The Influence of the economic crisis on the shadow economy in Germany, Greece and the other OECD-countries in 2010: What can be done?

by

Friedrich Schneider*)

*) Prof. Dr. Friedrich Schneider, Department of Economics, Johannes Kepler University of Linz, A-4040 Linz-Auhof, Tel.: 0043-70-2468-8210, Fax: 0043-70-2468-8209, E-mail: friedrich.schneider@jku.at, http://www.econ.jku.at/schneider/

1. Introduction

Since the worldwide economic crisis affected the real economy of many OECD countries among them Germany; the German official GDP declined by 5 percent in 2009 and unemployment increased too. In 2010 a moderate growth of 2.0% of the GDP is expected but unemployment will decrease slightly. Against this background the extent of the shadow economy in Germany and other OECD countries are once again the subject of an intense debate, as many people will attempt to make up for loss of income in the official economy through greater participation in the shadow economy. Furthermore, policy-makers are also considering how shadow economy activities can be transferred into the official economy.

This short paper reports on the development of the shadow economy in Germany, Greece and in further 19 OECD countries since 1990 and provides first and preliminary calculations for 2010, taking the continuing economic crisis into account. As a result of the world-wide economic crisis, all OECD countries are again expected to face a renewed increase in the size of the shadow economy for the second time in 2010 (first time in 2009).

The estimates of the size of the shadow economy are based on a combination of the cash (currency/demand) approach with the Multiple Indicators Multiple Causes (MIMIC) method.[1] The basic idea behind the currency demand approach is that goods and services performed in the shadow economy are paid for in cash and that, using a cash demand function, it is possible to estimate such goods and services performed in return for cash and thus to calculate the volume of the shadow economy.

The MIMIC approach is based on the idea that the shadow economy is not a directly observable figure, but that it is possible to approximate it using quantitatively measurable causes of working in the underground economy (such as the tax burden and amount of regulation), and using indicators (such as cash, official working hours, etc.), in which shadow economic activities are reflected.[2] As the MIMIC method only enables relative orders of magnitude of the underground economy of individual countries to be calculated, some values

[1] Compare e.g. Feld and Schneider (2010), Schneider, Buehn and Montenegro (2010), Schneider and Enste (2000, 2006), Schneider (2005), and Dell'Anno and Schneider (2009).
[2] These methods (among others) are presented in detail and subjected to critical assessment in the following books: Schneider (2004), and Schneider and Enste (2002).

that were calculated with the help of the cash approach are necessary to convert the shadow economy quantities into absolute values (in percentage of official GDP or in billions of euros).

2. Development of the shadow economy over time up to 2010

Table 2.1 shows the development of the shadow economy figures for Germany, Austria and Switzerland over the period 1975 to 2010.

Table 2.1

2.1 Development of the shadow economy in Germany from 1975 to 2010

Turning first to the development of the underground economy in **Germany**, it did sharply rise up to the beginning of this decade, but then there was a decline from EUR 370 billion in 2003 to EUR 345.5 billion in 2006. In 2007**,** for the first time in three years, there was once again a rise in the underground economy compared with the previous year calculated at EUR 3.5 billion or 1 percent to EUR 349 billion; one important reason for this was the increase in the Value Added Tax rate from 16% to 19%. However, as the official economy grew by just under 3 percent in nominal terms more than the shadow economy, the ratio of the shadow to the official economy continued to improve further even in 2007. While the value of the shadow economy in relation to the official GDP was still 17.1 percent in 2003 and 15.0 percent in 2006, this ratio, at just under 14.7 percent, even returned to below the level of 1998 for the first time.

In 2008, thanks to the healthy “official” economic environment, the shadow economy shrank again by EUR 2.2 billion. However, a renewed rise took place in the shadow economy in 2009 and will again take place in 2010 mainly due to the economic crisis and the continuing recession in Germany. The detailed results are set out in table 2.2 for 2010.

Table 2.2

This table shows, based on the assumption of a rise in the unemployment rate of up to 500.000, that the economic crisis will lead to an increase in the shadow economy of between EUR 7.6 billion and EUR 10.1 billion. The shadow economy is also expected to fall slightly due to the 0.6 percentage point decrease in the health care insurance contribution rate. Against this, the introduction of minimum wages in some further areas have a positive impact on the development of the shadow economy in an amount of between EUR 200 million and EUR 400 million. A new law of tax deductions (Bürgerentlastungsgesetz) will reduce the shadow economy between EUR 900 and EUR 1.150 million. The net effect of all these measures is a rise in the shadow economy of between EUR 6.4 billion and EUR 8.3 billion.[3]

2.2 Shadow economy in Austria and Switzerland

In **Austria** the shadow economy had grown from EUR 22.5 billion in 2003 to EUR 23.0 billion in 2004, a rise of 2.2 percent. One fundamental cause of the increase in the shadow economy in 2004 was the continuously high burden of taxation and social contributions following the restructuring of budget revenues in Austria in recent years. In 2005 the shadow economy in Austria was only EUR 22.0 billion, that is it declined for the first time and fell by about EUR 1 billion, a drop of 4.35 percent compared with the previous year. The main cause of this decline was the reduction in direct tax rates that came into effect at the beginning of 2005. For 2007 and 2008 the figures for Austria again show a slight reduction in the shadow economy from EUR 20.80 billion (2007) to EUR 19.9 billion (2008). Due to the worldwide recession a renewed rise in the shadow economy to EUR 20.5 billion or 8.5 percent of official GDP took place in 2009. For 2010 a further increase of the shadow economy by 4.0% to EUR 21.32 billion took place due to the **continuing** economic crises.

In **Switzerland,** as in Austria, a decline in the shadow economy was observed for the first time; It decreased from SFR 39.5 billion in 2004 to SFR 38.7 billion in 2005, or a good 9 percent of GDP, and it dropped further to EUR 37 billion, or 8.5 percent of GDP in 2006. Among the reasons for the decline were stricter legal measures to combat the shadow economy and in part a more attractive treatment of domestic services in the official economy. In 2007 and 2008 the shadow economy shrank due to the healthy economic conditions and a package of measures from the Swiss federal government against moonlighting; in 2007 it fell

[3] It must be clearly pointed out that, based on the information available as of March 2010, it is still extraordinarily difficult to estimate the full extent of the economic crisis in Germany but also the effect of the new law of tax deductions (*Bürgerentlastungsgesetz*).

to SFR 36.8 billion and in 2008 to *SFR* 35.4 *billion*. As in Germany and Austria, due to the world economic crisis, the shadow economy grew to SFR 36.4 billion or 8.3 percent of official GDP in 2009, and will further increase by 2.2% to SFR 37.2 or 8.34% in 2010.

2.3 Shadow Economy in Greece

In figure 2.1 the size and development of the Greek shadow economy and the average size of the shadow economy of the 21 OECD countries is presented. It clearly shows that from 1990 the Greek shadow economy rose from 22.6% of the official GDP to 28.2% in 2004.

Figure 2.1

After 2004 it declined to 24.3% of official GDP in 2008 due to a booming official economy. In 2009 it rose again to 25.0% due to the economic crisis and will continue to rise in 2010 to 25.2%.

In figure 2.2 a comparison of the size of the shadow economies is made for 2010 for the 21 OECD countries. It clearly demonstrates that the Greek one is the highest with 25.2% followed by Italy with 22.2% and Spain with 19.8%. At the lower end are the U.S. with 7.8% and Switzerland with 8.3%.

Figure 2.2

In table 2.3 the breakdown of the shadow economy into economic and service sectors in Greece is shown. The largest shadow economy sector is a service sector (tourism!), hotels, restaurants, catering, etc. with 22.0% and a size of 14.19 billion €; followed by the entertainment and leisure sector of 21,0% a value of 13.55 billion € in 2008/2009.

Table 2.3

Then the household shadow economy sector has a magnitude of 18.0% (out of 100% total shadow economy) and a value of 11.61 billion €.

In table 2.4 a further breakdown of the construction sector is shown. In the main construction trade the share is 35% (out of 100% of the total construction sector) and a value of 4.31 billion €.

Table 2.4

Miscellaneous repairs have a share with 21% and a value of 2.58 billion €. Finally considering the construction related trade sub-sector, its share is 26% and has a value of 3.20 billion €.

2.5 International comparison of the extent of the shadow economy

In order to make an international comparison of the size of the shadow economy with other OECD countries, table 2.5 presents the shadow economy of 21 OECD countries up to 2010.

Table 2.5

Table 2.5 clearly shows that the shadow economy declined in most OECD countries from the end of the 1990s to 2008. The unweighted average of the shadow economy in the 21 OECD countries in 1999/2000 was 16.8 percent and deduced to 13.3 percent in 2008, that is, a drop of fully 3.5 percentage points! Taking 1997/98 as the peak year for the shadow economy in most OECD countries, the shadow economy has declined continuously in 18 OECD countries. Only in Germany, Austria, and Switzerland did the growth in the shadow economy persist somewhat longer and did not fall until 2003, or 2004, respectively. The decline in the shadow economy from 1997/98 to 2009 measured as a proportion of GDP was greatest in Italy, with a drop of 5.3 percentage points, in Finland and Belgium with a fall of 4.7 percentage points, and in Sweden with 4.5 percentage points of GDP.

The continuous decline of the shadow economy in the OECD countries from 1997 to 2008 came to an end in 2009. With the beginning of the global economic crisis the shadow economy grew in all 21 OECD countries. On average it amounted to 13.8 percent – a rise of 0.5 percentage points compared with 13.3 [*percent*] in 2008 –thus almost returning to the level of 2007. In 2010 we expect a further increase of all 21 OECD countries between 0.1 percentage points (Denmark, Ireland, etc.) and 0.3 percentage points (in Spain); the average will be 14.0% in 2010!

The size of Germany's shadow economy places it in the mid-range for the OECD, while Austria and Switzerland are in the lower bottom third. The southern European countries (hence Greece, too) have shadow economies that measure between 20 and 25 percent of official GDP and continue to be among the frontrunners. The Scandinavian countries are next with shadow economies measuring between 15 and 16 percent.

3. Sector breakdown of the shadow economy for Germany and Austria

A breakdown of the shadow economy into economic and service sectors is given for Austria and Germany in table 3.1.

Table 3.1

This shows that in 2010 according to forecasts, the construction sector and skilled manual trades account for about 38 percent of the volume of the shadow economy (39% for Austria), followed by other trades and industries (e.g. car services) and services (hotels, restaurants, etc.) with 17 percent each (16 percent). Miscellaneous trades and domestic services (such as private tuition, hairdressing, or babysitting, for example) account for 15 percent (17 percent) of volume of the underground economy; the Entertainment and leisure sector represents a further 13 percent (12 percent). Table 3.2 provides a further breakdown of the results of estimates for the largest sector, that of the construction trade and skilled manual trades.

Table 3.2

This shows that in Germany about 47.8 billion € in shadow economic volume applies to the main construction sector. Construction-related sectors represent 35.5 billion €. Skilled manual trades in the construction sector generate EUR 24.6 billion in shadow activities and miscellaneous repairs (televisions, domestic appliances, etc.) generate EUR 28.6 billion in shadow activity.

4. Calculation of the number of moonlighters in Austria, Germany and Switzerland

Table 4.1 shows the results of an estimate of the development of full-time non-foreign moonlighters and of the illegal foreign workers (only as it relates to shadow economic activities) in Germany, Austria, and Switzerland for the period 1995-2010.[4]

[4] **Non-foreign full-time moonlighters** are **an artificial quantity** calculated from the billions of hours worked in the shadow economy. Illegal foreign workers represent an initial estimate

Table 4.1

In Germany the naional figure of full-time non-foreign moonlighters in 1995 totaled 7.3 million people and will increase by 2010 to 8.67 million people. However the number of illegal foreign workers in Germany is also not negligible; while this figure was 878,000 people in 1995, it will increase to 1.020.000 people by 2010.

The rise in the number of full-time non-foreign moonlighters or full-day moonlighters in Austria is also substantial; while this figure was 575,000 people in 1995, it will increase to 741.000 people by 2010. The number of illegal workers was 75.000 people in 1995 and will rise to 102.000 people by 2010.[5]

5. Conclusions: Incentive-oriented policy measures to reduce the shadow economy

Every government, including the Greek one, faces the challenge to undertake incentive-oriented policy measures to reduce the shadow economy and to have shadow economy activities transformed into the official one. Hence, the first and maybe most important question is, whether a decrease in size of the shadow economy is a blessing or a curse. If one assumes that two thirds of all activities in the shadow economy complement those in the official sector (i.e. those goods and services would not be produced in the official economy), the development of the shadow economy can lead to higher value-added figures; with this I mean that the total GDP, which consists of the shadow economy GDP and the official GDP, is always higher than the official GDP. Hence, a decline of the shadow economy will increase the social welfare and the total welfare in a country (here Greece) only if almost all of it is transferred to the official economy. Therefore, it is necessary to choose such economic and fiscal measures that strongly increase incentives to move the production from the unofficial

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of foreigners working illegally (**only with respect to shadow economic activities**). It must be clearly pointed out that two thirds of the added value in the shadow economy is generated by Germans, Austrians, or Swiss citizens or by foreigners legally resident in those countries and all having a good job (part-time or full-time) in the official economy, so that the calculation of the development of full-time non-foreign moonlighters only demonstrates large the volume of moonlighting is measured by the number of full-time workers. Compare also Feld and Schneider (2010).

(shadow) economy sector to the official sector (official economy). Only then the decline of the shadow economy will be a blessing for the entire economy.

In sum, the regulation of most West European labor markets and the high tax and social security contribution burdens are the two most important causes of the relatively large shadow economy in most European OECD (also Greece) countries compared to the U.S. or to some Asian countries (Japan, Singapore, etc.). Hence, a first measure would be to reduce non-wage labor costs, but such a reduction is in most cases and for most countries only moderately successful because a reduction without compensation of the finance loss leads to a huge public deficit which is not anymore tolerable.

To reduce the shadow economy, the following policy measures could be used:
First, one policy measure is to reimburse the VAT on labor intensive services (the so-called Luxemburg Model) in order to strengthen the incentive to supply those services in the official economy.
Second, other household investments (e.g. in Germany 1200 Euro per household per year) could be tax deductible, hence if you need a bill, you cannot do it in the shadow economy.[6]
Third, only to use the policy instruments with increased punishment and detection rates can be successful in special areas like in those ones where the shadow economy activities are connected with organized crime (e.g. the case of prostitution).

What type of policy conclusions can we now draw?

1. The first is that shadow economy activities are a complex phenomenon, presented to an important extent in all types of economies. People engage in shadow economy activities for a variety of reasons, like government actions, most notably taxation and regulation and the non-functioning of public institutions.[7]
2. The second is that a government aiming to decrease shadow economy activities has to first and foremost analyze the complex relationships between the official and shadow economy – and even more important – as well as the consequences of its own policy decisions.

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[5] The term "illegal workers" refers here solely to those who mostly "only" carry out moonlighting, and not, for example, to those who pursue traditionally criminal activities.
[6] Compare also Schneider and Enste (2006).
[7] Compare Dreher and Schneider (2009), and Dreher, Kotsogiannis and McCorriston (2009).

3. Considering a public choice perspective, a third conclusion is that a government may not have a great interest to reduce the shadow economy due to
   i. income earned in the shadow economy increases the standard of living of roughly one third of the working population, .
   ii. Between 40 and 50 percent of the shadow economy activities have a complementary character, which means that additional value added is created and this increases the overall (official and unofficial) GDP.
   iii. Tax losses may be moderate, as at least two thirds of the income earned in the shadow economy is immediately spent in the official economy.
   iv. People who work in the shadow economy have less time for other things like going on demonstrations, etc.

If we consider these three policy conclusions, it is obvious that there are two big policy challenges for every government: The first is to undertake incentive oriented policy measures in order to make work less (more) attractive in the shadow (official) economy. The second is to have policy institutions which work efficiently and as a constraint for selfish politicians.

Table 2.1: Size of the shadow economy in Germany, Austria, and Switzerland in the period 1975 to 2010 – calculated using the currency demand approach and the MIMIC method

Size of the shadow economy (in percent of official GDP)						
Year	**Germany**		**Austria**		**Switzerland**	
	In %	**EUR billion**	**In %**	**EUR billion**	**In %**	**SFR billion**
1975	**5.75**	**29.6**	**2.04**	**0.9**	**3.20**	**12**
1980	**10.80**	**80.2**	**2.69**	**2.0**	**4.90**	**14**
1985	**11.20**	**102.3**	**3.92**	**3.9**	**4.60**	**17**
1990	**12.20**	**147.9**	**5.47**	**7.2**	**6.20**	**22**
1995	**13.90**	**241.1** [1)]	**7.32**	**12.4**	**6.89**	**25**
1996	**14.50**	**257.6** [1)]	**8.32**	**14.6**	**7.51**	**27**
1997	**15.00**	**274.7** [1)]	**8.93**	**16.0**	**8.04**	**29**
1998	**14.80**	**280.7** [1)]	**9.09**	**16.9**	**7.98**	**30**
1999	**15.51**	**301.8** [1)]	**9.56**	**18.2**	**8.34**	**32**
2000	**16.03**	**322.3** [1)]	**10.07**	**19.8**	**8.87**	**35**
2001	**16.02**	**329.8** [1)]	**10.52**	**21.1**	**9.28**	**37.5**
2002	**16.59**	**350.4** [1)]	**10.69**	**21.8**	**9.48**	**38.7**
2003	**17.10**	**370.0** [1)]	**10.86**	**22.5**	**9.52**	**39.4**
2004	**16.12**	**356.1** [1)]	**11.00**	**23.0**	**9.43**	**39.5**
2005	**15.41**	**346.2** [1)]	**10.27**	**22.0**	**9.05**	**38.7**
2006	**15.00**	**345.5** [1)]	**9.51**	**21.20**	**8.48**	**37.0**
2007	**14.74**	**349.0**[1)]	**9.06**	**20.80**	**8.23**	**36.8**
2008	**14.22**	**346.8** [1)]	**8.07**	**19.92**	**7.96**	**35.4**
2009 [2)]	**14.57**	**351.8** [1)]	**8.47**	**20.50**	**8.28**	**36.4**
2010 [2)]	**14.65**	**359.2** [1)]	**8.67**	**21.32**	**8.34**	**37.2**

Source: Own calculations (2010).

1) From 1995 figures for the *whole* of Germany.

2) Forecast, or estimate, as applicable, as the official statistics are not yet available

Table 2.2: Effects of the global economic crisis/ recession and some economic policy measures of the CDU / CSU / FDP government on the shadow economy in 2010

(Policy) Measures in 2010	Increase (+) / decrease (-) of the underground economy and [] average value
(1) Economic crisis: GDP rise in unemployment by 600,000 to 4.100 Mio.	+ 7.600 to + 10.100 [8.850] million €
(2)Decrease in health insurance contribution rate by 0.6 percentage points to 14.9%.	- 500 to – 800 [- 650] million €
(3) Various tax deductions	- 900 to – 1.400 [- 1.150] million €
(4) Introduction of minimum wages in the fields of painting, garbage collection and mining.	+ 200 to + 400 [+ 300] million €
Net effect for 2010	+ 6.400 to 8.300 [7.350] million €

Source: Own calculations.

Table 2.3: Breakdown of the shadow economy into economic and service sectors in Greece over 2008/2009 [1)]

Sector	Breakdown of shadow economy Greece 2008/2009	
	In %	EUR billion
Construction sector and skilled manual trades (including repairs)	20%	12.30
Other trades and industries (motor vehicles, machines, etc.)	19%	11.69
Services (Hotels, restaurants, etc.)	22%	14.19
Entertainment and leisure sector	21%	13.55
Miscellaneous trades and domestic services (private tuition, hairdressing, babysitting)	18%	11.61
Total underground economy	100%	61.5

1) Source: Own calculations (2010).

Table 2.4: Breakdown of the shadow economy in the construction trade and skilled manual trades in Greece over 2008/2009

Sector	Breakdown of shadow economy in construction trade and skilled manual trades Greece 2008/2009	
	In %	EUR billion
Main construction trade	35%	4.31
Construction-related trades	26%	3.20
Skilled manual trades in the construction sector	18%	2.21
Miscellaneous repairs (televisions, electric appliances, domestic appliances)	21%	2.58
TOTAL Construction trade and skilled manual trades (including repairs)	100 %	12.30

Table 2.5: Size of the shadow economy in 21 OECD countries from 1989/90 to 2010 (in % of official GDP) using the cash approach and the MIMIC method

OECD countries	Average 1989/90	Average 1994/95	Average 1997/98	Average 1999/00	Average 2001/02	2003	2004	2005	2006	2007	2008	2009	2010[1]
1. Australia	10.1	13.5	14.0	14.3	14.1	13.7	13.2	12.6	11.4	11.7	10.6	10.9	11.1
2. Belgium	19.3	21.5	22.5	22.2	22.0	21.4	20.7	20.1	19.2	18.3	17.5	17.8	17.9
3. Canada	12.8	14.8	16.2	16.0	15.8	15.3	15.1	14.3	13.2	12.6	12.0	12.6	12.7
4. Denmark	10.8	17.8	18.3	18.0	17.9	17.4	17.1	16.5	15.4	14.8	13.9	14.3	14.4
5. Germany	11.8	13.5	14.9	16.0	16.3	17.1	16.1	15.4	15.0	14.7	14.2	14.6	14.7
6. Finland	13.4	18.2	18.9	18.1	18.0	17.6	17.2	16.6	15.3	14.5	13.8	14.2	14.3
7. France	9.0	14.5	14.9	15.2	15.0	14.7	14.3	13.8	12.4	11.8	11.1	11.6	11.7
8. Greece	22.6	28.6	29.0	28.7	28.5	28.2	28.1	27.6	26.2	25.1	24.3	25.0	25.2
9. United Kingdom	9.6	12.5	13.0	12.7	12.5	12.2	12.3	12.0	11.1	10.6	10.1	10.9	11.1
10. Ireland	11.0	15.4	16.2	15.9	15.7	15.4	15.2	14.8	13.4	12.7	12.2	13.1	13.2
11. Italy	22.8	26.0	27.3	27.1	27.0	26.1	25.2	24.4	23.2	22.3	21.4	22.0	22.2
12. Japan	8.8	10.6	11.1	11.2	11.1	11.0	10.7	10.3	9.4	9.0	8.8	9.5	9.7
13. Netherlands	11.9	13.7	13.5	13.1	13.0	12.7	12.5	12.0	10.9	10.1	9.6	10.2	10.3
14. New Zealand	9.2	11.3	11.9	12.8	12.6	12.3	12.2	11.7	10.4	9.8	9.4	9.9	9.9
15. Norway	14.8	18.2	19.6	19.1	19.0	18.6	18.2	17.6	16.1	15.4	14.7	15.3	15.4
16. Austria	6.9	8.6	9.0	9.8	10.6	10.8	11.0	10.3	9.7	9.4	8.1	8.47	8.67
17. Portugal	15.9	22.1	23.1	22.7	22.5	22.2	21.7	21.2	20.1	19.2	18.7	19.5	19.7
18. Sweden	15.8	19.5	19.9	19.2	19.1	18.6	18.1	17.5	16.2	15.6	14.9	15.4	15.6
19. Switzerland	6.7	7.8	8.1	8.6	9.4	9.5	9.4	9.0	8.5	8.2	7.9	8.3	8.34
20. Spain	16.1	22.4	23.1	22.7	22.5	22.2	21.9	21.3	20.2	19.3	18.7	19.5	19.8
21. U.S.A.	6.7	8.8	8.9	8.7	8.7	8.5	8.4	8.2	7.5	7.2	7.0	7.6	7.8
Unweighted average of 21 OECD countries	12.7	16.2	16.8	16.8	16.7	16.5	16.1	15.6	14.5	13.9	13.3	13.8	14.0

→ Source: Own calculations, 2010, (Prof. Dr. Friedrich Schneider, University of Linz, Altenbergerstraße 69, A-4040 Linz/Auhof).

1) Provisional figures.

Table 3.1: Breakdown of the shadow economy into economic and service sectors in Austria and Germany [1)]

Sector	Breakdown of shadow economy Austria 2010		Breakdown of shadow economy Germany 2010	
	In %	EUR billion	In %	EUR billion
Construction sector and skilled manual trades (including repairs)	39%	8.2	38%	136.5
Other trades and industries (motor vehicles, machines, etc.)	16%	3.3	17%	61.1
Services (Hotels, restaurants, etc.)	16%	3.3	17%	61.1
Entertainment and leisure sector	12%	2.5	13%	47.0
Miscellaneous trades and domestic services (private tuition, hairdressing, babysitting)	17%	3.6	15%	53.5
Total underground economy	100%	20.9	100%	351.8

Table 3.2: Breakdown of the underground economy in the construction trade and skilled manual trades [1)]

Sector	Breakdown of shadow economy in construction trade and skilled manual trades Austria 2010		Breakdown of shadow economy in construction trade and skilled manual trades Germany 2010	
	In %	EUR billion	In %	EUR billion
Main construction trade	41%	3.4	35%	47.8
Construction-related trades	30%	2.5	26%	35.5
Skilled manual trades in the construction sector	16%	1.3	18%	24.6
Miscellaneous repairs (televisions, electric appliances, domestic appliances)	13%	1.0	21%	28.6
TOTAL Construction trade and skilled manual trades (including repairs)	100 %	8.2	100 %	136.5

Table 4.1: Development of full-time non-foreign moonlighters and illegal foreign workers in Germany, Austria, and Switzerland in the period 1995 to 2010[1)]

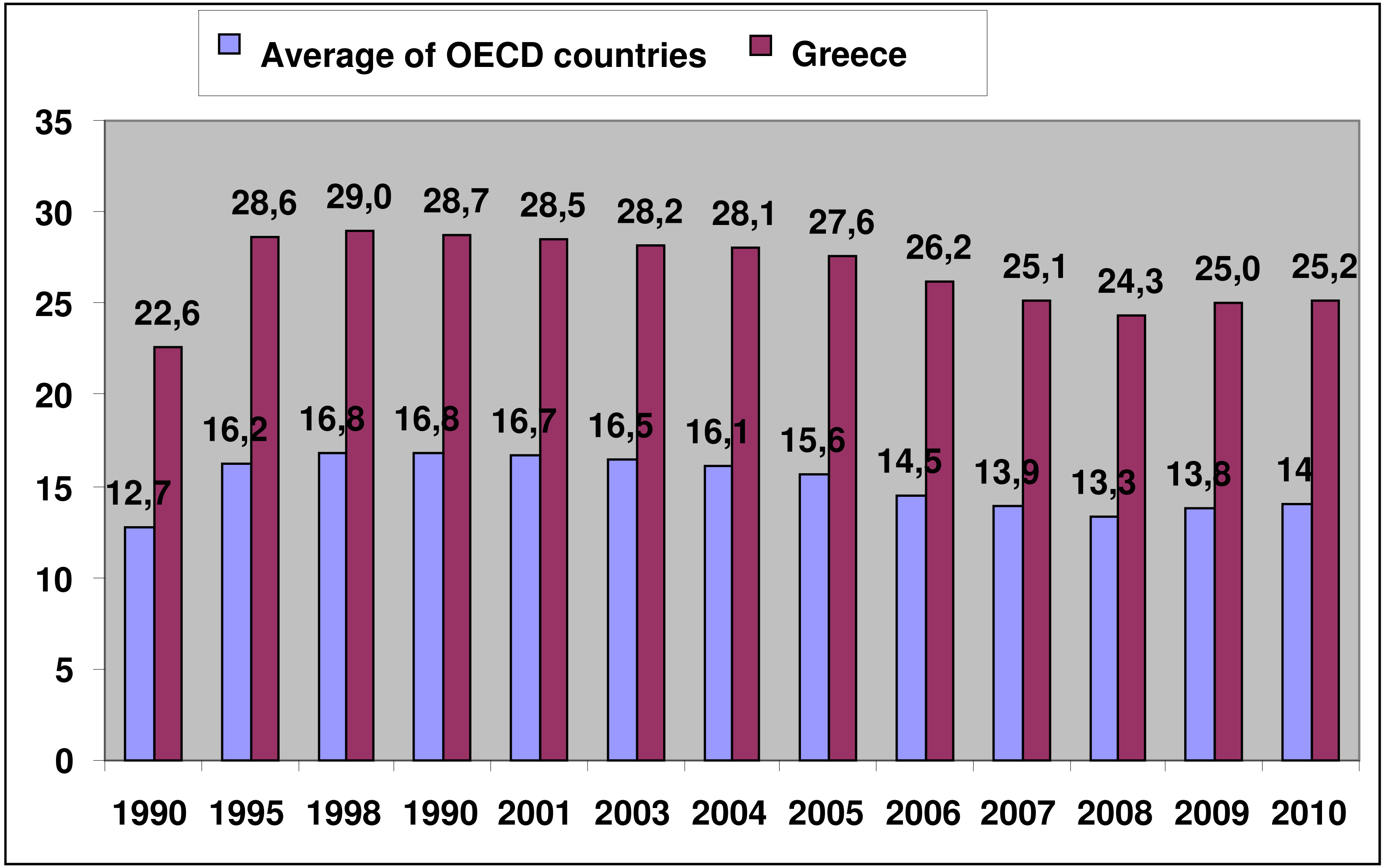
Year	Development of full-time non-foreign moonlighters and illegal foreign workers in thousands of people					
	Germany		Austria		Switzerland	
	Full-time non-foreign moonlighters	Illegal foreign workers	Full-time non-foreign moonlighters	Illegal foreign workers	Full-time non-foreign moonlighters	Illegal foreign workers
1995	7,320	878	575	75	391	55
1996	7,636	939	617	83	426	61
1997	7,899	987	623	86	456	67
1998	8,240	1,039	634	89	462	69
1999	8,524	1,074	667	93	484	74
2000	8,621	1,103	703	99	517	79
2001	8,909	1,149	734	104	543	84
2002	9,182	1,194	746	109	556	88
2003	9,420	1,225	769	112	565	90
2004	9,023	1,103	789	114	560	89
2005	8,549	1,002	750	104	520	82
2006	8,124	952	716	98	493	78
2007	8,206	961	709	97	490	77
2008	8,154	955	679	93	471	74
2009[2)]	8,272	968	713	98	484	76
2010[2)]	8,677	1,022	741	102	495	78

Source: Own calculations (2010).

1) Please note: **Non-foreign full-time moonlighters are an artificial quantity**, calculated from the billions of hours worked in the shadow economy. The illegal foreign workers represent an initial estimate of foreigners working illegally (in underground economic activities).

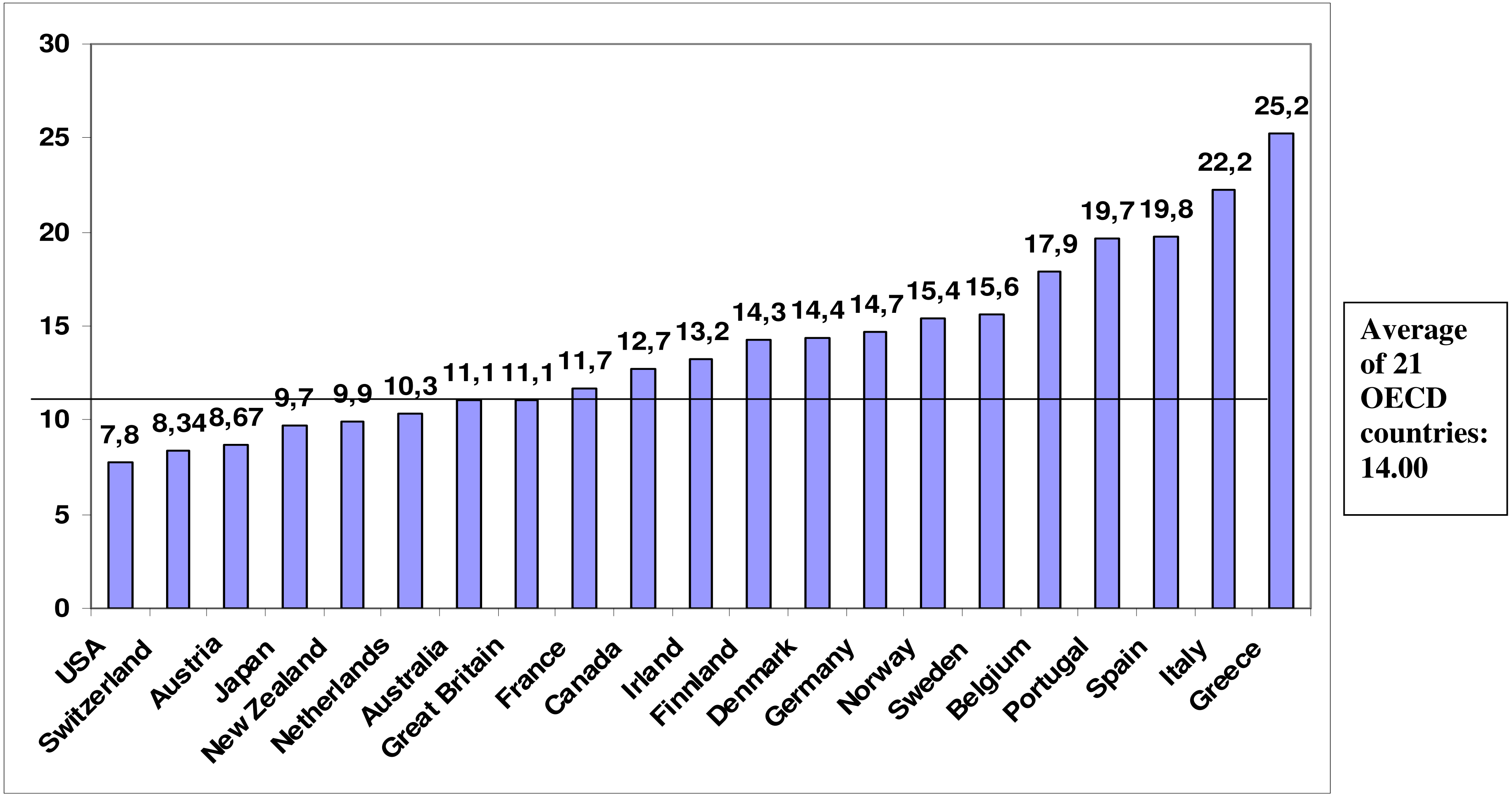
2) Forecast or estimate, as applicable, as the official labor market data are not yet available.

Figure 2.1: The Size and Development of the Greek Shadow Economy and the Average one of 21 OECD countries over 1990 to 2010



Source: Own calculations.

Figure 2.2: The Size of the Shadow Economies of 21 OECD countries in 2010 (Projection); method: MIMIC and currency demand functions



Source: Own calculations.

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