacific region, *EUCAR* Europe and Central Asia region and *LACR* Latin America and Caribbean region), t-statistics are in parentheses. Standard errors are corrected for heteroskedasticity

* **, *** Significant at 0.10, 0.05 and 0.01 levels, respectively

[†]Reference category only

Overall, the results of the sensitivity analysis show that the associations identified in the earlier regressions are robust to an alternative measure of tax evasion.

2.4.4 Additional Analysis

Reviews of the tax evasion literature by Jackson and Milliron (1986) and Richardson and Sawyer (2001) illustrate that major interactions between the key tax evasion determinants should also be considered in empirical tax evasion research. They argue that a potential reason for some of the inconsistent findings in previous tax evasion research is that interactions between the key tax evasion determinants are not taken into account by researchers. Indeed, Table 2.2 above reports some interesting correlations between several of the key tax evasion determinants.⁷ Additional analysis is thus carried out in this study to include interactions terms for AGE*GEND, AGE*ILEVEL, AGE*ISOURCE, AGE*MTR, AGE*FAIR, EDUC*FAIR, ILEVEL*MTR, ISOURCE*FAIR and FAIR*COMP in separate regression models to consider whether these interactions are significant and/or change the base regression model findings reported in Table 2.3 (Column 1). While not reported here, the additional regression analysis finds that none of these interactions are significant predictors of tax evasion ($p < 0.10$).⁸ Moreover, the base regression model findings remain unchanged (with no changes in sign) after including the various interactions. This additional analysis shows that the associations identified in the earlier regressions are robust to several interactions between the independent variables.

2.5 Conclusion

While tax evasion has been a popular academic research topic in most developed countries over a long period of time, there seems to be a lack of research which considers the major determinants of tax evasion on a cross-country basis. While Riahi-Belkaoui's (2004) pioneering work is noteworthy, he concentrates on the association between selected determinants of tax morale and tax evasion. This study expanded on the work of Riahi-Belkaoui (2004) and systematically examined on a cross-country basis, many of the key determinants of tax evasion.

⁷Specifically, correlations ($p < 0.01$) are found between AGE and GEND ($r = 0.44$), AGE and ILEVEL (AGE and LILEVEL, $r = 0.62$; AGE and HILEVEL, $r = -0.72$), AGE and ISOURCE (AGE and AISOURCE, $r = -0.60$; AGE and SISOURCE, $r = 0.49$), AGE and MTR ($r = 0.51$), AGE and FAIR ($r = 0.45$), EDUC and FAIR ($r = 0.55$), ILEVEL and MTR (LILEVEL and MTR, $r = 0.52$; HILEVEL and MTR, $r = -0.58$), ISOURCE and FAIR (AISOURCE and FAIR, $r = -0.54$; SISOURCE and FAIR, $r = 0.49$) and FAIR and COMP ($r = -0.49$).

⁸These additional results are available from the author upon request.

The regression results show that non-economic determinants have the strongest impact on tax evasion in comparison with economic determinants. By integrating these various determinants in mixed models of tax evasion, our understanding is enhanced about tax evasion across countries. Complexity is found to be the main determinant of tax evasion. Other key determinants of tax evasion found are education, income source, fairness and tax morale. Overall, the regression results show that the lower the level of complexity and the higher the level of education, services income source, fairness and tax morale, the lower is the level of tax evasion. These results are robust to different cross-country control variables, another measure of tax evasion and several interactions.

Whilst data availability limits the conclusiveness of this study's findings, the results reported in this study may have implications for governments internationally when consideration is given to the key issue of reducing the tax evasion levels in society. For example, attempts could be made by governments to make improvements to the levels of complexity in the tax system. Tax evasion appears to be controlled by reduced levels of complexity. By enhancing the general educational knowledge of taxpayers, tax evasion is also reduced. Wage and salary income subject to withholding also represents another important curb on tax evasion. It seems that the least opportunity exists for those taxpayers whose source of income is dependent on wages or salaries subject to withholding such as in the services employment sector. Perceptions by taxpayers that tax policy is fair also lead to improvements in tax evasion levels. Finally, where tax morale is high, this also provides another key control on tax evasion. All of these insights should allow policy makers to gain a better understanding of what represents the major causes of tax evasion internationally, and design and implement appropriate measures to control and restrain its damaging effects. This could lead to improvements in tax revenue collection by governments.

This study is subject to several limitations. First, due to data unavailability, other potential tax evasion determinants such as occupation status, sanctions, probability of detection and compliant peers were not included. Hence, this study might experience omitted variable bias. Second, the sample size of 45 countries is fairly small compared to the total number of countries in the world, which means that the results may not be conclusive. However, this is a common problem of cross-country tax research generally (Fisman and Gatti 2002; Brunetti and Weader 2003; Riahi-Belkaoui 2004). Third, tax evasion was measured in this study using subjective survey ratings. This raises concerns about its reliability as it could be prone to measurement error. Data are averaged over several years to minimize the possibility of measurement error for this variable. Fourth, using survey data measures for some of the independent and control variables raises concern about measurement error for these variables. While this issue cannot be ruled out entirely, every effort was made in this study to collect data from reputable sources and use averaged data measures for each independent and control variable, where possible.

Future research on tax evasion internationally could examine several issues. First, subject to reliable cross-country data becoming available, occupation status, sanctions, probability of detection and compliant peers could be analyzed. Second,

research could be carried out using increased country sample sizes so that enhanced cross-country comparisons can be made. Third, research could be undertaken utilizing improved survey measures of tax evasion and various explanatory variables (e.g. complexity, education and fairness) so that the results are more reliable and the risk of measurement error is reduced further. Finally, future research in this area could develop a greater longitudinal emphasis and analyze the impact of changes in the key tax evasion determinants and other important variables on changes in the level of tax evasion.

Appendix

Data Description and Sources

Variable	Description	Source
Tax evasion (TEVA)	- Country rating that tax evasion is minimal (on a scale from 1—strongly disagree to 7—strongly agree) averaged for 2002–2004. This scale was transformed by deducting the country score from 8 to obtaining an increasing scale of tax evasion - Country rating of tax evasion (on a scale from 0—common to 10—not common) averaged for 2002–2004. This variable was transformed to obtain an increasing scale of tax evasion	<i>Global Competitiveness Report</i> (World Economic Forum 2002, 2003, 2004) <i>World Competitiveness Year Book</i> (Institute of Management Development 2002, 2003, 2004)
Age (AGE)	Percentage of the population which is greater than 65 years of age averaged for 2002–2004	<i>2005 World Development Indicators</i> (World Bank 2005a)
Gender (GEND)	Percentage of the population which is female averaged for 2002–2004	<i>2005 World Development Indicators</i> (World Bank 2005a)
Education (EDUC)	Country rating of the quality of the education system for a competitive economy (on a scale from 1—low to 7—high) averaged for 2002–2004	<i>World Competitiveness Year Book</i> (Institute of Management Development 2002, 2003, 2004)
Income level (ILEVEL)	- Proportion of household income going to the lowest 20 % of households (LILEVEL) averaged for 2002–2004 - Proportion of household income going to the highest 20 % of households (HILEVEL) averaged for 2002–2004	<i>World Competitiveness Year Book</i> (Institute of Management Development 2002, 2003, 2004)

(continued)

(continued)

Variable	Description	Source
Income source (ISOURCE)	• Employment by sector: agriculture percentage of total employment (AISOURCE) averaged for 2002–2004 • Employment by sector: services percentage of total employment (SISOURCE) averaged for 2002–2004	<i>World Competitiveness Year Book</i> (Institute of Management Development 2002, 2003, 2004)
Marginal tax rates (MTR)	The top marginal income tax rate for individuals of a country	<i>2005 World Development Indicators</i> (World Bank 2005a)
Fairness (FAIR)	Country rating of the fairness of tax policy (on a scale from 0—low fairness to 8—high fairness) for the 2002 year	<i>IPS National Competitiveness Report</i> (Institute for Industrial Policy Studies 2002)
Complexity (COMP)	Country rating of tax system complexity (on a scale from 1—high complexity to 7—low complexity) averaged for 2003–2004	<i>Global Competitiveness Report</i> (World Economic Forum 2003, 2004)
Revenue authority contact (SELFA)	Dummy variable of 1 if the country has a self-assessment tax system, 0 otherwise	Organisation for Economic Co-operation and Development (2004) http://www.oecd.org/dataoecd/28/2/33866659.pdf PricewaterhouseCoopers (2004) KPMG (2003) http://www.kpmg.com.hk
Tax morale (MORALE)	Country rating of cheating on taxes if you have the chance (on a scale from 1—never justifiable to 10—always justifiable) averaged for the 1981, 1990, 1995 and 1999 World Value Surveys. This variable was transformed to obtain an increasing scale of tax morale	Inglehart (2003) http://nds.umdl.umich.edu/cgi/s/sda/hsda?harcWEVS+wevs Inglehart et al. (2004)
Economic development (EDEV)	Natural log of GDP per capita averaged for 2001–2003	<i>2005 World Development Indicators</i> (World Bank 2005a)
Democracy (DEMOC)	Political rights index developed by Freedom House (on a scale from 1—high political rights to 7—low political rights), averaged for 2002–2004. This index was transformed to obtain an increasing scale of democracy	Freedom House (2005) http://www.freedomhouse.org/ratings/index.htm

(continued)

(continued)

Variable	Description	Source
Culture (CULT)	Ethnolinguistic fractionalization index measures the probability that two randomly selected individuals within a country belong to the same ethnic group. It is an index between 0 and 100, with 100 denoting lower fractionalization	Mauro (1995)
Religion (RELIG)	The percentages of Protestants (PROT), Catholics (CATH), Muslims (MUSL) and Other Denominations (OTHRD) in 1980 or 1990–1995 for countries of recent formation	La Porta et al. (1999)
Legal system (LEGAL)	Dummy variable of 1 if the country is a common law system country, 0 otherwise	La Porta et al. (1999)
Colonial heritage (COLONY)	Dummy variable of 1 if the country was ever a colony, 0 otherwise	Barro and Lee (1994)
Regional developing countries (REGION)	• Dummy variable of 1 if the developing country is in the East Asia and Pacific region (EAPR), 0 otherwise • Dummy variable of 1 if the developing country is in the Europe and Central Asia region (EUCAR), 0 otherwise • Dummy variable of 1 if the developing country is in the Latin America and the Caribbean region (LACR), 0 otherwise	<i>World Bank Group—Data and Statistics</i> (World Bank 2005b) http://www.worldbank.org/data/countryclass/classgroups.htm

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Financial Crimes: Psychological, Technological, and
Ethical Issues

Dion, M.; WEISSTUB, D.; Richet, J.-L. (Eds.)

2016, XIX, 376 p. 7 illus., Hardcover

ISBN: 978-3-319-32418-0