

Size and Development of the Shadow Economies of Portugal and 35 other OECD Countries from 2003 to 2013: Some New Facts

by

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1. Size and Development of the Shadow Economies in 36 Countries

In the Tables 1.1 to 1.4 the size and development of 31 European and of five non-European shadow economies over the period 2003-2013 is presented¹. If we first consider the size and development of the shadow economy of Portugal (Spain), she had a value of 22.2% (22.2%) in the year 2003, which then steadily declined to 18.7% (18.4%) in the year 2008, increased slightly to 19.5% (19.5%) in the year 2009 and since then decreased to 19.0% (18.6%) for the year 2013 (forecast).² If we consider the Mediterranean countries Italy and Greece, Italy has a size of the shadow economy of 26.1% in the year 2003 which declined to 21.4% in the year 2008 and increased to 22.0% in 2009 and then decreased again to 21.1% in the year 2013 (forecast). In Greece we have a size of the shadow economy of 28.2% in 2003 which decreased to 24.3% in 2008, increased to 25.0% in 2009 and decreased again to 23.6% in 2013 (forecast). If we consider the results of the average size of the shadow economy of the 27 European Union countries, we realize, that the shadow economy in the year 2003 was 22.3% (of official GDP), decreased to 19.2% in 2008 and increased to 19.8 % in 2009 and then decreased again to 18.4 % in 2013 (Table 1.1). If we compare the average of 31 European countries, in 2003 the average size was 22.4%, decreased to 19.4% in 2008, and increased to 19.9% in 2009 and decreased to 18.5% in 2013 (Table 1.2). If we consider the development of

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¹ The calculation of the size and development of the shadow economy is done with the MIMIC (Multiple Indicators and Multiple Courses) estimation procedure. Using the MIMIC estimation procedure one gets only relative values and one needs other methods like the currency demand approach, to calibrate the MIMIC values into absolute ones. For a detailed explanation see Friedrich Schneider, editor, Handbook on the Shadow Economy, Cheltenham (UK): Edward Elgar Publishing Company, 2011.

² The calculated values for 2013 are projections based on the forecasts of the official figures (GDP, unemployment, etc.) of these countries.

the shadow economy of Australia, Canada, Japan, New Zealand and the USA, we find a similar movement over time (see Table 1.3.); in 2013 these 5 countries had an average size of the shadow economy of 8.6%, in 2010 this value was 9.7%.

If we consider the last 2 years (2012 and 2013) and compare them with the year 2008, we realize that in most countries we had again a decrease of the size and development of the shadow economy. This is due to the fact of the recovery from the world wide economic and financial crises. Hence the most important reason for this decrease is, that, if the official economy is recovering or booming, people have less incentive to undertake additional activities in the shadow economy and to earn extra “black” money. The only exceptions are Greece and Spain, where the recession of the official economy is so strong, that it even reduced the demand of the shadow economy activities due to the severe income losses of the Greece (Spanish) people; the Greek (Spanish) shadow economy will decrease to 23.6% (18.6%) of official GDP in 2013; a decrease of 0.4 (0.6) percentage points compared to the year 2012!

Furthermore there are three different developments with respect to the size of the shadow economy:

- (1) The eastern countries or the new European Union members, like Bulgaria, like South-Cyprus, like the Czech Republic, like Latvia, like Lithuania, like Poland have a higher shadow economies than the “old” European Union countries, like Austria, Belgium, Germany, Italy; hence we have an increase of the size of the shadow economy from west to east.
- (2) Also we observe an increase of the size and development of the shadow economy from north to south. On average the southern European countries have considerable higher shadow economies than the one in Central and Western Europe. This can also be demonstrated looking at Figures 1 and 2.
- (3) The five other highly developed OECD countries (Australia, Canada, Japan, New Zealand and the United States in Table 1.3) have a much lower shadow economy about 10.1 % of GDP average in 2009 which decreased to 9.2% in 2012.

2. Shadow Economies in developed OECD Countries: What are the driving Forces

In two papers by Friedrich Schneider and Andreas Buehn, 2012 and Andreas Buehn and Friedrich Schneider, 2012, new investigations have been undertaken to tackle two questions:

- (1) What are the driving forces of shadow economy in highly developed OECD countries, and
- (2) can we make a calculation of the size and development of tax evasion of OECD countries over the period 1999 to 2010³.

In table 2.1 we first show the average relative impact (in per cent) of the shadow economy determinants in 38 OECD countries over the period 1999 to 2010. If we consider table 2.1 we clearly see that indirect taxation has by far the biggest average impact with 29.4% (in per cent) on the shadow economy of the 38 OECD countries over the period 1999 to 2010. This is followed by self-employment with 22.2% and unemployment with 16.9%, followed by personal income tax with 13.1%. Portugal shows a slightly different picture: Self-employment has by far the biggest influence on the size and development of the shadow economy with 31.1%, followed by indirect taxation with 29.9%, then unemployment with 14.6%.

Finally in table 2.2 the size and development of tax evasion (in per cent) of the official GDP of 38 OECD countries accounting for indirect taxation and self-employment and their driving forces is presented. Table 2.2 clearly shows that we have a declining trend with average values of tax evasion of 3.6% in 1999. This value decreased to 2.8% in the year 2010 overall 38 countries. If we consider again Portugal the value was 4.6% in 1999, which more or less steadily declined (with some ups and downs) to 3.7% in the year 2010. That means that the Portugese government was to some extend successful in fighting tax evasion⁴.

³ Compare here the studies of Schneider and Buehn (2012) and of Buehn and Schneider (2012).

⁴ The precise calculation to reach these figures is shown in the paper by Buehn and Schneider (2012). The figures are developed from a MIMIC estimation of the Size and Development of the Shadow Economy of these 38 Countries. The Shadow Economy is broken down in illegal activities of the Shadow Economy and "legal" (explicit) Shadow Economy Activities (these are legal activities but are produced in the shadow, eg. repairing a car or building a house) and from this the tax evasion figures are derived.

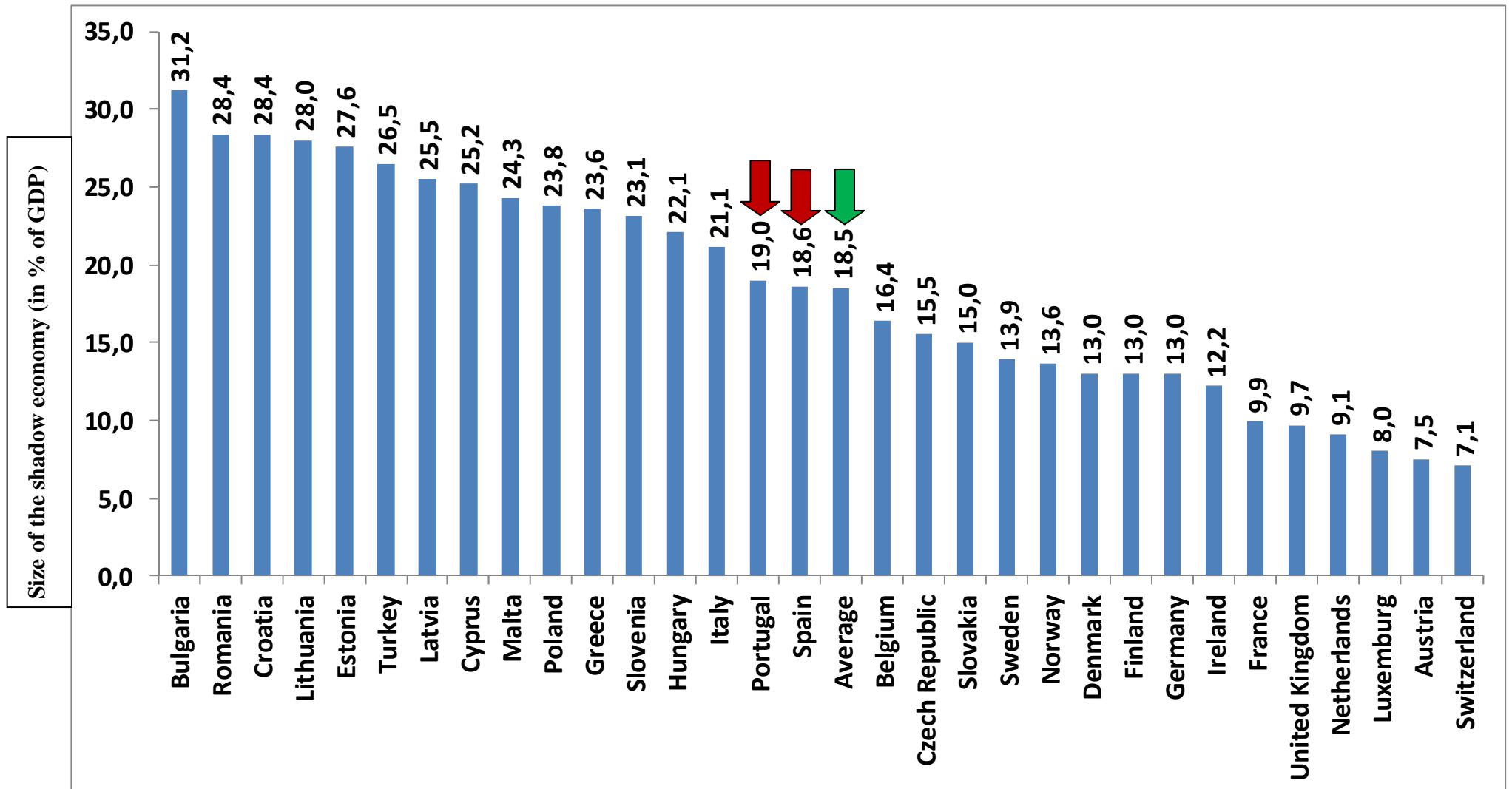
3. Concluding Remarks

In general we realize that we have some dynamic and interesting results of the development of the shadow economies, which are different for the 38 OECD countries and their driving forces are different, too. Also the size and development of tax evasion figures point to different developments of these 38 OECD countries, which are computed here for the first time on a longer time series basis.

4. References

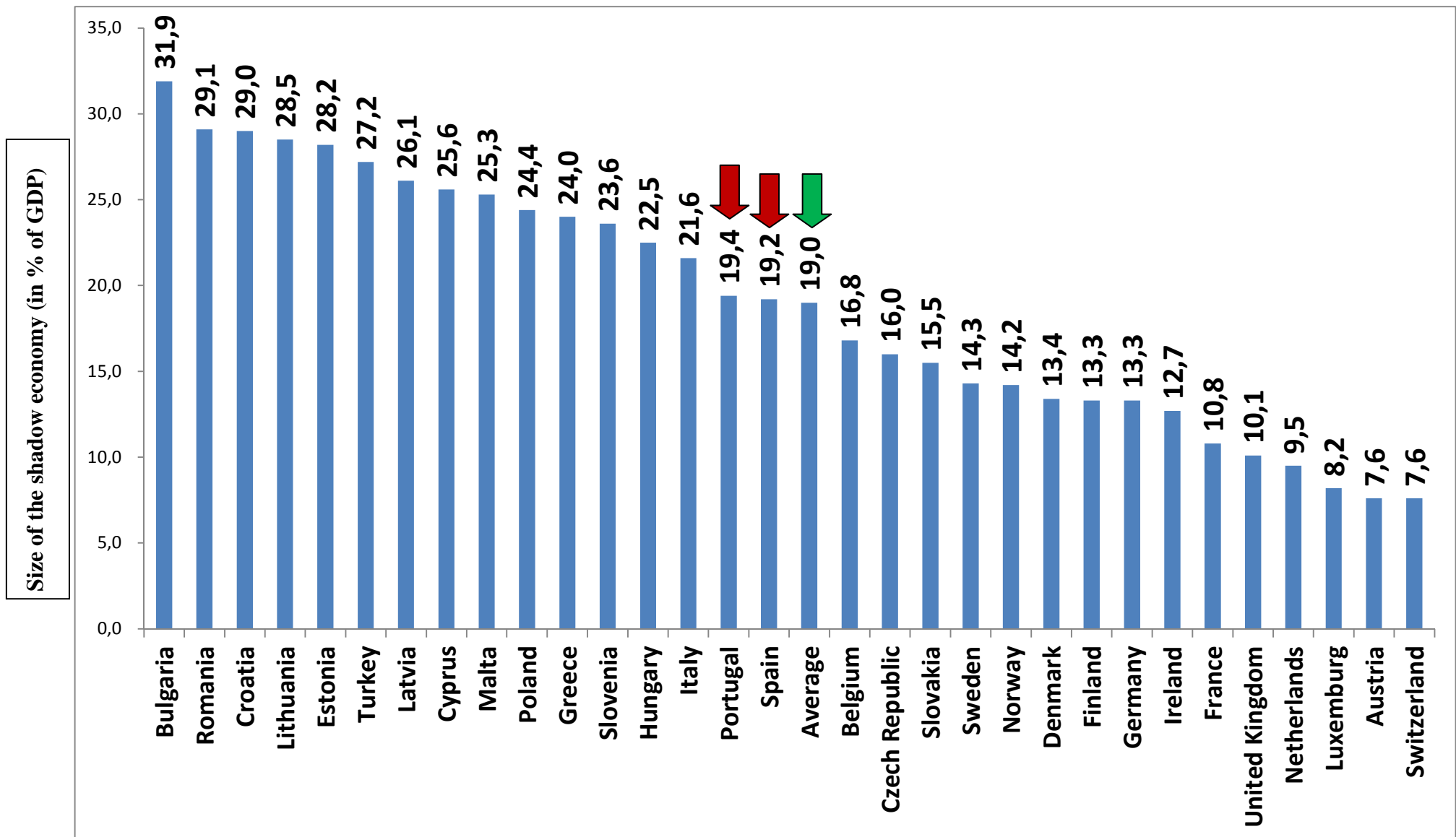
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Figure 1: Size of the Shadow Economy of 31 European Countries in 2013 (in % of off. GDP)



Source: own calculations, December 2012

Figure 2: Size of the Shadow Economy of 31 European Countries in 2012 (in % of off. GDP)



Source: own calculations, March 2012

Table 1.1: Size of the Shadow Economy of 27 European Countries over 2003 – 2013 (in % of off. GDP)

Country / Year											
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	10.8	11	10.3	9.7	9.4	8.1	8.47	8.2	7.9	7.6	7.5
Belgium	21.4	20.7	20.1	19.2	18.3	17.5	17.8	17.4	17.1	16.8	16.4
Bulgaria	35.9	35.3	34.4	34	32.7	32.1	32.5	32.6	32.3	31.9	31.2
South-Cyprus	28.7	28.3	28.1	27.9	26.5	26	26.5	26.2	26	25.6	25.2
Czech Republic	19.5	19.1	18.5	18.1	17	16.6	16.9	16.7	16.4	16.0	15.5
Denmark	17.4	17.1	16.5	15.4	14.8	13.9	14.3	14	13.8	13.4	13.0
Estonia	30.7	30.8	30.2	29.6	29.5	29	29.6	29.3	28.6	28.2	27.6
Finland	17.6	17.2	16.6	15.3	14.5	13.8	14.2	14	13.7	13.3	13.0
France	14.7	14.3	13.8	12.4	11.8	11.1	11.6	11.3	11	10.8	9.9
Germany	17.1	16.1	15.4	15	14.7	14.2	14.6	13.9	13.7	13.3	13.0
Greece	28.2	28.1	27.6	26.2	25.1	24.3	25	25.4	24.3	24.0	23.6
Hungary	25	24.7	24.5	24.4	23.7	23	23.5	23.3	22.8	22.5	22.1
Ireland	15.4	15.2	14.8	13.4	12.7	12.2	13.1	13	12.8	12.7	12.2
Italy	26.1	25.2	24.4	23.2	22.3	21.4	22	21.8	21.2	21.6	21.1
Latvia	30.4	30	29.5	29	27.5	26.5	27.1	27.3	26.5	26.1	25.5
Lithuania	32	31.7	31.1	30.6	29.7	29.1	29.6	29.7	29.0	28.5	28.0
Luxemburg (Grand-Duché)	9.8	9.8	9.9	10	9.4	8.5	8.8	8.4	8.2	8.2	8.0
Malta	26.7	26.7	26.9	27.2	26.4	25.8	25.9	26	25.8	25.3	24.3
Netherlands	12.7	12.5	12	10.9	10.1	9.6	10.2	10	9.8	9.5	9.1
Poland	27.7	27.4	27.1	26.8	26	25.3	25.9	25.4	25	24.4	23.8
Portugal	22.2	21.7	21.2	20.1	19.2	18.7	19.5	19.2	19.4	19.4	19.0
Romania	33.6	32.5	32.2	31.4	30.2	29.4	29.4	29.8	29.6	29.1	28.4
Slovenia	26.7	26.5	26	25.8	24.7	24	24.6	24.3	24.1	23.6	23.1
Spain	22.2	21.9	21.3	20.2	19.3	18.4	19.5	19.4	19.2	19.2	18.6
Slovakia	18.4	18.2	17.6	17.3	16.8	16	16.8	16.4	16	15.5	15.0
Sweden	18.6	18.1	17.5	16.2	15.6	14.9	15.4	15	14.7	14.3	13.9
United Kingdom	12.2	12.3	12	11.1	10.6	10.1	10.9	10.7	10.5	10.1	9.7
27 EU-Countries / Average (unweighted)	22.3	21.9	21.5	20.8	19.9	19.2	19.8	19.6	19.2	18.9	18.4

Source: Own Calculations, December 2012

Table 1.2: Size of the Shadow Economy of 4 European Countries (Non EU-Members) over 2003 – 2013 (in % of off. GDP)

Country / Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Croatia	32.3	32.3	31.5	31.2	30.4	29.6	30.1	29.8	29.5	29.0	28.4
Norway	18.6	18.2	17.6	16.1	15.4	14.7	15.3	15.1	14.8	14.2	13.6
Switzerland	9.5	9.4	9	8.5	8.2	7.9	8.3	8.1	7.8	7.6	7.1
Turkey	32.2	31.5	30.7	30.4	29.1	28.4	28.9	28.3	27.7	27.2	26.5
4 Non EU-Countries / Average	23.2	22.9	22.2	21.6	20.8	20.2	20.7	20.3	19.9	19.5	18.9
Unweighted Average of all 31 European Countries	22.4	22.1	21.6	20.9	20.1	19.4	19.9	19.7	19.3	19.0	18.5

Source: Own Calculations, December 2012

Table 1.3: Size of the Shadow Economy of 5 Highly Developed Non- European Countries over 2003 – 2013 (in % of off. GDP)

Country / Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Australia	13.7	13.2	12.6	11.4	11.7	10.6	10.9	10.3	10.1	9.8	9.4
Canada	15.3	15.1	14.3	13.2	12.6	12	12.6	12.2	11.9	11.5	10.8
Japan	11	10.7	10.3	9.4	9	8.8	9.5	9.2	9	8.8	8.1
New Zealand	12.3	12.2	11.7	10.4	9.8	9.4	9.9	9.6	9.3	8.8	8.0
United States USA	8.5	8.4	8.2	7.5	7.2	7	7.6	7.2	7	7.0	6.6
Other OECD Countries / Unweighted Average	12.16	11.92	11.42	10.38	10.06	9.56	10.1	9.7	9.46	9.18	8.6

Source: Own Calculations, December 2012

Table 1.4: Size of the Shadow Economy of Various Unweighted Averages over 2003 – 2013 (in % of off. GDP)

Averages / Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
27 EU-Countries / Average (unweighted)	22.3	21.9	21.5	20.8	19.9	19.3	19.8	19.5	19.4	18.9	18.4
4 Non EU-Countries / Average (unweighted)	23.2	22.9	22.2	21.6	20.8	20.2	20.7	20.3	20.0	19.5	18.9
5 Other OECD Countries / Average (unweighted)	12.2	11.9	11.4	10.4	10.1	9.6	10.1	9.7	9.5	9.18	8.6
All 36 Countries / Average (unweighted)	21.0	20.7	20.2	19.4	18.7	18.0	18.5	18.3	18.0	17.6	17.1

Source: Own Calculations, December 2012

Table 2.1: Average relative impact (in %) of the shadow economy determinant's in 38 OECD countries (1999:2010)

Country	Average size of the shadow economy	Personal income tax	Indirect taxes	Tax morale	Unemployment	Self-employment	GDP growth	Business freedom
Australia	13.8	21.3	25.4	7.4	15.8	19.3	0.9	9.9
Austria	9.8	18.5	27.4	11.6	12.1	20.5	0.8	9.1
Belgium	21.5	19.2	20.2	19.1	16.5	17.3	0.4	7.2
Bulgaria	34.6	5.1	37.7	5.7	25.9	17.5	1.9	6.2
Canada	15.6	22.1	17.5	7.7	19.2	22.4	0.7	10.4
Chile	19.4	1.8	35.3	5.5	17.3	32.7	0.8	6.7
South-Cyprus	27.2	4.3	35.9	9.1	11.2	29.9	0.8	8.7
Czech Rep.	17.6	7.8	30.7	9.4	19.0	23.5	1.2	8.3
Denmark	17.3	34.6	33.5	4.0	9.5	9.9	0.3	8.2
Estonia	21.7	10.0	36.0	11.7	21.8	10.4	1.8	8.3
Finland	17.4	19.7	29.1	8.7	18.6	15.2	0.8	7.9
France	14.8	12.8	24.3	15.5	23.2	15.1	0.4	8.6
Germany	15.7	16.6	24.2	8.3	24.3	16.9	0.6	9.1
Greece	27.0	5.8	21.8	10.4	18.0	37.6	0.7	5.7
Hungary	24.1	12.3	34.9	6.4	18.6	18.5	1.2	8.0
Iceland	15.2	19.9	39.7	6.5	7.1	17.9	0.6	8.2
Ireland	16.1	12.5	36.4	7.9	12.5	21.3	1.0	8.5
Italy	26.9	15.6	18.9	9.0	18.6	31.0	0.1	6.8
Korea	26.3	5.7	27.3	3.4	9.8	44.3	1.4	8.0
Latvia	22.2	8.2	32.3	13.3	23.3	14.6	1.8	6.6
Lithuania	25.4	9.0	28.8	17.5	19.9	17.1	1.5	6.1
Luxembourg	9.6	13.2	33.4	20.0	10.4	11.9	1.2	9.8
Malta	27.3	5.9	39.7	3.2	20.0	21.2	0.8	9.3
Mexico	30.0	2.3	42.1	10.2	5.9	33.8	0.4	5.3
Netherlands	13.2	13.6	32.5	13.0	10.4	19.7	0.8	10.0
New Zealand	12.2	21.8	25.4	8.4	11.9	22.9	0.6	9.1
Norway	18.6	21.2	31.5	12.5	10.8	13.0	0.5	10.5
Poland	26.4	6.1	27.8	7.8	26.1	25.7	1.3	5.3
Portugal	22.7	8.1	29.9	8.7	14.6	31.1	0.4	7.2
Romania	32.2	4.2	24.5	14.2	13.1	37.7	1.1	5.2
Slovak Rep.	17.5	4.8	31.7	6.4	34.9	13.7	1.5	7.1
Slovenia	25.2	9.6	33.9	9.6	15.4	21.7	1.2	8.6
Spain	22.8	10.6	17.9	10.4	29.2	23.8	0.6	7.5
Sweden	18.6	23.5	30.6	8.7	15.2	13.2	0.8	8.0
Switzerland	8.3	17.7	30.7	9.0	9.6	23.8	0.5	8.7
Turkey	30.6	4.9	31.4	0.7	16.4	41.4	0.6	4.6
UK	12.5	18.2	30.8	8.1	14.3	18.0	0.6	9.9
United States	8.7	27.5	5.1	13.2	22.0	16.0	0.9	15.4
Average	20.3	13.1	29.4	9.5	16.9	22.2	0.9	8.1

Source: Schneider and Buehn (2012).

Table 2.2: Size and development of tax evasion (in % of GDP) in 38 OECD countries accounting for indirect taxation and for self-employment as driving forces

Country	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Australia	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.8	1.7	1.5	1.5	1.6	1.8
Austria	1.6	1.5	1.4	1.5	1.5	1.5	1.5	1.4	1.3	1.2	1.1	1.4	1.4
Belgium	2.8	2.6	2.6	2.6	2.7	2.6	2.6	2.4	2.2	2.0	1.9	2.1	2.4
Bulgaria	6.8	6.4	6.2	6.3	6.4	6.1	5.9	5.5	5.1	4.8	4.4	4.8	5.7
Canada	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.8	1.7	1.5	1.5	1.7	1.9
Chile	4.5	4.2	4.1	4.2	4.3	4.1	4.0	3.7	3.5	3.3	3.4	3.7	3.9
South-Cyprus	6.3	5.9	5.7	5.8	6.0	5.9	5.7	5.3	5.0	4.7	4.4	4.5	5.4
Czech Rep.	3.4	3.2	3.2	3.2	3.3	3.2	3.0	2.8	2.5	2.1	2.1	2.3	2.9
Denmark	2.6	2.4	2.4	2.5	2.5	2.4	2.4	2.2	2.0	1.7	1.7	1.9	2.2
Estonia	-	3.7	3.6	3.7	3.7	3.5	3.4	3.1	2.9	2.5	2.8	2.8	3.2
Finland	2.7	2.5	2.4	2.5	2.5	2.5	2.4	2.2	2.1	1.9	1.8	2.0	2.3
France	2.0	1.9	1.8	1.9	1.9	1.9	1.8	1.7	1.6	1.4	1.4	1.6	1.7
Germany	2.2	2.1	2.0	2.1	2.2	2.1	2.1	1.9	1.8	1.6	1.5	1.7	1.9
Greece	5.6	5.3	5.2	5.3	5.3	5.1	5.0	4.6	4.4	4.0	3.7	4.0	4.8
Hungary	4.5	4.2	4.1	4.1	4.2	4.1	4.0	3.7	3.6	3.2	3.0	3.3	3.8
Iceland	3.0	2.9	2.8	2.9	3.0	2.8	2.7	2.5	2.3	2.0	2.1	2.3	2.6
Ireland	3.1	2.9	2.8	2.9	3.0	2.9	2.8	2.6	2.6	2.4	2.5	2.6	2.8
Italy	4.6	4.2	4.1	4.2	4.4	4.3	4.2	4.0	3.8	3.4	3.3	3.6	4.0
Korea, Rep.	6.7	6.2	6.0	6.1	6.2	6.0	5.9	5.5	5.2	4.7	4.3	4.8	5.6
Latvia	3.7	3.5	3.4	3.4	3.4	3.3	3.2	2.9	2.7	2.7	2.3	2.7	3.1
Lithuania	4.1	3.9	3.8	3.8	3.8	3.6	3.5	3.2	3.1	3.1	2.7	3.2	3.5
Luxembourg	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.2	1.1	1.0	1.2	1.3

Table 2.2: Size and development of tax evasion (in % of GDP) in 38 OECD countries accounting for indirect taxation and self-employment as driving forces (cont.)

Country	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Malta	5.5	5.2	5.1	5.3	5.4	5.3	5.2	4.8	4.6	4.2	4.0	4.6	4.9
Mexico	7.7	7.1	7.1	7.3	7.5	7.2	7.1	6.5	6.1	5.8	5.6	6.2	6.8
Netherlands	2.3	2.1	2.1	2.2	2.3	2.2	2.2	2.0	1.9	1.7	1.7	1.9	2.0
New Zealand	2.1	1.9	1.9	1.9	1.9	1.8	1.8	1.7	1.6	1.5	1.4	1.6	1.8
Norway	2.8	2.7	2.6	2.7	2.7	2.6	2.6	2.4	2.3	2.0	2.0	2.2	2.5
Poland	4.9	4.6	4.6	4.7	4.8	4.6	4.5	4.2	3.8	3.4	3.2	3.5	4.2
Portugal	4.6	4.3	4.2	4.4	4.6	4.5	4.4	4.2	3.9	3.4	3.3	3.7	4.1
Romania	7.0	6.7	6.5	6.6	6.6	6.3	6.2	5.6	5.4	5.0	4.6	5.2	6.0
Slovak Rep.	2.8	2.7	2.6	2.7	2.7	2.6	2.5	2.3	2.1	1.9	1.8	1.9	2.4
Slovenia	5.0	4.7	4.6	4.7	4.8	4.6	4.5	4.1	4.0	3.5	3.2	3.6	4.3
Spain	3.2	3.0	2.9	3.0	3.0	3.0	2.9	2.8	2.6	2.5	2.5	2.7	2.8
Sweden	2.8	2.6	2.6	2.6	2.7	2.6	2.5	2.4	2.2	2.0	1.9	2.2	2.4
Switzerland	1.6	1.5	1.4	1.5	1.6	1.5	1.4	1.3	1.2	1.0	1.0	1.2	1.4
Turkey	7.8	7.3	7.4	7.5	7.5	7.1	6.8	6.3	5.7	5.3	5.3	5.7	6.7
UK	2.1	1.9	1.9	1.9	2.0	1.9	1.9	1.8	1.7	1.5	1.6	1.6	1.8
United States	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Average	3.6	3.4	3.4	3.4	3.5	3.4	3.3	3.1	2.9	2.6	2.5	2.8	3.2

Source: Buehn and Schneider (2012).