A joint initiative of Ludwig-Maximilians-Universität and the Ifo Institute

CESifo Forum

Summer 2012

Volume 13, No. 2

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CESifo Forum ISSN 1615-245X (print version)
ISSN 2190-717X (electronic version)
A quarterly journal on European economic issues
Publisher and distributor: Ifo Institute, Poschingerstr. 5, D-81679 Munich, Germany
Telephone ++49 89 9224-0, Telefax ++49 89 9224-98 53 69, e-mail ifo@ifo.de
Annual subscription rate: €50.00
Single subscription rate: €15.00
Shipping not included
Editors: John Whalley (jwhalley@uwo.ca) and Chang Woon Nam (nam@ifo.de)
Indexed in EconLit

www.cesifo-group.de

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The Shadow Economy and Tax Evasion: What Do We (Not) Know?

Friedrich Schneider*

Introduction

Fighting tax evasion and the shadow economy have been important policy goals in OECD countries in recent decades. Achieving these goals requires information on the size and development of the shadow economy, and on the reasons why people are engaged in shadow economy activities. This contribution therefore focuses on the size and development of the shadow economy, black activities, undeclared work and tax evasion.[1]

The article is structured as follows: the second section presents theoretical considerations about the definition and measurement of the shadow economy and also discusses the main factors determining its size. The third section discusses the empirical results of the size and development of the shadow economy and the final section presents some conclusions.

Some theoretical considerations about the shadow economy

Defining the Shadow Economy

Most authors trying to measure the shadow economy still face the difficulty of finding a precise definition of the shadow economy. According to one commonly used definition, it comprises all currently unregistered economic activities that contribute to the officially calculated gross national product. Smith (1994, 18) defines it as "market-based production of goods and services, whether legal or illegal, that escapes detection in the official estimates of GDP". Put differently, one of the broadest definitions of the shadow economy is 'those economic activities and the income derived from them that circumvent or otherwise avoid government regulation, taxation or observation'.[2]

In this paper the following more narrow definition of the shadow economy is used. The shadow economy includes all market-based legal production of goods and services that is deliberately concealed from public authorities for the following reasons:

1. To avoid payment of income, value added or other taxes,
2. To avoid payment of social security contributions,
3. To avoid compliance with certain legal labour market standards, such as minimum wages, maximum working hours, safety standards, etc., and
4. To avoid compliance with certain administrative obligations, such as completing statistical questionnaires or other administrative forms.

The article does not cover typically illegal underground economic activities that share the characteristics of classical crimes like burglary, robbery, drug dealing, etc. It also excludes the informal household economy, which consists of all household services and production.

Measuring the shadow economy[3]

The definition of the shadow economy plays an important role in assessing its size. A clear definition can rule out a number of ambiguities and controversies. My analysis focuses on productive economic activities that would normally be included in the national accounts, but which remain underground due to tax or regulatory burdens. Although such legal activities contribute to a country's added value, they are not captured in the national accounts because

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[1] The tax evasion literature is not extensively handled in this paper, see Andreoni, Erard and Feinstein (1998) for the authoritative survey; Feld and Frey (2007) or Kirchler (2007) for broader interdisciplinary approaches; or the papers by Kirchler, Maciejovsky and Schneider (2003); Kastlunger, Kirchler, Mittore and Pitters (2009); Kirchler, Hoelzl and Wahl (2007).

[2] These definitions are used by Feige (1989 and 1994), Schneider (2003 and 2005); Frey and Pommerehne (1984); Del'Anno (2003); and Del'Anno and Schneider (2003) – see also Fleming, Roman and Farrell (2000) or Feld and Larsen (2005) for example.

[3] Compare also Feld and Schneider (2010), and Schneider (2011).

they are produced in illicit ways. From an economic and social perspective, soft forms of illicit employment like moonlighting (e.g. construction work in private homes) and its contribution to aggregate added value can be assessed rather positively.

Although the issue of the shadow economy has been investigated for a long time, the discussion regarding the 'appropriate' methodology to assess its scope has not come to an end yet.[4] There are three methods of assessment:

(1) Direct procedures at a micro level that aim to determine the size of the shadow economy at a particular point in time. An example is the survey method.
(2) Indirect procedures that make use of macroeconomic indicators in order to proxy the development of the shadow economy over time.
(3) Statistical models that use statistical tools to estimate the shadow economy as an 'unobserved' variable.

In recent years estimation of the shadow economy has been based upon a combination of the MIMIC procedure and upon the currency demand method; or the use of the currency demand method only. The MIMIC procedure assumes that the shadow economy remains an unobserved phenomenon (latent variable), which can be estimated using quantitatively measurable causes of illicit employment (e.g. tax burden and regulation intensity), and indicators reflecting illicit activities (e.g. currency demand, official GDP and official working time). A disadvantage of the MIMIC procedure is the fact that it produces only relative estimates of the size and the development of the shadow economy. Thus, the currency demand method is used to calibrate the relative into absolute estimates by using two or three absolute values of the absolute size of the shadow economy.[5]

In addition, the size of the shadow economy is estimated by using survey methods (Feld and Larsen 2005, 2008 and 2009). In order to minimize the number of respondents dishonestly replying or totally declining answers to the sensitive questions, structured interviews are undertaken (usually face-to-face) in which the respondents slowly get accustomed to the main purpose of the survey. As with the contingent valuation method (CVM) in environmental economics (Kopp *et al.* 1997), a first part of the questionnaire aims to shape respondents' perception as to the issue at hand. In a second part, questions about respondents' activities in the shadow economy are asked, and the third part contains the usual socio-demographic questions. In addition to the studies by Merz and Wolff (1993), Feld and Larsen (2005, 2008 and 2009), Haigner *et al.* (2011) and Enste and Schneider (2006) for Germany, the survey method has been applied in the Nordic countries and Britain (Isachsen and Strøm 1985; Pedersen 2003), as well as in the Netherlands (van Eck and Kazemier 1988; Kazemier 2006). These two sets of approaches are most broadly used in empirical research. Although each has its drawbacks, and although biases in the estimates of the shadow economy almost certainly prevail, no better data is currently available.

In tax compliance research, the most interesting data stem from actual tax audits by the US Internal Revenue Service (IRS). In the Taxpayer Compliance Measurement Program (TCMP), the actual compliance behaviour of taxpayers is observed and is used for empirical analysis (Andreoni, Erard and Feinstein 1998). The approach of the IRS is broader in a certain sense as tax evasion from all sources of income is considered, while the two methods discussed above aim to capture the shadow economy or undeclared work, and thus mainly measure tax evasion from labour income. Even the data obtained from the TCMP is biased, however, because detected tax non-compliance may only be the tip of the iceberg. Although perfect data on tax non-compliance does not therefore exist, imperfect data in this area can still provide interesting insights regarding the size, the development and the determinants of the shadow economy and of the shadow economy labour force.

Main causes determining the shadow economy and tax evasion

A useful starting point for a theoretical discussion of tax non-compliance is the paper by Allingham and Sandmo (1972) on income tax evasion. While the

[4] For the strengths and weaknesses of the various methods see Bhattacharyya (1999); Breusch (2005a and 2005b); Dell'Anno and Schneider (2009); Dixon (1999); Feige (1989); Feld and Larsen (2005); Feld and Schneider (2010); Giles (1999a, 1999b and 1999c); Schneider (1986, 2001, 2003, 2005, 2006 and 2011); Schneider and Enste (2000a, 2000b, 2002 and 2006); Tanzi (1999); Thomas (1999).

[5] This indirect approach is based on the assumption that cash is used to make transactions within the shadow economy. By using this method one econometrically estimates a currency demand function including independent variables like tax burden, regulation etc. which 'drive' the shadow economy. This equation is used to make simulations of the amount of money that would be necessary to generate the official GDP. This amount is then compared with the actual money demand and the difference is treated as an indicator for the development of the shadow economy. On this basis the calculated difference is multiplied by the velocity of money of the official economy and one gets a value added figure for the shadow economy – see footnote 10 for references that critically discuss this method.

shadow economy and tax evasion are not congruent, activities in the shadow economy in most cases imply the evasion of direct or indirect taxes, such that the factors affecting tax evasion will most certainly also affect the shadow economy. According to Allingham and Sandmo (1972) tax compliance depends on its expected costs and benefits. The benefits of tax non-compliance result from the individual marginal tax rate and the true individual income. In the case of the shadow economy the individual marginal tax rate is obtained by calculating the overall marginal tax burden from indirect and direct taxes, including social security contributions. The individual income generated in the shadow economy is usually categorized as labour income and less probably as capital income. The expected costs of non-compliance derive from deterrence enacted by the state. Tax non-compliance thus depends on the state's auditing activities, raising the probability of detection and the fines that individuals face when they are caught. As individual morality also plays a role for compliance, additional costs could pertain beyond pure punishment by the tax administration in the form of psychic costs like shame or regret, but also additional pecuniary costs if reputation loss results, for example.

Kanniainen, Pääkönen and Schneider (2004) incorporate many of these insights into their model of the shadow economy by also considering labour supply decisions. They hypothesize that tax hikes unambiguously increase the shadow economy, while the effect of public goods financed by those taxes depends on the ability to access public goods. Morality is also included in this analysis. But the costs for individual non-compliers resulting from moral norms appear to be mainly captured by state punishment, although self-esteem also plays a role.

A shortcoming of these analyses is the neglected endogeneity of tax morale and good governance, as Feld and Frey (2007) argue that tax compliance is the result of a complicated interaction between tax morale and deterrence measures. While the rules of the game must be clear to taxpayers, and as deterrence measures serve as signals for the tax morale a society wants to elicit (Posner 2000a and 2000b), deterrence could also crowd out the intrinsic motivation to pay taxes. Moreover, tax morale is not only increased if taxpayers perceive the public goods received in exchange for their tax payments worth it. It also increases if political decisions for public activities are perceived to follow fair procedures or if the treatment of taxpayers by the tax authorities is perceived to be friendly and fair. Tax morale is thus not exogenously given, but is influenced by deterrence, the quality of state institutions and the constitutional differences among states.

(a) Deterrence[6]

Although the traditional economic theory of tax non-compliance derives unambiguous predictions as to their impact only for deterrence measures and despite the strong focus on deterrence in policies fighting the shadow economy, there is surprisingly little known about the effects of deterrence from empirical studies. In their survey on tax compliance, Andreoni, Erard and Feinstein (1998) report that deterrence matters for tax evasion, but that the reported effects are rather small. Blackwell (2009) finds strong deterrence effects of fines and audits in experimental tax evasion. There is, however, little evidence on the shadow economy.

This is due to the fact that data on the legal background and the frequency of audits are not available on an international basis. Such data would also be difficult to collect, even for the OECD member countries. A recent study by Feld, Schmidt and Schneider (2007) demonstrates this for the case of Germany. The legal background is quite complicated in terms of differentiating fines and punishment according to the severity of the offense, establishing the true income of the non-complier, but also regionally given different directives on sentences by the courts in different Länder. Moreover, the tax authorities at a state level do not reveal how intensively auditing is taking place. With the available data on fines and audits, Feld, Schmidt and Schneider (2007) conduct a time series analysis using the estimates of the shadow economy obtained by the MIMIC approach. According to their results, deterrence does not have a consistent effect on the German shadow economy. Conducting Granger causality tests, the direction of causation (in the sense of precedence) is ambiguous, leaving room for the impact of the shadow economy on deterrence, instead of deterrence on the shadow economy.

Feld and Larsen (2005, 2008 and 2009) follow a different approach by using individual survey data for Germany. First replicating Pedersen (2003), who reports a negative impact of the subjectively perceived risk of detection by state audits on the probability of working in the shadows for the year 2001, they then extend it by adding subjectively perceived measures of

[6] This part is taken from Feld and Schneider (2010, 115–116).

fines and punishment. Fines and punishment do not exert a negative influence on the shadow economy in any of the annual waves of surveys, nor in the pooled regressions for the years 2004–2007 (about 8000 observations overall). The subjectively perceived risk of detection has a robust and significant negative impact in individual years only for women. In the pooled sample for 2004–2007, which minimizes sampling problems, the probability of detection has also a significantly negative effect on the probability of working in the shadow economy for men (while retaining its impact on women) and is robust across different specifications.[7]

Pedersen (2003) reports the negative effects of the subjectively perceived risk of detection on the probability of conducting undeclared work in the shadows for men in Denmark in 2001 (marginally significant),[8] for men in Norway in 1998/2002 (highly significant), for men and women in Sweden in 1998 (highly significant in the first and marginally significant in the second case), and no significant effect for Britain in 2000. Moreover, van Eck and Kazemier (1988) report the significant negative effect of a high perceived probability of detection on participation in the hidden labour market for the Netherlands in 1982/1983. None of these studies includes perceived fines and punishments as explanatory variables. The large scale survey study of Germany by Feld and Larsen (2005 and 2009) thus appears to be the most careful analysis of deterrence effects on undeclared work to date.

Overall, there is little convincing evidence on the proper working of deterrence as it is always the combination of audits and fines that matters according to theoretical analysis, but also to pure plausibility arguments. The reasons for the unconvincing evidence of deterrence effects are discussed in the tax compliance literature by Andreoni, Erard and Feinstein (1998), Kirchler (2007) or Feld and Frey (2007). They range from interactions between tax morale and deterrence, thus the possibility that deterrence crowds out tax morale, to more mundane arguments like misperceptions of taxpayers. Likewise, these reasons could be important for the evidence on the deterrence effects at work in the shadow economy. As the latter mainly stem from survey studies, the insignificant findings for fines and punishment may also result from shortcomings in the survey design.

(b) Tax and social security contribution burdens

In contrast to deterrence, almost all studies ascertain that the tax and social security contribution burdens are among the main causes for the existence of the shadow economy.[9] Since taxes affect labour-leisure choices and stimulate labour supply in the shadow economy, the distortion of the overall tax burden is a major concern. The bigger the difference between the total labour cost in the official economy and after-tax earnings (from work), the greater the incentive to reduce the tax wedge and work in the shadow economy. Since the tax wedge depends on the level and increase of the social security burden/payments and the overall tax burden, they are key features of the existence and the increase in the shadow economy.

(c) Intensity of regulations

Increased intensity of regulations, for example labour market regulations, trade barriers, and labour restrictions for immigrants. is another important factor that reduces the freedom (of choice) for individuals engaged in the official economy. Johnson, Kaufmann, and Zoido-Lobatón (1998b) find significant empirical evidence of the influence of (labour) regulations on the shadow economy; and the impact is clearly described and theoretically derived in other studies, e.g. for Germany *Deregulierungskommission*/Deregulation Commission (1991).[10] Regulations lead to a substantial increase in labour costs in the official economy. However, since most of these costs can be shifted to employees, regulations provide for another incentive to work in the shadow economy where they can be avoided. Johnson, Kaufmann and Shleifer (1997) report empirical evidence supporting their model, which predicts that countries with higher general regulation of their economies tend to have a higher share of the unofficial economy in total GDP. They conclude that it is the enforcement of regulation that is the key factor for the burden levied on firms and individuals, and not the overall extent of regulation – mostly not enforced – which drives firms into the shadow economy. Friedman, Johnson, Kaufmann and Zoido-Lobaton (2000) arrive at a similar conclusion. In their study every available measure of regulation is significantly correlated with the share of the

7 An earlier study by Merz and Wolff (1993) does not analyse the impact of deterrence on undeclared work.

8 The earlier study by Isachsen and Strøm (1985) for Norway does also not properly analyse the impact of deterrence on undeclared work.

9 See Schneider (2000, 2003, 2005, 2009 and 2011); Johnson, Kaufmann and Zoido-Lobatón (1998a and 1998b); Tanzi (1999); Giles (1999a); Mummert and Schneider (2001); Giles and Tedds (2002) and Dell'Anno (2003); Feld and Schneider (2010).

10 The importance of regulation on the official and unofficial (shadow) economy is more recently investigated by Loayza, Oviedo and Servén (2005a and 2005b). Kucera and Roncolato (2008) extensively analyze the impact of labor market regulation on the shadow economy.

unofficial economy and the estimated sign of the relationship is unambiguous: more regulation is correlated with a larger shadow economy.

(d) Public sector services

An increase of the shadow economy can lead to reduced state revenues, which in turn reduce the quality and quantity of publicly provided goods and services. Ultimately, this can lead to an increase in the tax rates for firms and individuals in the official sector, quite often combined with a deterioration in the quality of the public goods (such as the public infrastructure) and of the administration, resulting in even stronger incentives to participate in the shadow economy. Johnson, Kaufmann and Zoido-Lobatón (1998a and 1998b) present a simple model of this relationship. According to their findings smaller shadow economies occur in countries with higher tax revenues achieved by lower tax rates, fewer laws and regulations and less bribery facing enterprises. Countries with a better rule of law, which is financed by tax revenues, also have smaller shadow economies. Transition countries have higher levels of regulation leading to a significantly higher incidence of bribery, higher effective taxes on official activities and a large discretionary framework of regulations and consequently a higher shadow economy. Their overall conclusion is that "wealthier countries of the OECD, as well as some in Eastern Europe, find themselves in the 'good equilibrium' of a relatively low tax and regulatory burden, sizeable revenue mobilization, good rule of law and corruption control, and a [relatively] small unofficial economy. By contrast, a number of countries in Latin American and the former Soviet Union exhibit characteristics consistent with a 'bad equilibrium': tax and regulatory discretion and burden on the firm are high, the rule of law is weak, and there is a high incidence of bribery and a relatively high share of activities in the unofficial economy" (Johnson, Kaufmann and Zoido-Lobatón 1998a, I).

(e) Other public institutions

Recently, various authors[11] have considered the quality of public institutions as another key factor in the development of the informal sector. They argue that the efficient and discretionary application of tax systems and regulations by government may play a crucial role in the decision over whether to conduct undeclared work, and may be even more important than the actual burden of taxes and regulations. In particular, corruption of bureaucracy and government officials seems to be associated with larger unofficial activity, while a good rule of law by securing property rights and contract enforceability, increases the benefits of being formal.

Hence, it is important to theoretically and empirically analyse the effect of political institutions like the federal political system on the shadow economy. If the development of the informal sector is considered a consequence of the failure of political institutions to promote an efficient market economy, since entrepreneurs go underground when there is inefficient public goods provision, then the effect of institutions on the individual's incentive to operate unofficially can be assessed. In a federal system, competition among jurisdictions and the mobility of individuals act as constraints on politicians because 'choices' will be induced that provide incentives to adopt policies that are closer to a majority of voters' preferences. Frequently, the efficient policies are characterized by a certain level of taxation, mostly spent on productive public services. In fact, the production in the formal sector benefits from a higher provision of the productive public services and is negatively affected by taxation, while the shadow economy reacts in the opposite way. As fiscal policy gets closer to a majority of voters' preferences in federal systems, the size of the informal sector goes down. This leads to the hypothesis that the size of the shadow economy should be lower in a federal system than in a unitary state, *ceteris paribus*. A similar effect analysing the institution of direct democracy on the shadow economy is shown in Schneider and Teobaldelli (2012). They empirically demonstrate that the more direct institutions are used; the lower is the shadow economy, ceteris paribus.

(f) Tax morale

In addition to the incentive effects discussed before, the efficiency of the public sector has an indirect effect on the size of the shadow economy because it affects tax morale. As Feld and Frey (2007) argue, tax compliance is driven by a psychological tax contract that entails rights and obligations from taxpayers and citizens on the one hand, but also from the state and its tax authorities on the other hand. Taxpayers are more heavily inclined to pay their taxes honestly if they get valuable public services in exchange. However, taxpayers are honest even in cases when the benefit prin-

[11] See e.g. Johnson *et al.* (1998a and 1998b); Friedman *et al.* (2000); Dreher and Schneider (2009); Dreher, Kotsogiannis and McCorriston (2007 and 2009); Teobaldelli (2011); Schneider (2010); Buehn and Schneider (2012).

ciple of taxation does not hold, i.e. for redistributive policies, if the political decisions underlying such policies follow fair procedures. Finally, the treatment of taxpayers by the tax authority plays a role. If taxpayers are treated like partners in a (tax) contract instead of subordinates in a hierarchical relationship, taxpayers will stick to their obligations of the psychological tax contract more easily. In addition to the empirical evidence on these arguments reported by Feld and Frey (2007), Kirchler (2007) presents a comprehensive discussion of the influence of such factors on tax compliance.

Regarding the impact of tax morale on the shadow economy, there is scarce and only recent evidence. Using data on the shadow economy obtained by the MIMIC approach, Torgler and Schneider (2009) report the most convincing evidence for a negative effect of tax morale. They particularly address causality issues and establish a causal negative relation between tax morale and the size of the shadow economy. This effect is also robust to the inclusion of additional explanatory factors and specifications. These findings are also in line with earlier preliminary evidence by Körner *et al.* (2006). Using survey data, Feld and Larsen (2005 and 2009) likewise report a robust negative effect of tax morale in particular and social norms in general on the probability of respondents conducting undeclared work.[12] Interestingly, the estimated effects of social norms are quantitatively more important than the estimated deterrence effects. Van Eck and Kazemier (1988) also report a marginally significant effect of tax morale on participation in the hidden labour market.

Size of the shadow economies in highly developed OECD countries

Development and size of the shadow economy in German-speaking countries

Existing estimates of the German shadow economy (measured in percentage of official GDP) are shown in Table 1 (see also Feld *et.al.* 2007). The oldest estimate uses the survey method of the Institute for Demoscopy (IfD) in Allensbach, Germany, and shows that the shadow economy was 3.6 percent of official GDP in 1974. In a much later study, Feld and

[12] The importance of this variable with respect to theory and empirical relevance is also shown in Frey (1997), Feld and Frey (2002a, 2002b and 2007), and Torgler and Schneider (2009).

Table 1

Size of the shadow economy in Germany according to different methods (as percentage of official GDP)

Method	Shadow economy in Germany (in percentage of official GDP) in: 1970	1975	1980	1985	1990	1995	2000	2005	Source
Survey	–	3.6[1)]	–	–	–	–	–	–	IfD Allensbach (1975)
	–	–	–	–	–	–	4.1[2)]	3.6[2)]	Feld and Larsen (2005, 2008)
Discrepancy between expenditure and income	11.0	10.2	13.4	–	–	–	–	–	Lippert and Walker (1997)
Discrepancy between official and actual employment	23.0	38.5	34.0	–	–	–	–	–	Langfeldt (1984a, 1984b)
Physical input method	–	–	–	14.5	14.6	–	–	–	Feld and Larsen (2005)
Transactions approach	17.2	22.3	29.3	31.4	–	–	–	–	
Currency demand approach	3.1	6.0	10.3	–	–	–	–	–	Kirchgässner (1983)
	12.1	11.8	12.6	–	–	–	–	–	Langfeldt (1984a, 1984b)
	4.5	7.8	9.2	11.3	11.8	12.5	14.7	–	Schneider and Enste (2000)
Latent (MIMIC) approach	5.8	6.1	8.2	–	–	–	–	–	Frey and Weck (1984)
	–	–	9.4	10.1	11.4	15.1	16.3	–	Pickhardt and Sarda Pons (2006)
	4.2	5.8	10.8	11.2	12.2	13.9	16.0	15.4	Schneider (2005, 2007)
Soft modelling	–	8.3	–	–	–	–	–	–	Weck-Hannemann (1983)

[1)] 1974. – [2)] 2001 and 2005; calculated using wages in the official economy.

Larsen (2005 and 2008) undertook an extensive research project using the survey method to estimate shadow economic activities in the years 2001 to 2006.[13] Using the officially paid wage rate, they concluded that these activities reached 4.1 percent in 2001, 3.1 percent in 2004, 3.6 percent in 2005 and 2.5 percent in 2006. Using the (much lower) shadow economy wage rate these estimates shrink, however, to 1.3 percent in 2001 and 1.0 percent in 2004, respectively. If the discrepancy method is applied, for which estimates from 1970 to 1980 are available, the German shadow economy is much larger: using the discrepancy between expenditure and income, gives approximately 11 percent for the 1970s, and using the discrepancy between official and actual employment, roughly 30 percent. The physical input methods from which estimates for the 1980s are available, 'deliver' values of around 15 percent for the second half of that decade. The (monetary) transaction approach developed by Feige (1989) places the shadow economy at 30 percent between 1980 and 1985. Yet another monetary approach, the currency demand approach – the first person to undertake an estimation for Germany was Kirchgässner (1983 and 1984) – provides values of 3.1 percent (1970) and 10.1 percent (1980). Kirchgässner's values are quite similar to those obtained by Schneider and Enste (2000 and 2002), who also used a currency demand approach to value the size of the shadow economy at 4.5 percent in 1970 and 14.7 percent in 2000. Finally, looking at latent MIMIC estimation procedures, the first being conducted by Frey and Weck-Hannemann (1984), and later, Schneider and others followed for Germany, again, the estimations for the 1970s are quite similar.

Thus, one can see that different estimation procedures produce different results. It is safe to say that the figures produced by the transaction and the discrepancy approaches are rather unrealistically large: the size of the shadow economy at almost one third of official GDP in the mid-1980s is most likely to be an overestimate. The figures obtained using the currency demand and hidden variable (latent) approaches, on the other hand, are relatively close together and much

[13] In this paper there is no extensive discussion about the various methods to estimate the size and development of the shadow economy; I do also not discuss the strength and weakness of each method – see Schneider and Enste (2000), Schneider (2005), Feld and Larsen (2005, 2008 and 2009), Pedersen (2003), and Giles (1999a, 1999b and 1999c).

Table 2

Size of the shadow economy (as % of official GDP) in 21 OECD countries between 1989/90 and 2007 estimated using MIMIC method and currency demand approach to calibrate the MIMIC values

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

Source: Own calculations.

lower than those produced by other methods (i.e. the discrepancy or transaction approaches). This similarity is not surprising given the fact that the estimates of the shadow economy using the latent (MIMIC) approach were measured by taking point estimates from the currency demand approach. The estimates from the MIMIC approach can be regarded as the upper boundary of the size of the shadow economy. For the reasons outlined in the second section, the estimates obtained from the survey approach constitute its lower boundary.

Size and development of the shadow economy in 21 OECD countries

Table 2 presents the findings for 21 OECD countries until 2007. They clearly reveal that, since the end of 1990s, the size of the shadow economy in most OECD countries has continued to decrease. The unweighted average for all countries in 1999/2000 was 16.8 percent and dropped to 13.9 percent in 2007. This means, that since 1997/98 – the year in which the shadow economy was the biggest in most OECD countries, it has continuously shrunk. In Germany, Austria and Switzerland did the growing trend last longer and was only reversed two or three years ago. The reduction of the share of the shadow economy from GDP between 1997/98 and 2007 is most pronounced in Italy (– 5.0 percent) and in Sweden (– 4.0 percent). The German shadow economy ranges in the middle of the ranking, whereas Austria and Switzerland are located at the lower end. With 20 to 26 percent, South European countries exhibit the biggest shadow economies measured as a share of official GDP. They are followed by Scandinavian countries, where the shadow economy accounts for between 15 and 16 percent of GDP. One reason for the differences in the size of the shadow economy between these OECD countries includes, among others, that there are fewer regulations in the United States, for example, compared to the OECD country Germany where everything is forbidden that is not explicitly allowed. Another reason is the large difference in the direct and indirect tax burden among the OECD countries, with the lowest in the United States and Switzerland and the highest in the Scandinavian countries.

Conclusions

This paper discusses some of the most recent developments in research on the shadow economy with respect to its driving forces. The result of the studies report the strong effects of tax pressure, of regulation and of tax morale, but also underline the importance of tax policies and state institutions to the shadow economy.

The discussion of the recent literature shows that economic opportunities for employees, the overall situation in the labour market, and not least unemployment are crucial for an understanding of the dynamics of the shadow economy. Individuals look for ways to improve their economic situation and thus contribute productively to the aggregate income of a country. This holds regardless of their being active in the official or the unofficial economy.

Returning to the title of my paper 'The shadow economy and tax evasion: what do we (not) know?', it is clear that there is some knowledge about the size and development of the shadow economy. What remains unknown are the exact motives why people work in the shadow economy and what is their reaction if a government undertakes reforms in order to bring them back into the official economy. Many more micro studies are therefore needed to obtain more detailed knowledge about people's motivation to work in either the shadow economy and/or in its official counterpart.

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European Union Action against Tax Avoidance and Evasion

Servaas van Thiel*

Introduction

Large amounts of potential tax revenue are lost annually as a result of tax planning, tax avoidance and tax evasion activities undertaken by the private sector, often actively supported by offshore jurisdictions that maintain artificially low regulatory and tax burdens (harmful competition causing tax base erosion).[1]

Tax jurisdictions with higher average tax burdens have routinely introduced unilateral anti-abuse clauses to counter artificial tax planning constructions. They have also concluded a large number of bilateral (tax or information exchange) agreements, which provide for the exchange of 'foreseeably relevant' information on request, without regard to domestic bank secrecy rules (the 2002 OECD minimum standard).[2] Finally, they have developed multilateral responses in the OECD and G20 framework to facilitate the detection of tax evaders and to increase pressure on tax havens.[3]

Since the 2008 financial crisis in particular, the G20 has stepped up its collective (verbal) action against tax havens by declaring an end to banking secrecy at the London Summit in April 2009 and by threatening to use a toolbox of counter measures against 'uncooperative tax jurisdictions' at its Pittsburgh Summit in September 2009.[4] As a result of this new momentum, tax jurisdictions that were blacklisted by the OECD scrambled to convince the world that they accept the OECD minimum standard and that they thus effectively made it impossible for tax evaders to hide behind banking secrecy.[5]

Within the European Union a more advanced legal framework aimed at tackling tax avoidance and evasion has also recently been developed under the heading *'good governance in the tax area'*.[6] Within the EU the good governance policy covers recent regulatory action on administrative assistance between tax authorities (recovery and assessment assistance and savings tax). On the external side good governance includes the various efforts related to the EU export standards on transparency and fair tax competition, including by means of savings tax- and anti-fraud agreements with third countries.

This paper seeks to briefly assess this recent framework and formulate some recommendations for the future. As a preliminary remark one should note that, when assessing this framework, the EU is – unlike domestic governance structures – handicapped by a unanimity requirement (i.e. none of the 27 Member States must oppose a proposed action). One should also realise upfront that the EU is a multi-layered regional governance structure, in which the numerous

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1 For estimates see Fuest and Riedel (2009) and Commission Communication COM (2006) 254 final, and Tax Justice Network (TJN, 2005), Tax Us If You Can: The True Story of a Global Failure, TJN Briefing Paper, www.taxjustice.net.

2 See OECD (2010), The Global Forum on Transparency and Exchange of Information for Tax Purposes: A Background Information Brief, 14 October 2010, Article 26(1) of the OECD Model Convention on Income and on Capital, as well as the multilateral and bilateral versions of the OECD Model "Agreement on Exchange of Information on Tax Matters", http://www.oecd.org.

3 See OECD (June 2000), Towards Global Tax Cooperation, and the 2010 update of the OECD/Council of Europe Convention on Mutual Administrative Assistance in Tax Matters, http://www.oecd.org.

4 The G20 Summit in September 2009 it was agreed (in point 15 of the second part of the statement) that the leaders "stand ready to use countermeasures against tax havens from March 2010", and there was reference to a toolbox of measures such as: increased disclosure requirements on the part of taxpayers and financial institutions to report transactions involving non-cooperative jurisdictions; withholding taxes in respect of a wide variety of payments; denying deductions in respect of expense payments to payees resident in a non-cooperative jurisdiction; reviewing tax treaty policy; asking international institutions and regional development banks to review their investment policies; and giving extra weight to the principles of tax transparency and information exchange when designing bilateral aid programs (see "Leaders Statement", http://www.pittsburghsummit.gov/mediacenter/129639.htm).

5 By the end of 2010 only 10 countries were still in the category: "jurisdictions that have committed to the internationally agreed tax standard, but have not yet substantially implemented" (Belize, Liberia, Montserrat, Nauru, Niue, Panama, Vanuatu, Costa Rica, Guatemala, Uruguay) – see also OECD (2010) cited in footnote 2.

6 See Promoting Good governance in Tax Matters, COM(2009) 201 final, Council Document 9281/09 of 29 April 2009, http://register.consilium.europa.eu/.

relevant anti-fraud actors include not only the EU regulatory and executive institutions (the lawmaker adopts EU legislation, concludes international agreements, and formulates EU policies on state aid and harmful tax competition; the EU Commission implements state aid policy and acts against fraud through its anti-fraud office: OLAF), but also the 27 EU Member States (which adopt domestic anti-abuse measures, conclude bilateral and regional tax treaties, and co-decide EU legislation and action) and the European judiciary which defines the 'constitutional limits' that all of these European players must respect.

Recent EU developments in administrative assistance

Administrative cooperation or assistance between states is necessary because the latter define their tax jurisdiction in an extraterritorial way (e.g. taxing the worldwide income of residents and the domestic source income of non-residents), whereas their powers to investigate and to recover taxes stop at their borders. To close this gap between extraterritorial jurisdiction and territorial enforcement limits, states need each other for a correct assessment and full recovery of taxes, the more so if their citizens are entitled to free movement in a regional economic integration framework such as the EU.

As the needs of public sector revenue increased at the margins of the financial crisis, the European Commission submitted proposals to upgrade existing directives on mutual assistance and the exchange of information (on request, automatic, or spontaneous) when assessing and recovering taxes in general, as well as when collecting tax on savings income in particular.

Recovery assistance

The 1976 Council directive on recovery assistance (upgraded in 2001 and 2008) already required the 'requested' Member States to provide information to assist a 'requesting' Member State to correctly recover taxes. Since 2008 the rules have essentially provided that a requested Member State should: provide information on request, notify documents on behalf of the requesting Member State, recover a claim of the requesting Member State as if it was its own and take precautionary measures on the basis of domestic instruments. However, in spite of their broad scope and the increasing use made of them, these rules proved to be less than sufficient. In fact, only 5 percent of the total amount of claims for which recovery assistance was requested was actually recovered, and the process was slow because of problems linked to the recognition, transposition and translation of requests for assistance, and because of a lack of uniform instruments for enforcement or precautionary measures.[7]

That is why the Commission proposed and the Council adopted a new Directive in January 2010 (applicable from 1 January 2012), which broadens the scope and seeks to improve the efficiency of recovery assistance in a number of ways.[8] Firstly, the new directive allows assistance requests for all tax claims and related charges, involving all natural and legal persons (except *de minimus* claims of less than 1,500 euros and criminal penalties). Secondly, the Directive reduces red tape for requesting recovery assistance. There is no longer any need to exhaust domestic procedures before making a request, direct cross border notification of documents is possible without prior translation, and national enforcement documents are replaced by a uniform European instrument. In addition, the Directive increases the involvement of the requesting state in the recovery procedures of the requested state, because it also creates the possibility for officials of the requesting state to be physically present in tax offices and courts of the requested Member States, and even to examine records and interview individuals. Thirdly, the Directive provides for the 2002 OECD standard on exchange of information on request and thus makes it impossible for taxpayers to hide behind banking secrecy. Fourthly, the new Directive reinforces the possibility of taking precautionary measures and allows for early action on the basis of an original document of the requesting state. Fifthly, the Directive allows for a broad use of the information and the documents obtained through recovery assistance, as they can be used not only for tax, but also for social security and other purposes, and by all judicial and other authorities; while information obtained can even be shared with third-party Member States. Finally, the new Directive facilitates further decision making on implementing rules regarding practical arrangements, means of communication, formats and other standard forms by means of a 'comitology' procedure whereby the

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7 COM(2009) 28 final and Council doc. 6147/09 FISC 19, http://register.consilium.europa.eu/.

8 Council Directive 2010/24/EU Concerning Mutual Assistance for the Recovery of Claims Relating to Taxes, Duties and Other Measures, Official Journal L 84 of 31 March 2010, p. 1.

Commission, together with the Member States, may take decisions on certain procedural issues (no unanimity requirement).[9]

Assessment assistance

As regards assessment assistance, the 2000 Council *Ad Hoc* Working Party on Fraud[10] had already criticised the European Mutual (Assessment) Assistance Directive of 1997 for its lack of practical impact on the ground, and this was reiterated by two Commission Communications of 2004[11] (mainly triggered by the Enron and Parmalat scandals) and 2006.[12] It nevertheless took the Council until February 2011 to adopt a new assessment assistance directive, which will apply as of 1 January 2013 (except for automatic exchange of information, which will apply as of 1 January 2015).[13]

The most significant achievement of the Directive is that it introduces, as of January 2015, the automatic exchange of 'available information' on non-residents' income from employment, directors' fees, life insurance products (not covered by other Union legal instruments), pensions, and ownership of and income from immovable property.[14] In a second phase, and on the basis of a Commission report and possible proposal to be submitted before 1 July 2017, the Council will, with the aim of strengthening automatic exchange and making it more efficient, consider removing the condition of 'availability' for at least three categories of information and extending the list of categories to include dividends, capital gains and royalties.

In addition, the new directive broadens the scope and seeks to improve the efficiency of assessment assistance in a number of ways that are very much in line with the improvements made to the recovery assistance directive. Firstly, the scope of the Directive is extended to cover all possible taxes not covered by other parts of EU law, and all taxpayers, whether natural or legal persons or and 'any other legal arrangement of whatever nature and form' with or without legal personality, that owns or manages assets and is subject to any of the taxes covered by the directive. Secondly, the Directive reduces red tape for requesting assistance and the minimum conditions for a valid request for information are less cumbersome than those provided for by the OECD Model (the name and address of any person believed to be in possession of the requested information only needs to be provided to the extent known, the requesting Member State does not to provide the nature and the form of the information sought, nor to give grounds for believing that the requested information requested is held by the requested Member State). In addition, the Directive increases the involvement of the requesting state in the procedures of the requested state, because it provides for the participation of officials of the requesting state in the administrative enquiries carried out by the requested Member States. Thirdly, the requested Member State must provide the information within certain time limits (between 1 and 6 months) and, where possible, in electronic form and on the basis of standard forms and computerised formats which are to be developed in the implementation stage of the directive under the comitology (no unanimity requirement). More importantly, the requested Member State can no longer refuse to supply the requested information solely because it is held by a bank, which essentially means that tax avoiders can no longer hide behind banking secrecy laws. Fourthly, the new directive allows a wider use of the received information, i.e. for all taxes and levies referred to in the assessment and recovery assistance directives, including by a third Member State. Fifthly, the new Directive provides for further decision making on a limited number of practical issues by means of the comitology procedure (no unanimity requirement), and specifically *via* the development of standard forms and computerised standards and the evaluation of effectiveness and statistical data to be provided by the Member States to the Commission.[15]

The savings tax

Discussions on a European Savings Tax Directive (STD) started when the intra-EU capital movements

[9] For further details, see Vascega and van Thiel (2010).

[10] The 2000 Report of the *Ad Hoc* Working Party on Tax Fraud to COREPER and ECOFIN Council already identified a large number of weak points that hampered the fight against fraud including various privacy and secrecy provisions, the absence of time limits, restrictions on the use of information, the lack of a trans-national administrative culture, the abuse of tax shelters and obstacles to the involvement of tax officials of the requested state (Council doc. 8668/00 of 22 May 2000, http://register.consilium.europa.eu/).

[11] COM(2004) 611 final of 27 September 2004 on Preventing and Combating Corporate and Financial Malpractice (in particular pages 7, 8, 13 and 18).

[12] COM(2006) 254 final of 31 May 2006, Communication on an EU Anti-fraud Strategy, Concerning the Need to Develop a Coordinated Strategy to Improve the Fight against Fiscal Fraud.

[13] See Council document 5846/11 of 4 February 2011 + ADD 1 COR 1 – I/A item note on adoption, available on the Council's website at www.consilium.europa.eu). See also OJ L 64 of 11 March 2011.

[14] Automatic exchange would only cover tax periods as from 1 January 2014, and only information that is 'available' in the tax files of the Member State concerned and that is retrievable in accordance with national procedures for the gathering and processing of information. To balance performance divergences between Member States resulting from this condition, the Directive has an 'anti-free riding' provision, whereby a Member State, which does not have any category of information 'available', may be considered by other Member States as not wishing to receive any information under the directive.

[15] For more detailed information, see van Thiel and Vascega (2011).

were liberalised in 1990, but it took 13 years, and two failed attempts (1993 and 1998), before the first generation savings tax directive could be adopted in 2003,[16] and another 2 years of tough negotiations on savings tax agreements (STA) with five third countries and ten overseas territories,[17] before the new Directive and the accompanying agreements could be applied as from 1 July 2005.[18]

The 2003 STD essentially obliges any 'paying agent' (debtor, financial institution or certain EU resident intermediary entities, such as trusts, partnerships and investment clubs, that receive interest on behalf of beneficial owners) to report any 'interest payment' (defined along the lines of Article 11 of the OECD Model), which it makes to a non-resident 'beneficial owner' (any individual who receives an interest payment or for whom an interest payment is secured), to its own Member State, which will subsequently automatically provide this information to the Member State of the beneficial owner, so that the interest income can be included in the overall worldwide taxable income of the taxpayer concerned.

In view of the fact that the STD is based on the principle of automatic exchange of information, a solution had to be found to Luxembourg's main concern of Luxembourg (supported by Austria and Belgium) that competition between intra Community and third country financial market places should not be distorted. These countries therefore insisted on a *transitional period* during which they would be allowed to apply a withholding tax (35 percent as from June 2011, 75 percent of the revenue of which is transferred to the Member State of the beneficial owner), instead of automatically exchanging information, and thus to keep their banking secret until five other European financial centres (Switzerland, Liechtenstein, Monaco, Andorra, San Marino) had accepted the OECD standard on exchange of information. They also insisted on an *external conditionality* clause, whereby the savings tax would apply in the EU only from the moment that equivalent measures were applied by the same five European third countries and the same measures were applied by 10 British and Dutch associated and dependent territories (Anguilla, Aruba, the British Virgin Islands, the Cayman Islands, Guernsey, the Isle of Man, Jersey, Montserrat, the Netherlands Antilles and the Turks & Caicos Islands).

In other words, the 2005 savings tax measures essentially oblige 42 savings tax partners to either automatically exchange information on savings interest payments by their banks to residents of another partner (so as to allow taxation of the savings income in the country of residence), or to apply a withholding tax on outbound interest payments.[19]

Unsurprisingly, the Directive 'did not measure up to the ambitions' in view of its serious shortcomings.[20] One key problem was that neither the STD nor the STA actually oblige all countries to tax savings interest. EU residents will therefore be able to continue to evade taxes, either by moving their residence to (beneficial owner moves out of reach) jurisdictions that do not tax savings income (e.g. Singapore, Hong Kong, Panama), or by shifting their funds to banks situated in these locations (paying agent moves out of reach). A second major problem is that the STD does not cover interest payments made to companies or legal arrangements (trusts), so that taxpayers can evade the savings tax by simply interposing an entity (companies; fiduciary, usufruct or trust agreements) between themselves and the paying agent (beneficial owner moves out of sight). A third important shortcoming is the rather narrow definition of 'interest payment', which allows taxpayers who neither want to shift their residence, nor their income to another jurisdiction, to shift their investment into investment vehicles that yield untaxed income (investment moves out of reach) including life insurance contracts, occupational pensions, complex financial products (derivatives, deferred interest accounts), trusts, or shares (yielding dividends and capital gains).

As early as November 2008 the Commission proposed a new directive[21] that seeks to close the main loop-

[16] Council Directive 2003 48 EC on Taxation of Savings Income in the Form of Interest Payments, Official Journal L 156 of 26 June 2003, p. 38.

[17] These agreements and all other savings tax related documents are available from the Council's web site at http://consilium.europa.eu/cms3_fo/showPage.asp?id=916&lang=en&mode=g;

[18] See the "Green Light" Note from the General Secretariat of the Council contained in Council Document 10038/05 of 21 June 2005, http://www.consilium.europa.eu/showPage.aspx?id=916&lang=en and at http://register.consilium.europa.eu/.

[19] In 2005 three EU Member States (Austria, Belgium and Luxembourg), all five European third countries, and 6 overseas territories (British Virgin Islands, Guernsey, Isle of Man, Jersey, Netherlands Antilles, Turks and Caicos Islands) opted for a withholding tax. Anguilla, Aruba, Cayman Islands and Montserrat provide information to EU Member States. For Anguilla, Cayman Islands and Turks and Caicos Islands the arrangement is unilateral because they tax neither residents nor non-residents on their savings income and thus have no need to receive information (Anguilla, Cayman Islands), or do not receive a share of the withholding tax, if any, levied by EU Member States (Turks and Caicos Islands). In 2010 Belgium switched to automatic exchange of information.

[20] For an excellent early overview, see Jiménez (2006). For a more recent report with references to relevant literature, see Hemmelgarn and Nicodème (2009).

[21] COM (2008) 727 final of 13 November 2008 – Council Document 15733/08 of 13 November 2008, http://register.consilium.europa.eu/. For the latest compromise proposal presented to the December 2009 and January 2010 ECOFIN Councils see Council document 16473/1/09 of 25 November 2009. See also the progress report by the Czech Presidency in Council Doc 10277/1/09 of 29 May 2009, the ECOFIN Council Press release of January 2010 (Council Document 5400/10), http://register.consilium.europa.eu/.

holes by covering EU taxpayers who hide behind intermediary entities inside the EU or in third countries,[22] and by extending the scope of the Directive to equivalent forms of income from investment funds and to income from innovative financial and life insurance products. As yet, however, no agreement has been reached on the new text, mainly because Austria and Luxembourg reiterated the two main substantive concerns that they had also raised in 2003, i.e. the need for *external conditionality* (all savings tax partners must apply equivalent or the same measures) and the need to extend the duration of the *transitional period* to the moment that the other savings tax partners switch to automatic exchange of information.[23]

Recent external EU action to promote good governance in the tax area

In April 2009 and 2010 the European Commission submitted two communications to the Council (respectively on good tax governance and on tax and development), which responded by adopting conclusions in both cases.

In its June 2009 conclusions on good governance the ECOFIN Council recalled the importance of implementing the good governance tax principles of transparency, exchange of information and fair tax competition and committed to further discuss and promote these at an international level and towards third countries (recalling the March 2009 European Council joint position that refers in this respect to the fight against tax evasion and the application of appropriate and gradual countermeasures towards uncooperative third country jurisdictions). It also welcomed the emerging international consensus on the OECD standard on exchange of information and called for negotiations on improved savings tax agreements and anti-fraud agreements in particular with the five European third countries.[24]

In its June 2010 conclusions on tax and development, the Foreign Affairs Council essentially recognises that capital flight, including tax evasion and avoidance, is a major obstacle to domestic resource mobilisation in developing countries and agrees that the EU and its Member States will support developing countries in tax policy, tax administration and tax reforms, including the fight against tax evasion and other harmful practices. The Council also agreed to further promote a transparent and cooperative international tax environment with a greater participation of developing countries in the process of adopting and implementing international standards discussed in international fora (UN, OECD, International Tax Dialogue, International Tax Compact).[25]

To date, however, these conclusions have yielded few results. As noted above, a new savings tax directive has not been agreed upon and negotiations with the other savings tax partners to upgrade existing savings tax agreements have not started. Moreover, exploratory talks on the possibility of concluding savings tax agreements with international financial centres such as Singapore, Hong Kong and Macao have been unsuccessful (though Norway and Iceland have been more responsive). Efforts to conclude anti-fraud and tax information exchange agreements with European third countries have also proven fruitless to date. Even although an anti-fraud agreement was negotiated with Liechtenstein,[26] it was never concluded by the Council and did thus not enter into force. Nor did the Council adopt the June and November 2009 proposals of the Commission to upgrade the existing anti-fraud agreement with Switzerland, and to negotiate new anti-fraud agreements with Andorra, Monaco and San Marino, along the lines of the Liechtenstein

[22] EU paying agents must identify, on the basis of anti-money laundering information already available to them, EU resident beneficial owners who are behind non taxed third country investment vehicles and must report accordingly ('look through' mechanism). In addition, European tax exempt entities or legal arrangements (charities, partnerships, investment funds, pension funds, trusts, fiduciaries, etc.) must apply the savings tax measures as they are considered paying agents upon receipt of an interest payment.

[23] See Background Economic and Financial Affairs Council of 19 January 2010, http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ecofin/112324.pdf.

[24] Subsequent to the Commission Communication of 2 April 2009 on Promoting Good Governance in Tax Matters (Council document 9281/09 FISC 57 containing COM(2009) 201 final (http://register.consilium.europa.eu/)), the ECOFIN Council adopted Conclusions on 9 June 2009 (Document 10252/4/09 REV 4 FISC 72, http://register.consilium.europa.eu/).

[25] Subsequent to the 21 April 2010 Commission Communication entitled: "Tax and Development – Cooperating with Developing Countries on Promoting Good Governance in Tax Matters" (Doc. 8891/10), the EU Foreign Affairs Council adopted on 4 June 2010: "Council Conclusions on Tax and Development – Cooperating with Developing Countries in Promoting Good Governance in Tax Matters". Doc 10349/10 DEVGEN 182 ACP 159 FISC 55 FIN 219 ECOFIN 324 ONU 102, http://register.consilium.europa.eu/. See also the website of the international tax compact (http://www.taxcompact.net/), and the 2011 report to the G20 Development Working Group by the IMF, OECD, UN and World Bank entitled: "Supporting the Development of More Effective Tax Systems", http://www.oecd.org/dataoecd/54/29/48993634.pdf.

[26] For a first draft, see Council doc. 17247/08, http://register.consilium.europa.eu/. The draft was, however, not acceptable to the Council (see ECOFIN conclusions of 10 February 2009 (Council Document 6069/09, p.20, http://register.consilium.europa.eu) and of 4 November 2008 (Council Document 15067-08, p. 12, http://www.consilium.europa.eu) and after re-negotiation the Commission submitted an upgraded draft in December 2009 (COM (2009) 644 final of 23 November 2009 and COM (2009) 648 final/2 of 3 December 2010 – Council Documents 1689/09 and 16690/1/09 of 3 December 2009, http://register.consilium.europa.eu/). See also Background Economic and Financial Affairs Council, http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ecofin/112324.pdf.

agreement.[27] The reason for this lack of action is the fact that Austria and Luxembourg link further progress on the anti-fraud agreements to progress on the Savings Tax Directive (and in particular to a satisfactory solution to the transitional period and external conditionality).

As for good governance clauses in agreements with third countries, the Council did adopt conclusions on 14 May 2008,[28] which underline the importance of implementing on as broad a geographical basis as possible, the 'principles of good governance in the tax area, i.e. the principles of transparency, exchange of information and fair tax competition'. More specifically, the conclusions recognise the need to include general good governance clauses in relevant agreements to be concluded by the Community and its Member States. They contain the following appropriate text for such a clause: "with a view to strengthening and developing economic activities while taking into account the need to develop an appropriate regulatory framework, the Parties recognise and commit themselves to implementing the principles of good governance in the tax area, as subscribed to by Member States at Community level. To that effect, without prejudice to Community and Member States competences, the Parties will improve international cooperation in the tax area, facilitate the collection of legitimate tax revenues, and develop measures for the effective implementation of the above mentioned principles" (point 4 of the Conclusions).

In the wake of these Council conclusions, the Commission has introduced draft good governance clauses in the on-going negotiations with numerous third countries and groups of countries. The latter's reactions, however, have been rather mixed. Whereas many countries are open to the idea of including some kind of reference to good governance concepts such as transparency, exchange of information, combating tax avoidance and evasion in their agreement with the EU, others seem to have problems accepting particular elements or the wording of the model clause set out above, while others basically seem to be hostile to the idea of such a reference in their agreement with the EU.

Assessment and conclusions

Our assessment of the recent action of the European Union to counter tax avoidance and evasion is mixed. As regards cooperation and assistance between tax administrations, it is positive that the new recovery assistance directive provides for an improved legal framework that should, at least potentially, increase the effectiveness and efficiency of the intra Community cross border recovery of taxes by Member States. However, since recovery assistance remains 'on request' (and not automatic), it remains to be seen whether the new Directive will perform better than its predecessor, under which only 5 percent of the total amount of claims for which recovery assistance was requested was actually recovered. The proof of the pudding will be in the eating. It is now up to the tax administrations of the Member States to make the fullest possible use of these new opportunities and start building a more collective responsibility for recovering tax claims in Europe.

All of the above equally applies to the new assessment assistance directive, which introduces a number of important changes (broader scope, no bank secrecy exception, time limits, standard forms, broad use of the information obtained) that are likely to increase assessment assistance between Member States, while simultaneously reducing administrative burdens and red tape. In addition, the new assessment directive has the rather important positive achievement of introducing the automatic exchange of information on a broad spectrum of income and capital items, which, in political and financial terms, could well prove to be the single most important recent development in the area of exchange of information.

Developments in the more specific area of savings tax, on the other hand, are much less encouraging. We seem to be stuck with a savings tax framework that looks like a Swiss cheese because it has so many loopholes in its geographic, personal and substantive scope. It is surprising that such a framework even yields the few pennies that seem to flow into the coffers of some EU Member States.[29] The main reason is

[27] Draft Council decision authorising the Commission to open up negotiations for agreements between the European Union and its Member States, on the one hand, and the Principality of Andorra, the Principality of Monaco and the Republic of San Marino, on the other, to combat fraud and other illegal activity to the detriment of their financial interests and to ensure administrative cooperation through the exchange of information on tax matters and by authorising the Commission to start negotiations for an agreement between the European Union and its Member States, on the one hand, and the Swiss Confederation, on the other, to combat direct tax fraud and direct tax evasion and to ensure administrative cooperation through the exchange of information on tax matters (the declassified part of the document is in Council Document 16308/09 EXT 1 of 8 January 2010, http://register.consilium.europa.eu/).

[28] Conclusions of the ECOFIN Council of 14 May 2008, http://www.consilium.europa.eu.

[29] In reality, the savings tax measures seem to have mostly affected small scale tax evaders, while raising very little revenue (see also Jiménez 2006).

that the EU and its Member States are effectively held hostage by Austria and Luxembourg, which both seem to have a very one-sided interpretation of EU solidarity. In fact, they expect all other Member States to be convinced by their 'level playing field' argument that they cannot move forward unless other financial centres do so, but they do not seem to understand that all other Member States expect Austria and Luxembourg not to obstruct them in the collection of taxes from their residents in accordance with their national laws.

However, the fact is that maintaining a level playing with outside financial centres does not require Austria and Luxembourg to block either the adoption of a new savings tax directive or the conclusion (and provisional entry into force) by the EU and all Member States (except themselves) of anti-fraud agreements with third countries.[30] Therefore, it is understandable that individual Member States, like Britain and Germany have now themselves concluded upgraded savings tax agreements with countries like Switzerland (even though there are doubts about their compatibility with the EU law). Another interesting development in this respect is the fact that Swiss banks are now increasingly pondering the option of accepting deposits only if customers themselves declare and provide the evidence that tax was paid in respect of these deposits.

More generally, it is important to bear in mind that institutions at a European level have the specific task of formulating a legal framework, which in a way has the character of a common minimum standard. From this perspective the incorporation of an automatic exchange of information into that common minimum standard is an important step forward, which must now be taken extensively by Member States, which ultimately have the task of assessing and collecting taxes. They might consider some relatively simple additional measures that could help them in this task. EU Member States could, for instance, coordinate the way that they identify taxpayers and introduce one single European wide tax identification number for each individual and company (and real estate and car, etc.). Another practical measure could be to introduce easy ways for using standard formats for automatic exchange. It could also be useful to promote more actual contacts between the different European tax administrations (EU Fiscalis programme; OECD offshore compliance network) and to consider broadening the scope for joint action towards single large taxpayers.

Internationally, Member States could start a European discussion on the many complex and opaque international structures that are used for tax fraud and avoidance (which could be done in the Council's Code of Conduct Group). This would automatically trigger a discussion on how to achieve greater transparency and enhance the exchange of information with third countries. It could also result in discussions on more consistent EU policies towards tax havens in a shared determination to end offshore abuse and to realise the automatic exchange of information worldwide.

Finally, even although the OECD has announced that the era of banking secrecy is over,[31] the fight against tax avoidance and evasion will be an on-going exercise. The recent developments within the EU in last two years can be seen as just a tiny step towards the ideal world in which every citizen and company pays taxes according to his/her ability to pay. However, it remains important to realise that every step is worthwhile, because it increases equal treatment and may help countries to reduce the unsustainable budget deficits and public sector debt levels from which they have been suffering since the end of 2008.

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[30] In fact, the EU and other Member States except Luxembourg and Austria, could sign and conclude, as well as accept the provisional application, of the Liechtenstein anti-fraud agreement, and agree to give the Commission the mandate to negotiate similar agreements with the other four European countries. This would at least allow the process to go forward without the risk of immediately triggering the end of the savings tax transitional period, because under the provisions of the Savings Tax Directive that would only ensue if those agreements actually were to come into effect (which would require ratification by all Member States, including Luxembourg and Austria).

[31] OECD (2011) estimates that the G20/OECD efforts have resulted in an extra 14 billion euros of tax revenue over 2 years in the 20 countries where data is available.

Tackling Undeclared Work in the European Union

Colin C. Williams and Sara Nadin*

Introduction

At the 2003 Lisbon Summit of the European Council, tackling undeclared work was named as one of the top ten priorities for action with regard to employment reform (European Commission 2003a, 2003b and 2003c). With the declining employment participation rates in Europe, the European Commission recognised that the conventional approach that sought to deter engagement in undeclared work needed to be transcended. Instead, a new facilitating formalisation approach was advocated that seeks to move undeclared work into the declared realm (European Commission 2007). This paper evaluates the degree to which this has been adopted by European national governments.

To this end, the first section will briefly review the extent and nature of undeclared work in Europe, while the second section will examine the various possible policy approaches available for tackling undeclared work. Revealing that the European Commission has recently called for a new approach that seeks to legitimise undeclared work rather than simply deter it, the third section then reports an evaluation of the degree to which European national governments have adopted this policy approach. Reporting a 2010 survey of 104 senior stakeholders from government departments, trade unions and employer organisations in 31 European countries, and 24 follow-up in-depth interviews, this section displays that although there is a move towards adopting policy measures to legitimise undeclared work, deterring undeclared work remains the principal approach in most nations. The fourth and final section will then draw some conclusions and discuss the implications of intransigence on the part of European national governments.

Before commencing, however, undeclared work needs to be defined. Despite some 45 different nouns and 10 adjectives used to denote this realm, including the 'cash-in-hand', 'shadow', 'informal', 'black' and 'underground' economy/sector/work (Williams 2004), a strong consensus exists that undeclared work should be defined by what is absent from, or insufficient about it compared with declared work. The widely-held view is that the only absence from, or insufficiency about, undeclared work is that this remunerated production and/or sale of licit goods and services is not declared to the authorities for tax, social security and/or labour law purposes when it should be declared (European Commission 1998 and 2007; OECD 2002). If other absences or insufficiencies exist, then the definition of undeclared work does not apply. If the goods and/or services are illegal (e.g. drug-trafficking), for example, then this constitutes 'criminal' activity. If the activity is not remunerated, on the other hand, it is not part of the undeclared economy, but belongs to the unpaid sphere.

Extent and nature of undeclared work in Europe

For many decades, a 'size matters' perspective dominated the study of undeclared work. Scholars concentrated on measuring the magnitude of this realm using indirect measurement methods (Friedman *et al.* 2000; Schneider *et al.* 2011). Little attention was paid to evaluating the nature of undeclared work. Nevertheless, a number of small-scale direct surveys have begun to do so (Neef 2002; Round *et al.* 2008; Williams 2006). These surveys have challenged the conventional dominant depiction of undeclared work as low-paid waged employment conducted under degrading 'sweatshop-like' conditions (Davis 2006; Sassen 1996), which conventionally led governments to view this sphere as something to be deterred.

* University of Sheffield. The research in this paper results from the European Commission funding a feasibility study on establishing a European platform for cooperation between labour inspectorates, and other relevant monitoring and enforcement bodies, to prevent and fight undeclared work (VT/2009/049). The authors would like to thank the European Commission for funding this study. The usual disclaimers apply.

On the one hand, a range of additional types of undeclared waged employment have been identified. Not only has well-paid undeclared waged work been recognised (Williams and Windebank 2011), but it has been also shown that besides 'undeclared' jobs wholly hidden from the state for tax, social security and labour law purposes, there are also 'under-declared' formal jobs where declared employees receive two wages from their declared employer, one declared and one undeclared 'envelope wage' (Karpuskiene 2007; Williams 2007; Woolfson 2007).

On the other hand, it has been shown that a lot of undeclared work in many places is conducted on an own-account or self-employed basis (Round *et al.* 2008; Williams 2005). Until recently, most of this undeclared self-employment was assumed to be conducted under market-like relations for profit-motivated purposes. However, in some populations it has been identified how such own-account undeclared work is commonly undertaken for closer social relations such as kin, neighbours, friends and acquaintances, for the purposes of redistribution and helping out, rather than purely for financial gain (Persson and Malmer 2006; Williams 2004).

Until recently, such findings regarding the nature of undeclared work derived almost entirely from small-scale studies of particular populations. In 2007, however, an extensive survey of undeclared work involving 26,659 face-to-face interviews in 27 European countries was conducted as part of wave 67.3 of Eurobarometer (TNS Infratest *et al.* 2006; Williams and Windebank 2011). It finds that just under one in ten (9 percent) of the surveyed population participated in either undeclared or under-declared work in the 12 months prior to interview, of which 4 percent engaged solely in undeclared work, a further 4 percent solely in under-declared work and 1 percent in both undeclared and under-declared work.

Examining the nature of the wholly undeclared work, just 22 percent was waged employment and 78 percent undertaken on a self-employed basis; with 57 percent being conducted on a self-employed basis for closer social relations and 21 percent on a self-employed basis for other private individuals, households and businesses.

Analysing under-declared work, meanwhile, 1 in 20 (5 percent) of all declared employees received envelope wages from their formal employer in the previous year amounting on average to over two-fifths (43 percent) of their gross total wage. Of these employees, 29 percent received such payments for their regular work, 27 percent for extra work or overtime and 36 percent for both their regular and overtime work. Extrapolating to the EU as a whole, this intimates that some 11 million of the 210 million employees in the EU might be in receipt of envelope wages: some 3 million for their regular work, 3 million for overtime or extra work and 4 million for both their regular and overtime work. This re-reading of the nature of work in the undeclared economy has significant implications for how undeclared work is tackled.

Policy approaches towards undeclared work

Tackling undeclared work has been traditionally dominated by a deterrence approach that seeks to eradicate it. Reading undeclared workers as 'rational economic actors' who will evade tax so long as the pay-off from evading is greater than the expected cost of being caught and punished (Allingham and Sandmo 1972), the goal has been to deter it by changing the cost/benefit ratio confronting those engaged or thinking about participating in such endeavours (e.g. Hasseldine and Li 1999; Richardson and Sawyer 2001). This is achieved by increasing the actual and perceived risks and costs associated with participation by raising the perceived or actual likelihood of detection andraising the penalties and sanctions for those caught.

Recently, nevertheless, the validity of this approach has been questioned for three reasons. Firstly, it has been argued that increasing the probability of detection and/or increasing penalties can produce the opposite behaviour to that sought (Murphy 2005; Schneider *et al.* 2011). Secondly, and given that undeclared self-employment is often a seedbed for entrepreneurship and enterprise development (Small Business Council 2004; Williams 2006), it has been recognised that if national governments seek to eradicate it, their policies onundeclared work may deter precisely the enterprise and entrepreneurship that their enterprise culture policies are seeking to foster. Similarly, given that much undeclared work is embedded in relations of familial and community solidarity, deterring such endeavour will also result in governments suppressing precisely the mutual aid that their policies on promoting active citizenship are wishing to foster (Williams 2004). And thirdly and finally, if employment participation rates are to be raised, the issue is not simply one of deterring undeclared work, but rather of moving undeclared work into the declared realm.

For these reasons, calls have been made for governments to transform undeclared work into declared work rather than to simply deter it (European Commission 2003a, 2003b, 2003c and 2007). Indeed, in its second communication on undeclared work the European Commission (2007) explicitly called for member states to pursue policy measures to transform undeclared work into declared work. As Williams (2008) and Williams and Renooy (2009) note, these measures are of three kinds: *preventative* measures that stop from the outset occurrences of non-compliance; *curative* measures to help those already working on an undeclared basis to transfer into the declared realm, and *commitment* measures that foster an allegiance to tax morality. The issue, of course, is whether governments are moving towards this enabling approach based on legitimising undeclared work.

Examining the policy approaches of European governments

To evaluate the degree to which this European Commission call has been adopted by European national governments, a web-based survey was conducted during 2010 of senior officials responsible for tackling undeclared work in European countries in labour inspectorates, revenue administrations, social security administrations, trade unions, employer organisations and other relevant agencies (e.g. customs, border police, immigration). Of the 499 invitations to participate, 104 responses were received (a 21 percent response rate). In all 31 countries (27 EU member states along with Iceland, Norway and Switzerland), at least one high-ranking representative of the authority who takes the lead on tackling undeclared work was surveyed. The issues covered by this survey included: the characteristics of the current national institutional framework in each country; the existing policy measures used; their perceptions of the importance of each policy measure in the overall approach adopted; their perceptions of its effectiveness at tackling undeclared work; perceived best practices in this field, and the usefulness of various possible options for a European platform to prevent and fight undeclared work.

Secondly, and following this web survey, 24 in-depth semi-structured interviews were held with a selection of these stakeholders. The intention was firstly to provide additional information to fill in any gaps on existing national institutional frameworks, policy measures adopted in different countries and cross-border cooperation following the web survey, and secondly, to seek richer in-depth understanding of the various approaches being adopted and the perceived effectiveness and importance of them. The findings are reported below.

To evaluate whether policy measures have been adopted to transform undeclared work into declared employment, the proportion of countries that used a range of deterrence, preventative, curative and commitment measures to tackle undeclared work in 2010 are reviewed here.

Deterrence measures

The finding is that in 2010, all 31 countries were continuing to use deterrence measures aimed at stamping out undeclared work, with all seeking to improve detection and 93 percent using penalties and/or sanctions. Examining the percentage of countries using various types of penalties:

- 87 percent used administrative sanctions for purchasers/companies,
- 83 percent imposed administrative sanctions for suppliers/employees,
- 74 percent imposed penal sanctions for purchasers/companies, and
- 53 percent imposed penal sanctions for suppliers/employees.

Analysing the proportion of countries adopting measures to improve detection, meanwhile, the finding is that:

- 100 percent conducted workplace inspections,
- 83 percent used data matching and sharing,
- 74 percent registered workers prior to starting work or on first day of work,
- 65 percent implemented certification of business and/or payments of social contribution and taxes,
- 65 percent used coordinated data sharing across government,
- 65 percent used mandatory IDs in the workplace,
- 61 percent practiced the coordination of operations across government,
- 57 percent coordinated strategy across government, and
- 39 percent used peer-to-peer surveillance (e.g. telephone hotlines).

Overall, therefore, a wide range of penalties and detection measures were being employed across these 31 European nations.

Preventative measures

Turning to measures to facilitate the formalisation of undeclared work, the finding is that although such policy measures have been employed to transfer undeclared work into the declared realm, as called for by the European Commission, the range of measures adopted has been relatively narrow. Starting with preventative measures, the finding is that 90 percent of countries adopted one or more preventative policy measure. However, beyond the simplification of compliance, only a limited number of countries have adopted other preventative policy measures. Examining the percentage of countries adopting various preventative measures to stop people and businesses engaging in undeclared work from the outset, the finding is that:

- 87 percent have simplified compliance procedures,
- 65 percent ease transition from unemployment into self-employment,
- 61 percent offer training & support to business start-ups,
- 61 percent apply direct tax incentives (e.g. exemptions, deductions),
- 61 percent have taken advice on how to formalise,
- 61 percent connect pension schemes to formal labour,
- 52 percent offer micro-finance to business start-ups,
- 48 percent are upwardly revising the minimum wage,
- 48 percent have cut back on regulations,
- 44 percent ease the transition from employment into self-employment,
- 43 percent restrict free movement of (foreign) workers,
- 43 percent introduce technological innovations (e.g. certified cash registers),
- 35 percent apply new categories of work (e.g. for small or mini-jobs),
- 35 percent offer social security incentives,
- 17 percent are introducing supply chain responsibility, and
- 9 percent are downwardly revising the minimum wage.

Curative measures

It is similarly the case that curative measures that seek to shift undeclared work into the declared realm have not been widely adopted. Just 64 percent of countries use one or more curative measure to tackle undeclared work and again, the range of curative measures used is narrow. Beyond targeted direct tax incentives (e.g. income tax relief/reduction/subsidy schemes), less than one-third of countries have adopted any other curative policy measure. Examining the percentage of countries adopting various type of curative measure, the finding is that:

- 61 percent targeted direct tax incentives at customers of undeclared work,
- 30 percent provided formalisation advice to business,
- 30 percent provided formalisation support services to businesses,
- 26 percent offered service vouchers,
- 22 percent had fact sheets on record-keeping,
- 22 percent offered free advice/training on record-keeping,
- 17 percent targeted VAT reductions,
- 17 percent had individual-level amnesties for voluntary disclosure,
- 17 percent targeted indirect taxes at customers of undeclared work,
- 13 percent offered free record-keeping software to businesses,
- 13 percent implemented gradual formalisation schemes, and
- 9 percent offered society-wide amnesties.

Commitment measures

Finally, only 69 percent of the countries have adopted commitment measures and in the countries in which they have been adopted. These have so far mostly involved campaigns targeting various groups involved in undeclared work. Few countries have pursued policy measures to improve either procedural justice or the perceived fairness of the system. Examining the percentage of countries adopting various type of commitment measure, the finding is that:

- 65 percent adopted measures to improve tax/social security/labour law knowledge,
- 61 percent ran campaigns on risks and costs of working undeclared,
- 61 percent ran campaigns to inform users of undeclared work of the risks and costs,
- 57 percent ran campaigns on benefits of formalising their work,
- 52 percent ran campaigns to inform users of the benefits of declared work,

- 52 percent used normative appeals to people to declare their activities,
- 39 percent ran campaigns to encourage a culture of commitment to declaration,
- 30 percent adopted the commitment rather than compliance approach,
- 26 percent adopted measures to change perceived fairness of the system, and
- 17 percent adopted measures to improve the procedural justice of the system.

Perceived effectiveness of policy measures

Consequently, deterrence measures remain widely used. The strong intimation is that despite the call for policy measures to transform undeclared work into declared employment, such measures have not been broadly implemented. To explain this, Table 1 reports stakeholders' views on what is the most effective policy instrument for tackling undeclared work. Stakeholders were asked to name the set of policy measures they view as most effective, second most effective and least effective at tackling undeclared work. The finding is that the majority (55 percent) see deterrence measures as the most effective means of tackling undeclared work, whilst just 20 percent view preventative measures as the most effective set of measures, followed by 15 percent for curative measures and 10 percent for commitment measures. Stakeholders across Europe, therefore, remain entrenched in a view that deterrence is more effective and a deterrence approach therefore takes precedence over moving undeclared work into the declared realm.

Relative importance of each set of policy measures

The strong intimation, therefore, is that the deterrence approach is still the most important means of tackling undeclared work. To evaluate this, stakeholders were asked to rank the four different sets of policy measures in terms of which is accorded the most importance to the least importance in their country when tackling undeclared work. Table 2 reports the results. As shown in the table, 57 percent of stakeholders state that deterrence measures are accorded the most importance in their country when tackling undeclared work and just 43 percent deem measures that transform undeclared work into declared employment as the most important, with 19 percent citing preventative measures, 14 percent curative measures and just 10 percent citing commitment measures.

Examining the type of policy measure accorded the least importance, some 84 percent cite those that seek to transform undeclared work into declared employment; only 16 percent cite deterrence measures. The clear message, therefore, is that despite the call by the European Commission to move beyond deterrence, the vast bulk of countries remain entrenched in a deterrence approach and transforming undeclared work into declared employment is neither widely accepted nor adopted.

Table 1

Type of policy measures stakeholders view as most and least effective

% of stakeholders	Most effective	2nd most effective	Least effective
Deterrence measures	55	13	12
Preventative measures	20	41	13
Curative measures	15	27	31
Measures fostering commitment	10	19	44

Table 2

Stakeholder opinion of the relative importance accorded to different types of policy measure in their country

% citing	Most important	2nd important	Least important
Deterrence measures	57	17	16
Preventative measures	19	46	23
Curative measures	14	19	32
Commitment measures	10	18	29

Conclusions

In the current period austerity and declining employment participation rates, however, the European Commission has called for a new approach which seeks to transform undeclared work into declared work, not least in order to improve employment participation rates. This paper has evaluated the degree to which this EU call has been adopted by European national governments. Reporting a 2010 survey, the finding is that although European nations have adopted an array of policy measures to facilitate the declaration of undeclared work, deterrence is not only accorded the most importance, but is also seen as more effective at tackling undeclared work. The clear lesson, therefore, is that the view that undeclared work needs to be transferred into the declared realm is far from being widely accepted or adopted.

This has important implications. Unless this approach of shifting undeclared work into the declared realm becomes more widely accepted and adopted, then governments will continue not only hinder the promotion of economic inclusion, but will also unintentionally prevent precisely the entrepreneurship and active citizenship that they are so desperately seeking to nurture through their enterprise culture and active citizenship policies through their deterrence approach towards undeclared work. These contradictions can only be resolved by putting greater emphasis on seeking to legitimise undeclared work using preventative, curative and commitment policy measures.

To conclude, this paper for the first time identifies the gap between the European Commission's desire to transfer undeclared work into the declared realm and the dominant approach of European national governments, which still seeks to deter such work rather than transform it into declared work. Action to bridge this gap is therefore needed. If this paper encourages greater discussion of how to encourage such a policy approach amongst national governments, and greater debate across European countries about the unintended consequences for economic inclusion, entrepreneurship and active citizenship of continuing to pursue their deterrence approach, then it will have achieved its objectives.

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The Crisis and Tax Evasion in Greece: What Are the Distributional Implications?

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Introduction

As every European who occasionally switches on her TV set must be aware, Greece is in the throes of a dramatic crisis. This started off in 2009 as a fiscal crisis, soon turned into a sovereign debt crisis, and finally mutated into a full-blown recession, unprecedented in depth and duration. At the time of writing (May 2012), the Greek economy had already been in recession for four consecutive years, and showed few signs of recovery. The latest official figures (Bank of Greece 2012) estimated the size of (negative) growth in 2011 at – 6.9 percent, and bleakly forecast a further – 5.5 percent in 2012. Overall, GDP looks set to contract by as much as 17.4 percent in real terms in 2012 versus 2008. So deep and drawn out a recession had simply no precedence in the country's economic history at peacetime.

In May 2010, at the height of the debt crisis, the Greek government negotiated a 110 billion euro loan with the European Union, the European Central Bank and the International Monetary Fund. As a condition for the loan, the government signed up to a three-year Memorandum of Economic and Financial Policies, committing Greece to sweeping spending cuts, steep tax increases, and an ambitious programme of structural reforms (IMF 2010; EC 2010). The Greek programme was updated in July 2011, when the euro area summit conceded lower interest rates and a longer repayment period (CEU 2011a), and again in October 2011, when the European summit opened the way to a new loan and a negotiated reduction in the nominal value of Greek government bonds, colloquially known as a 'haircut' (CEU 2011b).

Fiscal consolidation, a crucial part of the programme, proved moderately successful: revenues rose from 38.0 percent of GDP in 2009 to 41.0 percent in 2011, while expenditure fell from 53.8 percent of GDP in 2009 to 50.3 percent in 2011 (IMF 2012, 9). Most of the deficit reduction (about 5 percent of GDP) was actually achieved in 2010, moving the OECD to observe that "no other OECD country has achieved such a fiscal improvement in a single year over the past three decades" (OECD 2011, 12).

As recognised from the outset, the fight against tax evasion was to play a crucial role. Firstly, by virtue of its sheer size: at an estimated 27.5 percent of GDP in the period 1999–2007, the informal economy in Greece was larger than any other EU country (Schneider 2012); the VAT tax gap in 2006 was 30 percent, compared to an EU average of 12 percent; while the tax debt as a share of annual net tax revenue in Greece was 72.2 percent in 2011, compared to an OECD average of 12.3 percent (IMF 2012, 9). In this context, the scope of improvement was great: the OECD reckoned that "if Greece collected its VAT, social security contributions and corporate income tax with the average efficiency of OECD countries, tax revenues could rise by nearly 5 percent of GDP" (OECD 2011, 15).

Equally obvious is the social and political importance of progress in the fight against tax evasion. In the words of the OECD: "a decisive reduction in tax eva-

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Our earlier research was supported by the European Commission and the General Secretariat of Research and Technology of the Hellenic Republic, and was presented in conferences and seminars held in Buenos Aires (July 2009), London (February 2009), Milan (June 2008), and Athens (April 2008). We are grateful to participants for comments and suggestions. We particularly thank Andrea Brandolini, Nikos Christodoulakis, Carlo Fiorio, Orsolya Lelkes, Daniela Mantovani, Vassilis Monastiriotis, Emmanuel Saez, Panos Tsakloglou and Alberto Zanardi. The results presented here are based on an extension of the earlier study, supported by the European Commission 'Integrating and Strengthening the European Research Area' programme (project no. 028412), and by the General Secretariat of Research and Technology of the Hellenic Republic (grant no. 03ΕΔ319/8.3.1). We use the European tax-benefit model EUROMOD. The model is continually being improved and updated; the results presented here represent the best available at the time of writing. The usual disclaimer applies.

sion is indispensable for fairness and [the] acceptance of the broader fiscal consolidation effort. [...] Reduction in tax evasion has become a major yardstick in measuring the success of the adjustment programme for many observers" (OECD 2011, 15).

Progress on that front to date has been at best limited. For example, the latest review of the economic adjustment programme for Greece by the European Commission concluded that "fiscal consolidation was held back by a less than successful fight against tax evasion" (EC 2011, 17). Even more significantly, this also seems to be the perception of most observers at home and abroad. Evidence for the latter includes a recent interview given by Christine Lagarde, Managing Director of the International Monetary Fund, to the British daily *The Guardian* (25 May 2012).[1]

Our paper focuses on one aspect of tax evasion in Greece, namely its distributional implications. It builds on an earlier study (Matsaganis and Flevotomou 2010), estimating the size and distribution of evasion of personal income tax in Greece in 2004, by extending it to later years drawing on a new, larger sample of unaudited tax returns filed in 2007–2011 (incomes earned in 2006–2010). The paper combines an estimation of non-compliance patterns in terms of income under-reporting, with an estimation of the distribution of gains from tax evasion in the general population using a tax-benefit model.

We estimate the average rate of under-reporting in 2006 at 11.8 percent, resulting in a shortfall in tax receipts of 27.8 percent. We show that tax evasion causes inequality to rise, and the tax system to become significantly less progressive. We find little evidence of any significant change in patterns of income under-reporting since the onset of the current crisis.

The paper is structured as follows: the second section explains the methodology of the study and presents the data. Section three reports its results and discusses its main findings. The final section reflects on the policy implications of our findings, the limitations of our approach, and issues for further research.

Methodology and data

There is compelling evidence that the rate of under-reporting of wages and salaries is much lower than in the case of self-employment earnings. The analysis of US tax audit data collected under the Taxpayer Compliance Measurement Program (TCMP) in 1988 estimated the former at 0.5 percent and the latter at 58.6 percent (Slemrod and Yitzhaki 2002). Similar data from the successor to TCMP, the National Research Program (NCP), estimated that 57 percent of self-employment income was under-reported, compared to 1 percent of wages and salaries (Slemrod 2007). These findings are supported by studies from other countries, or using different research designs (or both). Pissarides and Weber (1989) found that the self-employed in Britain spent a higher share of their reported income on food (other things such as household characteristics being equal), and attributed this to income under-reporting, rather than a higher propensity to consume food – a finding later replicated by Lyssiotou *et al.* (2004). Feldman and Slemrod (2007) used this insight to analyse the relationship between charitable contributions and reported income, and argued that the higher contributions of the self-employed at similar levels of reported incomes could only be explained by higher income under-reporting. In Italy, Fiorio and D'Amuri (2005) estimated the rate of under-reporting of self-employment income around the median of the distribution at 27.7 percent, compared to 1.9 percent for income from wages and salaries, while Marino and Zizza (2008) found self-employed earnings to be under-reported by as much as 56.3 percent. In Hungary, Benedek and Lelkes (2011) showed that 67 percent of self-employment income was under-reported, compared to 4 percent of wages and salaries. In Greece, Matsaganis and Flevotomou (2010) estimated these rates at 24.4 percent and 0.6 percent respectively.

While the evidence on patterns of non-compliance by income source seems robust, this is not the case with respect to non-compliance by income class. While the theory predicts that tax evasion should generally rise with income (Andreoni *et al.* 1998), the empirical evidence is mixed. Christian (1994) used data from the 1988 TCMP study to show that, relative to the size of their true income, higher-income taxpayers evaded less

[1] The interview contained the following exchange, widely reported in Greece:
"*Lagarde:* Do you know what? As far as Athens is concerned, I also think about all those people who are trying to evade tax all the time. All these people in Greece who are trying to evade tax.
Guardian: Even more than you think about all those now struggling to survive without jobs or public services?
Lagarde: I think of them equally. And I think they should also help themselves collectively.
Guardian: How?
Lagarde: By all paying their tax. Yeah".
(see "Christine Lagarde: Can the Head of the IMF Save the Euro?", *The Guardian*, 25 May 2012, http://www.guardian.co.uk/world/2012/may/25/christine-lagarde-imf-euro).

than those on lower incomes. However, as Slemrod (2007) has shown, that study classified taxpayers with high permanent income reporting business losses as low incomes, while it failed to account for illegal tax shelters and for non-compliance in partnership and corporate tax returns. Fiorio and D'Amuri (2005) found that the share of unreported income in Italy fell with income. In contrast, Pashardes and Polycarpou (2008) showed that, once corrected for tax evasion, the income distribution in Cyprus was less equal than the distribution of reported incomes. In view of the above, we focus on under-reporting by income source, assuming no variation by income class (except, of course, that resulting from composition effect, i.e. the distribution of income by income source).

Our paper builds on the method applied in Fiorio and D'Amuri (2005). We also compare data from an income survey to a sample of tax returns, and assume that taxpayers concealing part of their income from tax authorities might consider declaring a higher figure to an anonymous interviewer. Nevertheless, the fact that Fiorio and D'Amuri (2005) had no direct access to their sample of tax data forced them to apply a post-stratification procedure that implicitly assumes away re-ranking effects, which in turn leads to an under-estimation of the regressive impact of tax evasion. On the contrary, we had direct access to a large sample of tax returns, provided to us in anonymised form by the Ministry of Finance.

More specifically, our work draws on two sets of data: (a) a large sample of unaudited income tax returns filed in 2007 (incomes earned in 2006) and (b) the European Union Survey of Income and Living Conditions (EU-SILC) of 2007 (incomes earned in 2006). The sample of tax returns covers 301,577 tax filers and 96,451 dependent children in 196,742 tax units (3.6 percent of population), while EU-SILC 2007 contains detailed information on personal incomes and demographic characteristics of 14,759 individuals in 5,643 households (0.13 percent of population).

We analyse recent trends in income under-reporting using the same sample of tax returns filed in 2011 (incomes earned in 2010). Since EU-SILC 2011 (incomes earned in 2010) had not been released at the time of writing, EU-SILC 2007 income variables were uprated to 2010 using official estimates provided by the Hellenic Statistical Authority and the Bank of Greece (Matsaganis and Leventi 2011). The relevant tax schedules for 2006 and 2010 are shown in Table 1.

Table 1

Income tax brackets and marginal tax rates

A. Financial year 2007 (incomes earned in 2006)		
Income brackets (€ p.a.)		
from	to	Tax rate (in %)
0	9,500	0
9,501	13,000	15
13,001	23,000	30
23,001	…	40
B. Financial year 2011 (incomes earned in 2010)		
Income brackets (€ p.a.)		
from	to	Tax rate (in %)
0	12,000	0
12,001	16,000	18
16,001	22,000	24
22,001	26,000	26
26,001	32,000	32
32,001	40,000	36
40,001	60,000	38
60,001	100,000	40
100,001	…	45

Notes: Personal income tax is individual. Spouses file a joint income tax return, but their income is separately recorded and individually taxed. The tax unit for the assessment of tax allowances and credits includes spouse and dependent child(ren). In 2007 the zero-tax threshold was €11,000 for employees or pensioners, and was raised for taxpayers with dependent children (by €1,000 for one child, by €2,000 for two children, by €10,000 for three children, and by an extra €1,000 for each subsequent child). In 2010 it was €12,000 for all taxpayers, and was raised for taxpayers with dependent children (by €1,500 for one child, by €3,000 for two children, by €11,500 for three children, and by an extra €2,000 for each subsequent child).

Source: Own calculations using EUROMOD version F4.32.

In order to make the two samples comparable, we restrict the EU-SILC sample to those eligible for submitting a tax return. In view of current tax rules, we narrowly define tax filers as those meeting at least one of the following criteria: (a) wage/salary earners with an annual income above 6,000 euros; (b) farmers earning more than 3,000 euros per year; and (c) persons with non-zero self-employment income. These rules are applied both to EU-SILC and the tax returns sample, reducing their sizes to 7,382 and 219,392 individuals respectively.

We ensure that income variables in the two datasets are consistently defined: in tax returns, incomes are reported gross of income tax and net of social insurance contributions; in EU-SILC, incomes are reported net of income tax *and* social insurance contributions. We use the European tax-benefit model EUROMOD to compute income taxes, which are then added to net incomes.[2]

With respect to correct incomes for tax evasion, we allocate the reference population into 16 categories (combinations of 4 macro regions and 4 income sources). The macro regions are Greater Athens, Northern, Central and the Islands. The four income sources are wages and salaries, pensions, farming and self-employment earnings.

In order to minimise measurement errors, in particular the unreliability of income surveys at the bottom of the income distribution, we restrict our comparison to employment income and pensions above 6,000 euros per year, and farming and self-employment earnings above 3,000 euros per year.

[2] See https://www.iser.essex.ac.uk/euromod.

Adjustment factors are ratios of income reported in tax returns to that observed in EU-SILC. More formally, let i denote region and j income source. Let $Y^{T}_{i,j}$ denote average income observed in region i by source of income j in EU-SILC, and $Y^{R}_{i,j}$ denote the corresponding average income as reported in tax returns. Adjustment factors are then defined as $a_{i,j} = Y^{R}_{i,j} / Y^{T}_{i,j}$.

Since tax returns are cross-checked against the records of benefit-paying agencies, it is impossible to misreport pension incomes in tax returns, except due to measurement (e.g. recall) error. In view of this fact, we have ignored over-reporting of pension incomes (4.2 percent in 2006). We have also ignored slight rates of over-reporting for wages and salaries in Athens and Northern region (1 percent and 1.6 percent respectively in 2006), setting the relevant factors to one. The resulting adjustment factors by income source and region are shown in Table 2.

The adjustment factors are used to estimate a 'synthetic' income distribution (i.e. adjusted for under-reporting) in EU-SILC data (say $\check{y}^{R}_{i,j}$, where $\check{y}^{R}_{i,j} = a_{i,j} \times Y^{T}_{i,j}$). In order to draw out the implications of income under-reporting for the resulting distribution of post-tax disposable incomes, and in terms of tax evaded, we use the European tax-benefit model EUROMOD.

Results and discussion

Table 3 shows how under-reporting varies by income group. The extent of income under-reporting seems to be greatest at the two ends of the income distribution. We (conservatively) estimate the average rate of

Table 2

Adjustment factors

A. Incomes earned in 2006				
	Greater Athens	Northern	Central	Islands
Wages/salaries	1.000	1.000	0.884	0.846
Pensions	1.000	1.000	1.000	1.000
Farming	0.533	0.574	0.489	0.490
Self-employment	0.702	0.701	0.624	0.553
B. incomes earned in 2010				
	Greater Athens	Northern	Central	Islands
Wages/salaries	1.000	1.000	0.886	0.831
Pensions	1.000	1.000	1.000	1.000
Farming	0.513	0.561	0.448	0.482
Self-employment	0.688	0.702	0.617	0.548

Notes: The adjustment factors are multiplied by survey incomes in order to derive a distribution of tax reported incomes.

Source: Own calculations using EUROMOD version F4.32.

Table 3

Under-reporting by level of income

	A. Incomes earned in 2006			B. Incomes earned in 2010		
	EU-SILC (€)	Tax data (€)	Under-reporting (%)	EU-SILC (€)	Tax data (€)	Under-reporting (%)
Decile 1	2,128	1,624	23.7	2,277	1,754	22.9
Decile 2	4,049	3,604	11.0	4,416	3,925	11.1
Decile 3	5,884	5,234	11.1	6,402	5,650	11.7
Decile 4	8,050	7,256	9.9	8,862	7,968	10.1
Decile 5	9,886	8,946	9.5	10,689	9,824	8.1
Decile 6	12,141	10,930	10.0	13,080	11,822	9.6
Decile 7	15,217	13,507	11.2	16,389	14,598	10.9
Decile 8	19,635	17,508	10.8	21,011	18,818	10.4
Decile 9	25,843	23,578	8.8	27,649	25,143	9.1
Decile 10	51,988	43,886	15.6	56,795	47,772	15.9
Top 1%	137,087	103,706	24.4	152,517	114,556	24.9
Top 0.1%	315,900	230,253	27.1	352,991	246,652	30.1
Total	15,422	13,600	11.8	16,739	14,723	12.0

Notes: Mean non-equivalised annual personal income by decile in current terms. Income deciles were constructed excluding those earning zero or negative incomes. Income is adjusted for under-reporting using the adjustment factors by region and income source as shown in Table 2. All figures are in nominal prices.

Source: Own calculations using EUROMOD version F4.32.

under-reporting for the entire population at about 12 percent.

Table 4 estimates taxable income and tax receipts under full compliance and tax evasion respectively. We show that tax evasion raises average disposable income by around 4.5 percent; and that it reduces the tax yield by approximately 28 percent (in 2006, rising to 30 percent in 2010).

Table 5 presents the distributional implications of tax evasion in terms of poverty, inequality, and tax progressivity. Since household disposable income is higher under tax evasion than it would have been under full compliance, the relative poverty line is also higher (by around 1.5 percent). Nonetheless, our results suggest that tax evasion causes relative poverty to rise slightly. All three inequality indicators (Gini, S80/S20, coefficient of variation) have higher values under tax evasion than under full compliance, indicating that the former results in a more unequal income distribution. Finally, our tax progressivity and redistribution indices (Kakwani, Reynolds-Smolensky) imply that income under-reporting renders the tax system considerably more regressive.

Table 4

Income tax variables under full compliance and tax evasion

	A. Incomes earned in 2006			B. Incomes earned in 2010		
	Full compliance (€)	Tax evasion (€)	Shortfall (in %)	Full compliance (€)	Tax evasion (€)	Shortfall (in %)
Reported income	15,422	13,600	– 11.8	16,739	14,723	– 12.0
Taxable income	15,621	13,701	– 12.3	16,746	14,611	– 12.8
Tax allowances	2,354	2,337	– 0.7	3,205	3,180	– 0.8
Tax reductions	240	238	– 0.9	268	265	– 0.8
Tax due (non-zero)	4,261	3,605	– 15.4	4,263	3,476	– 18.5
Tax due (all)	1,143	825	– 27.8	1,056	736	– 30.3
Disposable income	11,993	12,513	+ 4.3	13,063	13,632	+ 4.4

Notes: Mean non-equivalised annual personal income in current terms. 'Full compliance' provides an estimate of income tax variables assuming incomes are reported to tax authorities as observed in the survey. 'Tax evasion' provides estimates of the same variables assuming incomes are under-reported to tax authorities as implied by the adjustment factors as shown in Table 2. The share of positive non-zero income earners paying non-zero tax in 2006 was 40.3% and 34.4% under full compliance and tax evasion respectively (37.2% and 31.9% in 2010). All figures are in nominal prices.

Source: Own calculations using EUROMOD version F4.32.

Table 5

Fiscal and distributional implications of tax evasion

	A. Incomes earned in 2006			B. Incomes earned in 2010		
	Full compliance (€)	Tax evasion (€)	Difference (in %)	Full compliance (€)	Tax evasion (€)	Difference (in %)
Tax receipts (€ million)	12,131	8,753	– 27.8	11,210	7,817	– 30.3
Poverty line (€ p.a.)	6,041	6,146	+ 1.7	6,600	6,695	+ 1.4
poverty rate	19.7	20.0	+ 1.4	20.3	20.9	+ 2.9
Gini	0.340	0.357	+ 4.9	0.342	0.361	+ 5.4
S80/S20	5.845	6.262	+ 7.1	5.900	6.373	+ 8.0
Coefficient of variation	0.771	0.854	+ 10.8	0.761	0.861	+ 13.3
Kakwani	0.031	0.021	– 31.6	0.030	0.019	– 35.7
Reynolds-Smolensky	0.052	0.035	– 32.2	0.049	0.031	– 36.5

Notes: 'Full compliance' provides an estimate of income tax variables assuming incomes are reported to tax authorities as observed in the survey. 'Tax evasion' provides estimates of the same variables assuming incomes are under-reported to tax authorities as implied by the adjustment factors shown in Table 2. Fiscal effects (i.e. tax receipts) are non-equivalised. Distributional effects are computed on the basis of equivalised household disposable incomes. The poverty line is set at 60% of median equivalised household disposable income, and is calculated separately under full compliance and tax evasion. All figures are in nominal prices.

Source: Own calculations using EUROMOD version F4.32.

These results confirm our earlier findings that farming incomes and self-employment earnings account for the bulk of tax evasion in Greece, and that the pattern of income under-reporting by income class is U-shaped (Matsaganis and Flevotomou 2010). Moreover, although the crisis does not appear to be having a massive effect on under-reporting trends, changes in tax policy (i.e. the personal income tax schedule) appear to have caused a roughly similar level of income under-reporting (circa 12 percent) to translate into significantly higher loss of tax receipts in 2010 than in 2006 (30.3 percent vs. 27.8 percent respectively). The finding that the rate of income under-reporting at the top of the distribution seems to have risen recently is another pointer in the same direction.

Conclusion

The paper shows that tax evasion in Greece increases inequality and poverty, and reduces tax progressivity, while causing a considerable loss of tax receipts. Can these findings be trusted? One cause for caution is the distinction between the static and dynamic effects of tax evasion. It is important to remember that taxation (and, by implication, tax evasion) does not simply reduce disposable incomes; it also affects decisions concerning supply of, and demand, for labour, the allocation of disposable income between consumption and savings, the allocation of consumption between different goods and services and so on (Slemrod and Yitzhaki 2002; Sandmo 2005). Although the analysis of dynamic effects lies beyond the scope of this paper, we need to recognise that the implications of tax evasion exceed those that can be shown with a static arithmetical recalculation of the income distribution.

While our approach focuses on personal income tax, the distributional impact of evading other taxes (e.g. company tax, capital tax, value added tax) is likely to reinforce these effects. Evasion of social contributions, in particular, often taking place at the same time as income taxes, is likely to reinforce the regressive impact of tax evasion.

Our approach relies on matching data from tax returns with survey data. While we have made an effort to make the two sources comparable, our adjustment techniques offer at best good approximations. In particular, the truncated nature of tax records (i.e. low-income families pay no taxes) and the limited reliability of income statistics at either end of the income scale leave our estimates vulnerable to measurement error. Therefore, our results should be best seen as tentative estimates under an experimental research design.

Our key assumption is to treat incomes observed in EU-SILC as closer approximations of 'true income' on the grounds that people have no incentive to conceal their income from survey interviewers, since their disposable income would not be affected by their response. The intuition is reasonable, but not necessarily correct. There are reasons to suspect that the actual but unknown level of tax evasion may be considerably higher than that implied by our estimates. In particular, there is some evidence that the very same factors causing tax evasion, combined with the wish of tax-evading individuals to be somehow 'consistent', may cause under-reporting in income surveys as well, albeit at a lower level (Elffers *et al.* 1987).

In spite of the above caveats, we believe our results capture essential aspects of the problem we set out to explore. Our core finding, that tax evasion in Greece has a regressive impact, seems reasonably robust. In view of that, and under conditions of severe crisis, the task of combating tax evasion assumes greater urgency than ever before.

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Rethinking the Research Paradigms for Analysing Tax Compliance Behaviour

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It is often argued that citizens value the public goods financed by the money of other taxpayers, but that they themselves are reluctant to pay their own taxes. This reluctance to pay taxes is often explained by various theories, or 'research paradigms': by theories that emphasize individual self-interest, by alternative theories of individual motivation, by perspectives that focus on group interactions, by doubts concerning the responsible spending of the taxes by the government and its tax authorities, and the like.

A strong tradition here is the economics-of-crime paradigm that views the decision to pay taxes as an individual's choice between a sure option of paying all taxes honestly and a risky option of evading taxes. Depending on the audit and fine rates, the risky option may result in a higher or a lower payoff compared to the sure option. In this paradigm, tax compliance is understood mainly as the result of a rational 'portfolio' decision by a single taxpayer.

However, this research paradigm has been increasingly challenged as incomplete, both by economists but especially by psychologists, and especially under the premise that the complex decision to pay taxes cannot be understood solely by framing this decision as a decision under risk made by a single taxpayer. There are more 'actors in the field' whose separate behaviours, whose different motivations, and whose dynamic interactions must all be considered as a way of explaining compliance. The consideration of these actors, their behaviours, and their interactions has given rise to other and emerging research paradigms for the analysis of tax compliance.

In this paper we discuss these research paradigms. In the following sections we sketch the different paradigms and their development over time. We argue that these different paradigms require that particular attention be paid to the main 'actors in the field', which involves going beyond a focus on a single taxpayer to consider other taxpayers, tax accountants, the tax authorities, and the government. The ways in which these actors interact in different climates, especially the dynamics of power and trust between the actors, must also be considered. We conclude with a discussion of a framework – the 'slippery slope framework' – that attempts to synthesize these different research paradigms. Throughout, we illustrate our arguments by reference to research that focuses especially on the European experience.

Paradigm (1): tax compliance behaviour as an individual decision under risk

For many years, researchers were aware of the significance of such issues as taxpayers' attitudes towards the state, the government, and taxes in explaining tax compliance (Veit 1927; Schmölders 1960). However, much of this perspective was lost when the decision to comply was framed as a purely economic decision under risk. This economic theory of tax compliance behaviour was developed in the early 1970s by Allingham and Sandmo (1972) and Srinivasan (1973), who applied to compliance the more general theory of criminal behaviour first developed by Becker (1968). Here a 'representative' taxpayer either decides to declare his or her income honestly and to pay the legally due taxes as required, or s/he chooses the risky

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This paper is based on a keynote address given at the conference "The Shadow Economy, Tax Evasion and Money Laundering" held at the University of Münster in July 2011. This paper is a shorter version of a paper that addresses many of the same themes in more detail ("Combining Psychology and Economics in the Analysis of Compliance: From Enforcement to Co-operation").

option of evading taxes. In the case of an audit, the individual's cheating is discovered, the individual is fined, and s/he ends up with less money than if all income had been fully declared. However, if no audit takes place, the individual receives a higher income than if s/he had fully declared income. A central conclusion of Allingham and Sandmo (1972) and Srinivasan (1973) was that tax honesty increases with a higher audit probability and more severe fines.

However, there are various difficulties with this economics-of-crime paradigm of tax compliance behaviour. Perhaps the most fundamental problem with this research paradigm is that it is difficult to explain compliance behaviour by the purely financial consideration of enforcement (Webley *et al.* 1991). In this paradigm, it is sufficient to impose controls and sanctions severe enough to ensure compliance, making coercive power a necessary tool for government. However, if enforcement was the only consideration, individuals (especially those whose incomes are not subject to third-party sources of information) should report virtually no income, given the relatively low rates of audits and fines that exist in almost all countries. This type of behaviour is seldom, if ever, seen. A related problem is that the deterrent effects of audits and fines are typically present, but are not always very strong, as demonstrated in a number of studies on European taxpayers – see Kirchler *et al.* (2010) for a comprehensive review and summary of these (and other) studies.

Furthermore, the long-lasting effect of audits and fines is more than questionable. In an experimental setting, Guala and Mittone (2005) found a strong decrease in taxpayers' compliance immediately after an audit, even with no actual changes in enforcement. This so-called 'bomb crater effect' has proven to be quite robust in various experimental studies using European subjects (Kastlunger *et al.* 2009). One possible explanation is that those participants who were punished for incorrect declarations strived to regain their lost money in the following filing periods. Another is that audits and fines may be perceived as a signal of a lack of trust from the authorities, thereby generating a cycle in which mistrust on the part of the taxpayer is created, negative attitudes toward the authorities in general and toward taxes in particular are formed, and a crowding out of the 'intrinsic motivation' to cooperate results (Schmölders 1960; Frey 1997).

All of these results suggest the relevance of other possible *individual* motivations that go beyond narrow financial considerations to include notions of guilt, shame, morality, altruism, or alienation. These results also suggest that individuals may be motivated by *group* notions like social norms, social customs, fairness, trust, reciprocity, tax morale, and even patriotism, as well as by the public goods that taxes finance. More broadly, they suggest the relevance of other 'actors in the field', which necessarily leads to consideration of the ways in which these various actors interact.

For example, consider these 'actors in the field'. Taxes are paid not simply by a single taxpayer. Rather taxes are paid by all of the taxpayers of a state earning a taxable income, often with the assistance of tax accountants, collected by the tax authorities, and spent by the political representatives of the state. The combined activities of the responsible government, the tax authorities, the tax accountants, and all taxpayers are mutually related. The focus on a single taxpayer in the standard portfolio model of tax compliance behaviour necessarily neglects these other actors and their complex interactions.

Consider the *government*. By this we mean the elected representatives who are responsible for determining the various features of the tax system imposed on the taxpayers. Furthermore the way of communicating to the citizens the decisions on taxes and on spending are important aspects of the actions of the government. Laws are often not clearly formulated and comprehensibly communicated, as suggested by the fact that the reading skills required to understand legal texts in many western countries like Britain are much higher than the average reading ability in the populations.

Another actor is the *tax authorities* (or the tax administration), who act under the mandate of the government. The tax authorities offer services, implement controls, and impose punishments according to their conception of the motives driving the behaviour of the taxpayers.

Tax accountants often act as intermediaries between authorities and taxpayers, assisting taxpayers in the determination of taxpayer liabilities. In this, it is often assumed that the purpose of tax accountants is to reduce the tax load of their clients by all available means. In fact, Sakurai and Braithwaite (2003) found out that the majority of taxpayers expect their accountants to fill in their tax declarations correctly.

Finally, the decision of a *single taxpayer* on whether to cooperate depends on his or her own conceptions and judgments about the activities of *all other taxpayers*. As emphasized by Kirchler (2007), it has frequently been observed that the willingness to pay taxes increases with a rising awareness of tax laws and relevant rules. It has also been observed that social norms can be a strong regulative of behaviour and that citizens often have a pronounced sense of justice and respond to violations of the principles of justice. Finally, it has been observed that the individual motivation for cooperation or evasion varies across taxpayers.

Consequently, this early paradigm of tax compliance behaviour as an individual decision under risk neglects many essential elements. It focuses on only one motivation (e.g. a purely rational benefit-cost calculus) to the exclusion of other individual and group considerations. It largely ignores other actors like the government, the tax authorities, tax accountants, and all other taxpayers. It also neglects the psychological and social aspects of the interaction dynamics between these agents. Other research paradigms attempt to address these elements.

Paradigm (2): tax compliance behaviour as a social contribution dilemma

Taxpayers often recognize that their taxes are used for the community welfare, and most understand that taxes need to be paid to finance public goods. Nevertheless, individuals may also doubt whether the taxes that they pay are being spent efficiently. They may also suspect that some individuals may not pay their taxes while still enjoying the public goods. This raises a 'social contribution dilemma' (or a 'free-rider problem'), where personal gains work against the collective good.

More precisely, Dawes (1980) defined a social dilemma as a situation in which an individual's interests are opposed to those of the community. By acting selfishly, an individual can benefit. However, if most individuals similarly decide to maximize their own individual profit, then everyone is harmed because the public goods are not provided. In laboratory experiments, this social dilemma can be easily created (Davis and Holt 1993). Participants are endowed with money and are free to contribute any given amount to a collective account. The experimenter tells the participants that the collected sum will be increased by a fixed factor, and returned to the participants in equal proportions. If all players are uncooperative, then nothing can be redistributed from the collective account, and everyone is left with only their original endowed money. If everyone cooperates, then the collected amount is increased by the fixed factor, and everyone is better off relative to the uncooperative outcome.

The crucial question is how to influence the willingness to cooperate. In the laboratory, the 'experimenter' is essentially the 'government', and can be assumed to act honestly. However, it cannot be assumed that the other players (e.g. the 'taxpayers') can be trusted, and typically they do not trust each other. Even so, there is some experimental evidence that cooperation increases when subjects are allowed to communicate, when they set the rules of the game themselves, and especially when any defection is announced in public (Wahl, Muehlbacher and Kirchler 2010).

These experimental results are also supported by empirical evidence in regionally limited areas with direct democracy. For example, the cantons in the east of Switzerland approach the highest level of tax honesty relative to other countries and regions (Feld and Matsusaka 2003; Muehlbacher *et al.* 2008). Similarly, Rothstein (2000) reported an encounter with a Russian tax official who argued, that although Russians cherish the public goods financed by tax payments, most of them do not want to pay taxes because of the high corruption and lax social norms to cooperate. To increase compliance, he argued that two conditions need to be fulfilled, both of which act broadly to increase 'trust': taxpayers need to believe that other taxpayers are paying their shares, and the tax authorities must ensure that the taxes are invested in the public welfare rather than filling the pockets of tax administrators or other government officials. Put differently, both *interpersonal* trust and *institutional* trust are of paramount importance for ensuring cooperation.

Overall, however, the social contribution dilemma research paradigm remains largely oriented toward an individual taxpayer as rational and maximizing, and the suspicion remains that an individual would not behave cooperatively if able to hide in the anonymity of the masses. Further, although taxpayer interactions with other taxpayers *via* the group are now recognized, other types of interactions – indeed, other actors – are not considered. Finally, much of this research continues to view all individuals as the same. The next research paradigm focuses largely on this last omission.

Paradigm (3): tax compliance behaviour as behaviour of many different taxpayers

The economics-of-crime approach tends to view each taxpayer as the same, motivated by the same type of utilitarian consequentialism that requires individuals to evaluate different states of the world purely on the financial outcomes. However, it is obvious that taxpayers cannot be perceived as a homogeneous group. Some individuals may be motivated only by financial outcomes, but others may have different preferences, including nonfinancial considerations like guilt, altruism, fairness, or reciprocity. Furthermore, the process by which a different outcome is attained often matters. In short, people exhibit great diversity in their behaviour, and a research paradigm must recognize this 'full house' of behaviours (Alm 2012).

For example, the opportunity for cheating has been shown to matter, and this opportunity differs across individuals. Employees in many countries have their taxes directly deducted from their salary with little opportunity to cheat. Even though self-employed individuals are also required to pay various taxes, the self-employed have a much greater opportunity to cheat because they are not subject to employer source-withholding and must, instead, pay taxes out of their own pockets. In fact, there is some evidence that there is more evasion on such out-of-pocket-payments (Kirchler, Maciejovsky and Weber 2005).

However, the general opinion that the self-employed are always unwilling to pay their taxes is false. Although the self-employed when young and inexperienced show a greater tendency towards evasion, this tendency decreases with work experience (Kirchler 1999). This behaviour may occur because increasing experience leads to the establishment of separate 'virtual' accounts for tax debts and own money.

This behaviour may also occur because of individual differences in morality. Such differences have been shown in a natural field experiment investigating the honesty of Austrian newspaper purchasers (Pruckner and Sausgruber 2012). Sunday newspapers in Austria are placed in plastic bags attached to street lanterns, and anyone who wishes to buy a paper is asked to put money into a fixed cashbox. However, there is no monitoring, so that individuals may pick up a newspaper without making any payment. Pruckner and Sausgruber (2012) found that approximately one-third of the (observed) customers paid at least part of the price, while the other two-thirds did not pay anything at all. However, when a message thanking customers for their honesty was added to the plastic bag, they found that cooperation increased.

All of these results are consistent with work by Braithwaite (2009), who has argued that taxpayers differ strongly in their motivations. She distinguishes five 'motivational postures'. 'Commitment' and 'capitulation' both combine views that express a responsibility to cooperate. Other postures express a negative tendency to cooperate. 'Resistance' is characterized by doubt regarding the good intentions of the government; 'disengagement' refers to individuals who have abandoning the struggle for their own rights and see no sense in cooperating; 'game playing' denotes taxpayers who refuse to act according to the law, and see the law as something that can be used to their own advantage. Braithwaite (2009) uses this framework to argue for a differential approach by the authorities, and one that emphasizes that taxpayers should be dealt with according to their underlying motivational posture. A service orientation is needed for some taxpayer segments, while 'an iron fist in a velvet glove' should await those who repeatedly and deliberately violate the law.

However, the taxpayer remains the centre of attention, and other actors are more or less neglected. Furthermore, the tax authorities themselves are not questioned. The next research paradigm addresses these last limitations.

Paradigm (4): tax compliance behaviour as a psychological contract

A more recent research paradigm emphasizes that tax compliance behaviour can be broadly viewed as a 'psychological contract' between taxpayers, the tax authorities, and the government. Central to this contract is the broad notion of a 'social norm' of behaviour (Elster 1989).

There is no one single definition of a social norm. Even so, it is now widely accepted that a social norm can be distinguished by the feature that it is process-oriented, unlike the purely outcome-orientation of individual rationality. It also represents a pattern of behaviour that is sustained largely by social approval or disapproval: if others behave according to some socially accepted mode of behaviour, then the individual will behave appropriately, but if others do not behave in this way, then the individual will respond in kind. This factor suggests that an individual will comply as long as s/he believes that compliance is the social norm (however defined); conversely, if non-compliance becomes pervasive, then the social norm of compliance disappears. More broadly, a social norm suggests that the nature of one's social interactions with others affects one's own compliance decision.

The presence of a social norm is also consistent with many other approaches, including those that rely upon social customs, intrinsic motivation, tax morale, civic duty, appeals to patriotism or conscience, or feelings of altruism, morality, guilt, and alienation. For example, Braithwaite (2009) argues that most people have an 'intrinsic motivation' to cooperate. Similarly, Schmölders (1960) and Frey (1997) define 'tax morale' as an intrinsic motivation to pay one's taxes, so that tax morale is anchored in the consciousness to be a citizen as a basis to accept one's tax duty and acknowledge the sovereignty of the state. Orviska and Hudson (2002) link tax morale to the concept of civic duty, proposing that people are motivated by a sense of responsibility and loyalty to society. Responsible citizens are said to be collaborative, even if the system would allow for non-compliance, because their behaviour is not externally regulated by controls and sanctions, but rather by a concern for society. This intrinsic motivation to cooperate can be 'crowded out' by exaggerated punishments for non-compliance or inadequate rewards for cooperation (Frey 1997), as shown by in experimental work by Gneezy and Rustichini (2000). In empirical work, Alm and Torgler (2006) find significant differences in tax morale across European countries.

Indeed, inspired by the concept of a 'psychological contract' between employees and management in organizations, Feld and Frey (2007) have argued for maintaining a good cooperative relationship between authorities and taxpayers, one that goes beyond legal regulations. Building on a norm of reciprocity, they suggest that the commitment of one party requires an equivalent commitment of the other party. By focusing on the reciprocity of commitments between authorities and taxpayers, the usual hierarchical and authoritarian structure often reflected in the formulation of tax laws seems obsolete, and the possibility of an adverse reaction to enforcement seems plausible. The psychological contract therefore implies that citizens will entrust their money to the government and the tax authorities to use it for sensible projects. As long as the tax authorities and elected politicians do not disappoint the trusting citizens, taxpayers will cooperate to ensure the provision of public goods. If this psychological contract is violated, taxpayers will no longer cooperate by paying their taxes.

Of some relevance here is the dynamics of power and trust between the various actors. 'Power' can be defined as the potential and perceived ability of a party to influence another party in an intended way (Russell 1986). The most prominent psychological taxonomy stems from French and Raven (1959), who distinguish between 'coercive power', 'reward power', 'legitimate power', 'expert power', 'referent power', and 'information power'. Also useful here are two meta-factors: 'harsh power', which combines coercive and reward power, and 'soft power', which includes legitimate, expert, referent, and information power (Raven, Schwarzwald and Koslowsky 1998). There are also different notions of 'trust' (Castelfranchi and Falcone 2010). Most definitions distinguish trust based on automatic, intuitive, or affective processes (or implicit trust), from trust determined by the motivation, benevolence, goal achievement, and dependency on trustees (or reason-based trust).

Several studies in less applied fields of research have argued that exerting power leads to negative effects on trust, by evoking suspicion and mistrust (Gambetta 1988). This result is consistent with a crowding out of the intrinsic motivation to cooperate (Frey 1997; Feld and Frey 2007). However, some studies have suggested that power affects trust positively (Bachmann 2001). For example, depersonalized forms of power (e.g. technical standardization, trade associations) can be perceived as a necessary precondition for trust.

There are also some studies that examine the opposite question: how does trust affect power? There is some evidence that trust might decrease the perceived level of power (Nooteboom 2002). Trust can make measures directed at enforcing rule compliance unnecessary, thus making the exertion of power redundant (Gulati 1995). However, trust may also increase power. If one of the involved parties is assumed to be trustworthy and able to exercise legitimate power, then other party is more likely to be compliant, therefore increasing the power of the first party (Tyler 2006).

Overall, the evidence on the various interactions of trust and power remains somewhat murky, and requires additional research. Nevertheless, the assumption of a psychological contract shifts attention away from taxpayers acting alone to the relationship between taxpayers (and their accountants), the government, and the tax authorities. All actors are now seen as partners in a cooperative relationship.

Towards a synthesis

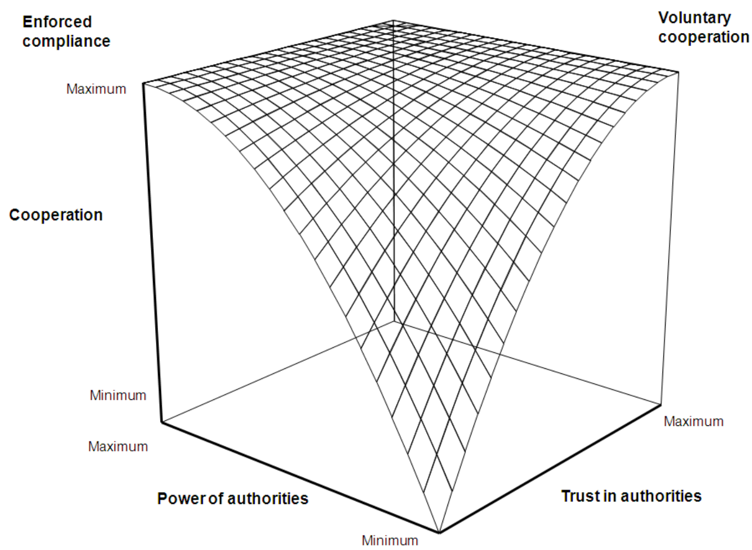
How – if at all – can these various research paradigms be combined into a single framework? One promising approach has been labelled the 'slippery slope framework' (Kirchler, Hoelzl and Wahl 2008). This framework recognizes the relationship between all actors – taxpayers (including tax accountants), tax authorities, and the government – and it considers the many possible avenues of their interactions, all as a determining factor of taxpayer compliance behaviour. All actors and their relationships need to be taken into account, and all interactions need to be structured in a way that promotes cooperation. The government and the authorities are no longer assessed as superior agencies that force legal compliance in general and tax honesty in particular, but are seen as servants of the citizens acting for the well-being of the community. Instead of concentrating on the enforcement of compliance, importance is granted to shaping the interaction as to promote mutual trust and cooperation. This corresponds to the 'trust paradigm' that Alm and Torgler (2011) identify as one of the three paradigms of tax administration (in addition to the traditional 'enforcement paradigm' in which taxpayers are treated as potential criminals and the 'service paradigm' that acknowledges the necessity to ease tax honesty by way of service offerings). Tax authorities are to provide services to taxpayers that facilitate compliance with the law. The 'trust paradigm' emphasizes the importance of building trust between interacting parties, based on the expectation of taxpayers and tax authorities that the other party will act beneficially, rather than detrimentally (Gambetta 1988).

The slippery slope framework distinguishes between two types of tax honesty: *voluntary compliance* and *enforced compliance* (see Figure 1). These behaviours depend, in turn, on the power of the authorities and on the *trust* that individuals have in the authorities. Voluntary compliance depends primarily on trust in the state and its authorities, which is influenced mainly by perceptions of fairness and social norms and therefore may be better entitled *voluntary cooperation* (as in Figure 1). If taxes are not paid voluntarily, tax honesty can also be ensured by enforcing citizens to pay under the precondition that the authorities have the power to exert sufficient deterrence pressure, including (perceived) audit frequency and severity of fines. It is assumed that tax payments are influenced by trust and power of authorities: if both trust and power are at a minimum level, tax payments are assumed to be low and taxpayers will act selfishly by maximizing their own gains through tax evasion. When trust in authorities increases, tax payments are also assumed to increase. Furthermore, if the power of authorities (including the ability to detect and punish tax fraud) increases, then tax payments are expected to increase as well.

Wahl, Kastlunger, and Kirchler (2010) empirically tested the basic assumptions of the slippery slope framework with a computer-aided experiment. Participants were randomly presented with one of four different descriptions of a fictitious country, in which the authorities were characterized as either trustworthy or untrustworthy on the one hand and as either powerful or powerless on the other hand. Their results showed that participants paid significantly

Figure 1

The Slippery Slope Framework of Tax Compliance Behaviour



Source: Kirchler, Hoelzl and Wahl (2008).

more taxes when power and trust were high compared to the other conditions, as suggested by the framework. They also found that voluntary compliance was highest when the authorities were presented as trustful and powerful, while enforced compliance was highest when authorities were portrayed as powerful, but not trustworthy. An online experiment by Wahl, Kastlunger, and Kirchler (2010) and two surveys of real-world taxpayers (Muehlbacher, Kirchler and Schwarzenberger 2011; Muehlbacher, Kogler and Kirchler 2011) have also confirmed the usefulness of the slippery slope framework. Even so, the power and the trust dimensions in the framework are likely to affect each other, and therefore may have complex interactions and dynamics. Furthermore, as suggested by Alm and Torgler (2011), it may be useful to explicitly add an additional dimension of action by the authorities, one that corresponds to their service paradigm. As noted earlier, all of these dimensions require additional research.

Conclusions

There is little doubt that we have learned much in our understanding of tax compliance behaviour. There is also little doubt that there are still major gaps in our understanding. The dominant trend in tax compliance behaviour research indicates a clear move from a paradigm whereby an individual taxpayer is seen as a selfish individual who maximizes his own financial gain, to paradigms that recognize the differences in individuals, their different motivations, the different actors, and the different climates in which all of these actors interact. These paradigms continue to rely on an economic framework, but they also recognize insights from other disciplines, especially psychology. Indeed, we believe that all research paradigms offer essential contributions to deepen understanding of tax compliance behaviour, and we also believe that an integration of all findings – although not easy to achieve – offers the most promising path ahead. It is especially important to recognize the insights offered by these different research paradigms in devising policies to combat tax evasion.

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Debt-to-equity Swaps in Eurozone's Banking Sector: Minor Short-term Pain for Substantial Long-term Gain

Rui Soares*

Introduction

It is generally accepted that any solution for the eurozone debt crisis has to encompass a comprehensive write-down of banks' bad assets – including sovereign debt haircuts – followed by a massive recapitalisation of the European banking sector. Only then, will we see again (i) a properly functioning European interbank market and (ii) credit flowing to the 'real' economy (read small and mid-sized companies). Without it, a lost decade '*a la* Japanese' will be unavoidable for many eurozone countries, starting with the periphery – at best. At worst, the collapse of entire national economies and the end of the eurozone as we know it will occur.

The recapitalisation proposals being put forward have different forms and shapes, ranging from mergers in the banking sector (followed by recapitalisation of the newly merged entities) to the implementation of a bad bank/good bank model (followed by recapitalisation of the newly created entities). However, all the proposals have one thing in common: the recapitalisations will be financed with taxpayers' money. Either entirely or partially, depending on how much equity banks will be able to raise money from private investors.

The questions we must then ask ourselves are: why should the taxpayer provide any of the required financing? Why not simply force debt-to-equity swaps in the banking sector?

* HPR, London. This contribution reflects the personal opinion of the author. It does not necessarily correspond to the views of the HPR London.

Debt-to-equity swaps in eurozone's banking sector

Under a debt-to-equity swap framework, the relevant supervisory authority forces banks to write off their bad assets as well as making sure that they are written off to their realisable value (i.e. their market price when there is a liquid market; otherwise the price for which they can realistically be disposed off – if necessary assessed with the help of external independent advisors). In case there is not enough equity left to comply with the minimum capital requirements, banks are given the chance to raise the requested funds in the market. For those not able do so within a short time frame, the supervisory authority takes control of them, depositors are protected, trading in the shares suspended and the recapitalisation done *via* debt-to-equity swaps. Shareholders end up being (at least partially) wiped out, bondholders become the new (major) shareholders. Shares are returned to normal trading as soon as the swaps are concluded. No taxpayers' money is used to recapitalise the banks.

What are the potential arguments against debt-to-equity swaps?

1. Debt-to-equity swaps would create major market turbulences. True. Then again, in case no one has noticed, we are already experiencing recurring massive market turbulence. Once the debt-to-equity swaps were concluded and the banks recapitalised, market turbulence would be over and the entire banking system would be on a sound footing. So the question is: is it better to have recurring market turbulence every 3 to 6 months or a major market turbulence that lasts for 3 to 6 months and is then over for good?
2. Banks at risk of suffering debt-to-equity swaps would be cut off from market financing. So what? Banks cut-off from market financing could receive liquidity injections from the ECB. Given that once the debt-to-equity swaps were concluded the banks would be sound and solvent, there is no risk that the ECB would not get its money back.
3. Banks would never again gain access to market financing. Nothing could be further from reality. If this were true, it would mean that investors are

happy to lend money to banks that have an equity-to-total-non-risk-weighted-assets ratio of 3 percent, but not to banks that have a ratio of, for example, 10 percent, which is what could happen once the debt-to-equity swaps were concluded. In other words, which investor would not be willing to lend money to sound and solvent banks?

4. Banks' cost of capital would rise. How can the cost of capital for well-capitalised banks be higher than for banks with a thin equity buffer? Are investors irrational and unable to access risk? If they are not, than the only explanation for a higher cost of capital would be that bondholders are currently pricing in an unlimited taxpayers' protection in case of bank losses. Even if this were the case, aren't well-capitalised banks, with a substantial equity buffer, the best protection that bondholders can wish for? This is especially true given that in extreme economic distress situations, the sovereign tends to be insolvent? If so, then this must mean that even if there was a spike in the cost of financing, it should be short lived. Investors would soon bring it down after realising how favourable the risk-return profile of excessively high yielding bonds of well-capitalised banks' was; especially when compared with alternative investments of similar (low) risk.
5. Investors in general and pensioners in particular would be faced with substantial losses. Fixed income funds and many pension funds would have to sell the shares their bonds were swapped for, as they are not allowed to hold equities. This would create a massive turmoil in financial markets in general, and equity markets in particular, leading to substantial losses for investors. The answer to this argument can only be: yes. And no. Firstly, and as already mentioned above, the turmoil would be limited in time. Once the sell-off was finished the markets would rebound, as financial assets – and especially bank shares – would be undervalued. It would be a purely technical reaction. Secondly, fixed income and certainly pension funds could renegotiate the investment mandates with their clients to deal with the special situation that large scale debt-to-equity swaps would create. For exceptional circumstances, exceptional investment mandates. Why shouldn't investors and pensioners agree to let fixed income and pension funds hold bank shares resulting from debt-to-equity swaps for a 3 to 5 year period? It would be in their own best interest to avoid forced selling of shares translating into a selling price below fair value. By holding the shares for a 3 to 5 year period, investors would most likely make good money with them: shares of well capitalised banks in a recovering economy should actually do very well. In short, fixed income investors and pensioners would only be likely to lose money with the newly issued bank shares if they wanted to.

What would be the advantages of debt-to-equity swaps?

1. Fairness, compliance with the basic principles of a market economy and democracy. Investors chose freely to invest in banks. Taxpayers didn't. As the investors they are, banks' shareholders and bondholders knew that there were risks associated with their investments – just like with investing in any other type of company. So, if they had the freedom to decide in what to invest, how come they don't have to bear the consequences of their freely made decisions? Don't freedom and responsibility go hand in hand with each other? Is this not a basic principle of a democratic system and a market economy?
2. More stringent capital requirements and higher capital ratios possible, which should be implemented swiftly. Availability of public money to recapitalise banks is limited. Debt-to-equity swaps would make it possible to set much higher capital ratios for the banking industry and thus contribute to make over-indebtedness and financial crisis much more unlikely to occur in the future.
3. More resources left to finance public investment. With bank recapitalisation carried out without the use of public money, governments would have more resources available to finance projects with a direct impact on the economy's supply side, i.e. productivity enhancing: infrastructure, technology, education, R&D.
4. More efficient future capital allocation. Let us say that besides shareholders, bondholders ultimately ended up losing money with the debt-to-equity swaps as well. What would be the problem? This is why bonds issued by banks offer a higher yield than government bonds and bank deposits. Bank bonds have interest rate and credit risk. If credit risk materialises, bondholders have to accept the consequences. Complaining when faced with losses is an absurdity as investors are paid for taking the credit risk. It is simply the market economy at work. Realising that there are no free lunches in a market economy would make investors more vigilant in the future and encourage them to request larger capital buffers and more top management

accountability. The probability of creating an overblown financial system, over-leveraged economy and asset bubbles would be greatly reduced. A more efficient allocation of resources in the economy would be the outcome. This is hardly something we should not whish for or be unhappy about.

5. Generation of positive momentum to create a pan-European supervisory authority. Given the high level of coordination among member states that a fully-fledged recapitalisation of the entire eurozone banking system would require, and even more so if achieved *via* debt-to-equity swaps, the need to create a pan-European supervisory authority would become obvious. The pressure and political willingness to push ahead with this initiative would gain traction. Given that a stable monetary union without a centralised pan-European bank authority is a logical impossibility, this would be very good news indeed.
6. Structural reforms made easier. With banks' bad assets (including sovereign debt haircuts) written-off and the eurozone banking system recapitalised, return to economic growth would be easier to achieve as the credit crunch would basically be over. With economic growth returning, the structural reforms needed in the peripheral countries would be easier to implement.
   Note: structural reforms won't be enough. The competitiveness of (most) EU's peripheral countries is unlikely to be fully restored even at the end of a comprehensive implementation of structural reforms, i.e., (smaller) current account imbalances are likely to remain in place even if the structural reforms are wide-ranging and successfully implemented. However, with structural reforms in place, good quality infrastructure, lower labour costs, a well-educated young workforce and the right incentives in place, these countries could start to attract significant export-oriented foreign direct investment. This would have an immediate impact on GDP growth (*via* private investment) and employment; in the mid-term, once the projects became fully operational, a positive impact on the current account balance and consequent elimination (or major mitigation) of current account imbalances would be the result. Expecting that the peripheral countries with the largest external imbalances (Ireland, Portugal, Spain and Greece) will be able to correct their external imbalances without substantial foreign direct investment while remaining in the euro is unrealistic anyway.
7. More balanced generational burden sharing. If the entire banking system ends up being bailed out by the taxpayer, it will be the younger generations that will bear the heavy burden of the crisis. They are effectively the taxpayers. These generations will also have to suffer the consequences of the slow government debt deleveraging process over many years (remember: overall public debt in the EU would increase if taxpayers had to finance the recapitalisations): slower economic growth today, less spending on education, R&D and infrastructure, smaller productivity gains, lower potential economic growth in the future. If debt-to-equity-swaps are implemented to recapitalise the eurozone banking system, it will be the older generations (and especially the baby boomers) that will bear most of the costs. They are, directly or indirectly, the banks major shareholders and bondholders.

The ultimate question then is: is this fair? The answer can only be: yes. Firstly, because the younger generations (i.e. the taxpayers) have mainly financed the bailouts to date; and secondly, because it is the older generations who have benefited the most from the credit induced economic boom over the past 25 to 30 years and enjoyed higher salaries, higher asset prices and higher pensions. Thirdly, this concept is fair because it would be the wealthiest members of the older generations who would primarily bear the burden, as they are the main owners of bank shares and bonds. Fourthly, because the losses they would have to bear would just account for a small fraction of their net financial assets – their standards of living would not be significantly impaired. Fifthly, because over time they would be very likely to recover from their losses with the appreciation of the newly issued bank shares, and finally, because it is neither fair nor economically sustainable that the younger generations, who came late to the credit induced economic party, now have to do all the day-after cleaning by themselves. With the eurozone's average unemployment rate of under 25 year olds at 22 percent – over 50 percent in Spain and Greece, around 30 percent in Italy and Portugal – this should be very clear in the minds of European authorities. Generational burden sharing is necessary and will have to happen. In one form or another.

Conclusions

In this paper, it is argued that

1. The recapitalisation of the European banking system is a necessary condition to solve the eurozone

debt crisis and restore high and sustainable economic growth.
2. That no taxpayers' money should be used to recapitalise the eurozone's banking sector. It should be banks' shareholders and bondholders who foot the bill *via* debt-to-equity swaps.
3. The potential arguments against debt-to-equity swaps tend to be myopic as they are only valid for short-term time horizons. At best. In the mid-term they seem to be irrelevant.
4. The advantages of debt-to-equity swaps are significant in terms of (i) fairness, (ii) economic efficiency, (iii) future stability of the eurozone's financial system, (iv) economic growth and (v) generational burden sharing.
5. Generational burden sharing will have to happen. At stake is nothing less than the future of Europe.

The time to act is now.

Time to Talk about Smart Growth and Restructuring in Eurozone Countries

Edward G. Krubasik*

Many economists are questioning the present austerity focus of eurozone countries and arguing that restructuring alone is not going to solve eurozone problems – neither those of Greece, Portugal, Italy, Spain and Belgium, nor those of France, and maybe not even Germany's problems. It will result in a painful, long period of inexistent or slow growth. In extreme cases, it may even increase debt to GDP as a result of GDP shrinkage. Some economists have even been arguing in favour of avoiding restructuring, and focusing instead on growth *via* continuing deficit spending. Growth with miserable, uncompetitive structures, on the other hand, will be hard to achieve; and deficit financing hardly leads to competitiveness for ailing countries in the EU (and globally). The goal of restructuring must be to lay the ground for healthy growth again; i.e. to create a competitive cost structure and organization to allow sustainable growth and to rebuild a solid balance sheet in order to regain confidence of financial markets. An aggressive growth program must be based on healthy structures, thus in most national turnaround cases growth programs will follow restructuring programs.

Restructuring national economies is a similar process to business restructuring, and not only in terms of objectives: many experiences in goal-setting, structure and the processing of programs can be shared. If we compare it to industrial restructuring, both also call for an initial focus on the impending disaster, in order to motivate and mobilize all forces to accept tough restructuring – without much talk of growth as an unlikely immediate escape, only with a rough positive vision of a more competitive and brighter future. Growth in unhealthy structures will be miserable and will only lead to more deficits or losses. You have to earn your right to grow – namely to prove that you are really on the way to become competitively viable. Such developments are powered by skilled leadership to create a will and motivation to go through massive change to create a better future.

Thus expert turnaround managers in industry have learnt to intelligently combine both restructuring and growth actions: turnaround managers focus on growth only when restructuring of the enterprise has been accepted by all parties. Management and labor need to see the abyss, and leaders subsequently need to motivate everyone to restructure; and only after restructuring actions are accepted and on the way to implementation can experienced turnaround managers talk about growth. Of course, good industrial restructurers know that the financial and social cost of restructuring can be significantly mitigated if they find healthy areas of business where they can start a growth program immediately. Therefore, as soon as restructuring actions take hold and healthier structures (promising competitiveness) are visible, experienced restructurers call for an all-out growth effort in healthy business areas; then they put the same emphasis on growth and restructuring programs. Growth becomes an entrepreneurial obligation. Such growth often includes a shift in business portfolio; for nations this may mean growth from investment, not simply consumer driven growth; or growth shifting from solely agriculture and construction to higher value-added industry sectors.

Restructuring is a prerequisite for growth in over-indebted nations just as it is for over-indebted enterprises. Moreover, reducing budget deficits and debt by austerity is a good start towards achieving a sustainable financial eurozone again, but it is only part of the job. Fiscal and structural renewal is also much more difficult without growth. Intelligently combining restructuring and growth – the expert way of a successful turn-around – may well be best for nations, just as it is for companies. Both enterprise and nation leaders know that without a growth program, restructuring creates the socially unacceptable hardship of lay-offs, and that without a positive growth perspec-

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tive the restructuring motivation will not hold very long. Furthermore, investors won't believe in the success of a turnaround if a credible medium-term growth plan is not visible.

On the other hand, it is worth remembering that restructuring can be much more than deficit and debt reduction, and that growth is not equal to deficit spending. Restructuring can mean regulatory restructuring of parts of the economy and regulation for more competition, as EU history shows. All the successful regulatory EU measures to open closed markets to competition, thus restructuring entire industry sectors (like telecommunications), donned growth wings to players in these markets through competition. Similarly, growth can be different from deficit spending: EU climate initiatives *via* standard setting and incentives are highlights of growth without deficit spending (the ill-fated PV subsidies in Germany being the exception, not the rule) and mobilizing private sector investment (instead of taxpayers' money) may be the call of the day. Growth without deficit spending should be called 'smart growth'.

It was by no means just the 2008 financial crisis that created such a great need for restructuring in the eurozone: the euro project that was so successful at the outset had some basic design flaws that have become only apparent after 10 years (pointed out early on by David March and others). Financially less-disciplined eurozone countries (deprived of the devaluation adjustment option) ran into cost competitiveness, inflation and trade balance problems and accumulated unsustainable debt to finance imports, overspending on consumption, unviable real estate projects, etc.

After 10 years of running off-track in the eurozone, we now have to create a well-balanced, but forceful program of restructuring and growth for the eurozone and the EU. In view of the massive fear and distrust of financial markets, and increasingly also of the populations of southern eurozone countries, a complete program package may not only be the way to repair eurozone economies, but may also be the best way to restore the confidence of financial investors. The key measures of such a program are listed and discussed below:

- Stop the vicious cycle of mistrust; recreate financial stability and discipline in the eurozone
- Differentiate cost reduction and growth measures across the entire EU
- Restructure for competitiveness, entrepreneurship and innovation
- Create longer term growth driven by investment in the EU
- Create a renewed vision for an attractive EU and eurozone
- Evolve EU governance

While the first of these actions is a specific eurozone task, all other repair points most likely involve all EU countries, and not only the eurozone. Moreover, even if not affected by euro design flaws, large non-euro parts of the EU were affected by excessive debt problems stemming either from the last financial ABS crisis like Britain, or of their own making like, for example, Hungary.

Stop the vicious cycle of mistrust, recreate financial stability and discipline in the eurozone

Let's be glad to have financial markets that demand financial discipline from the EU, and in particular from all eurozone countries. Markets and market interest rates don't allow governments to simply postpone the pain of solving the debt problem and repairing euro flaws. At last, every lender has understood the need to differentiate the risk along financial discipline of individual countries again, forcing weak governments to get deficit spending and debt level back under control by imposing high interest rates.

The eurozone finance ministers and heads of state have done well to address the issue of financial discipline and thus start the restructuring process. Placating financial markets by Eurobonds or ECB unlimited bond purchases would only have covered up unsustainable debt problems, as well as the trade balance and competitiveness problems of some eurozone countries. (Financial markets in the short term are not focusing on solving the underlying problem of excessive debt; they ask only for a guarantor for debt payback.) Yet financial markets also see the eurozone design flaws that led to its competitiveness problems, balance-of-payment problems and over-indebtedness. In addition, investors do not yet see the attractive growth and investment conditions aspired to in most of the EU, which dominated the launch of the common market and later of the visionary Lisbon agenda. To escape from the present 'excessive debt and low growth trap', the eurozone needs to deleverage again and fix euro design flaws; while the EU as a whole needs to overcome decade-old growth problems.

Overall, more comparisons with and lessons from the United States – the only federation of states with a common currency – should be useful.

- *Stabilize eurozone banks short term and to stop the vicious cycle of mistrust:* some first effective measures have been taken, i.e. short-term ECB liquidity support and recapitalization rules for eurozone banks; and – at the pressure of G20 – a credible firewall around large euro-economies is being built. Strengthening the ESM euro defense needs to be continued to a level so that, together with the IMF, it could refinance countries like Italy and Spain for several years, if they were denied access to financial markets. The extremely cheap ECB liquidity facility is buying time (3 years) that will hopefully be well used by banks to restructure aggressively and to recapitalize. However, it also eliminates market forces and drives away private capital that would require a much higher risk premium. National or (better in the context of more EU integration) European regulators have to replace market pressure for bank restructuring now. The question of how to win back these private capital providers at the end of the three year period still remains. Moreover, with time bought for Greece by the second bail-out, the need has not disappeared to prepare EU banks for possible further debt restructuring in the future, or for the effects of a final failure of the weakest country.
- *Repairing eurozone design flaws:* to recreate financial stability and discipline, the root causes of the crisis have to be addressed by repairing euro design flaws parallel to deleveraging. There was too little discussion of early design flaws in the common currency, which included little differentiation of interest rates for very diverging nation debtors, contradiction of Maastricht and EBA rules misguiding markets, no rule enforcement, a target credit scheme without sound collaterals, no integrated fiscal and economic governance. Misguided markets in the eurozone (taking nation debt as 100-percent safe according to EBA rules, not requiring underlying equity) were allowing undisciplined, weak, fragmented democracies to accumulate government debt up to 200 percent of GDP; weak governments on the other hand were tempted by unreasonably low, non-differentiating interest rates to raise living standards by debt financing (spending on consumption, generating cost inflation by increasing salaries and pensions while missing investment for next generation). As a result, the eurozone was sent on a track of diverging competitiveness of eurozone countries and resulting trade and balance-of-payments problems; fiscal (and economic) divergence in lieu of convergence; contributing as a consequence to unemployment and increasing social inequality in many countries and across the eurozone. One could say that these ill effects of the euro design flaws were recognized too late in view of the well-recognized advantages of the common currency. They need to be fixed even faster than the much talked about, unsolved problems of global reregulation of financial markets. Yet all of these flaws can be fixed and this crisis is a good opportunity to do so.

  - Repairing euro currency rule design flaws (one interest rate fits all, contradiction of Maastricht and EBA rules, no rule enforcement, target credit scheme without reliable collaterals, no integrated fiscal and economic governance) has not been discussed enough yet by euro politicians busy with short-term fire-fighting. Committing all eurozone countries (and even more) to return finances back to 'Maastricht-plus' criteria is only the beginning; the EBA will have to abandon the rule of no underlying equity for EU countries' national debt; most urgently, the target-2 credit system (analyzed well by Hans-Werner Sinn recently) will have to be reworked with a repayment scheme for outstanding debt possibly along the lines of Fed ISA balances in the United States with gold backed securities. There may be other ways to secure target credits with the assets of debtor countries or to restrict the capability of national central banks to print money. There may be more to be copied from the US dollar: mismanaged US states are not bailed out by the central government and yet the dollar as a currency is still easily defended by the Fed. All such changes may need to come in several steps to avoid system shocks. They may also require significant pressure from creditor countries, which have to convince a majority of debtor members in the euro system.
  - Repairing economic governance design flaws: if the (still to be ratified 25 times) Maastricht-plus treaty is the beginning of stronger financial and economic integration of the eurozone, the real challenge of an economically balanced eurozone lies in reducing the economic imbalances of north and south in the eurozone, in avoiding excessive trade imbalances by improving the competitiveness of the south and by stimulating

imports of the healthy north. The EU has to reverse the divergence of the past 10 years whereby Germany reduced the cost of its labor in real terms and reformed social systems, while southern eurozone countries fell back into inflationary economic policies. We need EU control and guidance to ensure the competitiveness of economic, labor, social policy in eurozone countries, if not in the entire EU (allowing enough differentiation as for competing states in the United States). Accepting an Economic and Finance Commissioner for the eurozone who can enforce financial discipline and true economic convergence/competitiveness may be the outcome. For catastrophic countries, controlling or even managing the stabilization of finances centrally from Brussels or *via* the Troika has almost become the proven short-term transition process.

- Eurobonds, not for national debt and only after fiscal and economic integration, reestablishing no-bail-out for member states: comparing the dollar and euro or the United States and eurozone, it is hardly ever mentioned that Michigan and California or any other state would never issue joint bonds. US Treasury bonds are issued by the central government to finance a possible central budget deficit, but not state debt. Eurobonds for the European Commission can only come after fiscal and economic integration. It is true that in the United States, as well as in a fiscally integrated EU, the central 'government' might issue Eurobonds to finance EU growth programs (like cross-EU infrastructure, e.g. a HVDC energy transmission network across Europe, cross-EU high-speed rail lines or large innovation projects similar to Galileo) or other centralized programs, which are supporting all member states, as long as member state accept that, and as long as a solid central balance sheet allows. Eurozone states may be ready for this next step in EU integration soon. They would need a central finance minister in Brussels who can guarantee the financial discipline of an EU government. Still, like the US finance minister, s/he will still not be able to ensure the financial discipline of every member state, i.e. Italy and Spain like California will have to clean-up their balance sheet on their own. Re-establishing the no-bail-out principle like in the United States and developing an 'orderly national bankruptcy' law in the eurozone is a consequence of this. The kind of Eurobonds (joint bonds for nation state debt) extensively discussed at the moment would be a consolation for all international investors (of course, any investor would only be happy with a joint bond of Italy, Spain and Belgium only if solid states are guaranteeing debt of over-indebted states). However, this would be a great mistake: it would take away today's market pressure on governments (in the form of higher interest rates) to get their house in order. At present Italy, just like California, is on its own as long as it is a financially autonomous state. Gaining and keeping the trust of financial markets (and differentiated interest rates as a measure of it) is a more reliable force of discipline than any political agreements can ever be. Yet, if northern European states want to send a credible 'No' to eurozone debt sharing *via* Eurobonds, they also have to clearly say what their euro-strategy is, namely more (even full?) fiscal integration of a eurozone federation along the US model. The crisis may be the best opportunity to move the EU forward! When will there be a better time to propose a strategy and negotiate fiscal integration if not now, when half of EU countries are close to calling for this move?
- Reregulating financial markets: an unrelenting EU political drive to reregulate international financial markets to bring them back closer to their original role of serving the real economy is also needed. This not only in defense of the common currency and in defense of eurozone country refinancing capability. The real economy, in particular industry, is also paying a high price for the volatility of raw material prices, the volatility of exchange rates and of investor behavior. Are investments which last only seconds, minutes, hours or days really to be called investments? Are hedges and CDSs without an underlying real business need ultimately very helpful to the real economy? The eurozone may have to set the tone to shift the financial industry back from self-serving and self-centeredness to a service role for the real economy. It should set the speed of the reform progress here to its own EU needs and, step by step, learn to set examples for other economic regions by unified eurozone rules, pushing for international acceptance later, but with all the power available to the core of the largest economic zone in the world.

Some elements of financial stabilization and economic integration of a 'redesigned euro'-zone have already been addressed, but many are still missing and need to be worked-on during the next two years. In view of difficult election years for the core eurozone countries, this may call for optimism, conviction and may really stretch politics as 'the art of the possible'.

Differentiate cost reduction and growth measures across the entire EU

If our euro politicians follow the turnaround lessons of industry and make them a success route for the eurozone, the enforcement of a tough restructuring program (as we are seeing it now for many indebted countries) would absolutely be the beginning. In industry successful restructuring mangers don't shy away from setting demanding overall goals; stopping losses (deficits) and 20–40 percent cost reduction may be needed for some derailed businesses, as well as for some national economies to become competitive again. Reducing debt to sustainable levels is similarly in both cases a long, but clearly organized process of asset liquidation, and asset management.

To support ailing countries in their restructuring phase, a coordinated EU approach may help. The eurozone might differentiate austerity: fast and radical for problem countries as is well demonstrated by Ireland, Greece, Portugal, Spain and partly Italy and Britain; similar, but delayed for healthier 'growth' countries. For over-indebted countries deleveraging will start immediately, but may go on over 10–15 years: an aggressive program to reduce national debt/interest load in problem countries is what we are seeing for Greece, Portugal, Italy, and Belgium. Rightly we see it in a softer way in France and Germany. In healthier countries, deleveraging the private sector and stimulating growth may help the rest of the eurozone and finally help to deleverage the national balance sheet.

- *Drastic asset management and cost reduction.* As in any industrial turnaround, and also for over-indebted nations, the primary focus is a radical asset management program: selling off nationalized assets to reduce government debt; extremely stringent collection of outstanding tax revenues; renegotiation of payables and finally even debt restructuring. For drowning nations there may even be more dramatic patriotic asset mobilization actions. All of them start with containing the flight of capital to safe-havens abroad. Of course, governments under market and EU pressure are now reducing budget deficits in the short-term by reducing expenditure and broadening tax income through the broad brush reduction of tax preferences and of all consumption-oriented expenses. As clearly demonstrated by Britain, Italy and Spain, this includes reducing all subsidies and preferences for industries, professions, social groups and churches; reducing public services to year 2000 level, streamlining government processes, adapting social systems, e.g. pensions at 67, enforcing tax discipline and fighting corruption, building motivation to accept work, reducing the scope of overdeveloped social welfare, but still saving the weakest. In the heavy restructuring cases of southern Europe not much unrealistic talk about growth as an alternative to restructuring should be heard. Yet if restructuring were to be accepted and take hold, all energy would go into designing growth programs there too, but of a kind that does not endanger the financial rehabilitation of over-indebted countries (see below).
- *Help building sound administrations in the southern eurozone:* lack of administrative skills and discipline has not only led to delays for entrepreneurs and investment projects, tax evasion and corruption in many southern parts of the eurozone. It has even led to EU regional funds being returned to Brussels due to a lack of organizational competence and disunity. Targeted support in the reconstruction of a sound administration with the help of northern EU administration experts may be needed to make restructuring work. Supporting ailing countries with government staff from best practice country administrations may become a new way of showing solidarity in the EU and eurozone.
- *In healthier public debt situations deleverage private sector first:* differentiating between household, private (including financial) sector and national debt reduction could become part of this coordinated, differentiated EU strategy (whereby the sum of the three debt loads often ends up at 300 percent of GDP while good cases are below 150 percent). Private sector debt reduction is needed for Spain, public sector debt reduction for Belgium. Spain (with less public debt than Germany) has hesitated to restructure its over-indebted banks to avoid more public debt. Restructuring and stabilizing those banks calls for capital either from private investors, Spanish government institutions or the ESM. When the private market is refusing to engage further, taking a one-time charge in the Spanish budget, thus increasing national debt, may be the preferred solution. The right EU strategy for

healthier countries may be allowing enough profit for an overleveraged private sector, industry/financial institutions and households, to be able to shed debt first and to create a healthy equity base for growth. Resulting tax revenues should help deleveraging the national balance sheet, thus slightly delaying the national debt reduction program (not the deficit reduction program). For all healthier and stable countries, the Schäuble idea of a national restructuring fund to pay-off all debt above 60 percent of GDP may be the best solution.

- *Support weaker eurozone countries' exports by growing healthy EU countries:* to get trade back into balance and help the heavier restructuring cases in southern Europe, the EU needs to disallow the sick to continue financing their imports by debt. Creating EU (not only eurozone) growth in countries around the heavy restructuring cases will help their own feeble growth initiatives. Creating the new dynamic central and northern Europe will help the ailing southern half (and Belgium). While sticking to the agreed-upon deficit reduction targets, this would require healthy and competitive countries like Germany, Scandinavian and Baltic countries, Austria, and the Netherlands to focus on stimulating internal demand and investment, and thus on growing imports from the South. Creating consumer growth in these countries may be combined with creating investment projects. Consumer growth in Germany will hopefully result from the recent high pay increases achieved by the largest unions after a long series of abstention years, while low interest rates (today below inflation rate) stimulate construction and consumption. Respecting fiscal discipline in Germany's national budget, on the other hand, may be the best way to control a possible future overheating of the German economy, which can hardly expect ECB help *via* the raising of interest rates.
- *Transfer best practice for economic restructuring programs:* programs elements as stated for Portugal, Spain, Italy and Britain or the successful restructuring of Sweden and Finland or of Poland, the Czech Republic and Slovakia after 1990 – may help other cases and may create a new role for coordinated central EU best practice transfer. While many program elements may be partly underway for ailing countries, the EU might check where these measures also apply to healthier countries to stimulate productivity and growth.
- *Generate the will to change:* while restructuring has to be fast to be successful, much of the eurozone turnaround will be an endurance test for Europe's politicians (just as it regularly is for industrial turnaround managers). The risk lies in giving up too early when results are not immediately visible or when strong opposition arises). To be successful, eurozone politicians will have to be technically tough and strict, and must forcefully attempt a centennial culture change in the troubled eurozone countries towards greater fiscal discipline, greater tax correctness and lower corruption thanks to tough legal reforms and administrative support from best practice administrations. Yes, there will be pain. Unfortunately, however, even troubled industrial companies only change established structures like luxury overhead staffing, comfortable pay practices and fringe benefits under extreme economic pressure, and often only shed hopeless, loss-making business units in a bankruptcy restructuring. Similarly, without enormous economic pressure, most of the very troubled eurozone countries would not cut their bloated administrations, established subsidies, protected sectors and professions, unusual preferences in state-owned companies, long defended employment rules and early pension rights won by the unions in better days, or abandon centuries of tax evasion tradition. Often only the specter of state bankruptcy will generate the will and power to change all that. An easy way out, either *via* Eurobonds or debt-generated growth, would be a good way to avoid all those awkward reform measures.
- *Finally, assess the economics of a bankruptcy and a sabbatical from the euro for extreme cases:* in industry bankruptcies are accepted as a reality of life. Over-indebtedness is clearly defined and there is a legal obligation of management to report this status. Lenders generally (as long as their own survival is assured) prefer renegotiating debt to financing the agony of a company that would make unacceptable losses even without any debt over many years. They avoid throwing a lot more good money after lost money. Management or administrators, on the other hand, find greater acceptance with employees and unions for surgical cutbacks and drastic approaches to save the company, to regain profitability and competitiveness fast. Speed is essential to make the process economically efficient and to save as many jobs as possible. In delayed bankruptcy cases in industry, just like in Greece, more money may be lost by throwing good loans after bad loans and financing interest payments by international rescue funds, thus increasing unrecoverable debt further. An orderly bankruptcy of a small economy within the euro-

zone should be possible and containable with the help of an EU bankruptcy law for nations. Not only will its debt load be reduced to a sustainable level, but the Troika can stop paying itself the interest which Greece cannot pay. More importantly, a bankruptcy will give Greek politicians the pressure and freedom to make all the requisite drastic adjustments fast. To achieve the 30–40 percent cost-reduction needed within the euro may be too agonizing for desperate countries like Greece and too expensive for the eurozone; in the worst case a downward spiral will only increase the divergence of these economies from the rest of the eurozone. Devaluation goes one step further than bankruptcy within the euro. It makes an entire country poorer, yet the approach is faster and less abrasive (for all wage recipients) than 40 percent cost reduction within the euro to reestablish competitiveness. While the relationship of local salaries and prices of local products stays constant, devaluation restricts imports and calls for more indigenous production as it did so often before the euro; internationally the lowered cost base attracts investors and induces earlier suppliers to these problem countries to set up local manufacturing. Both developments lead to renewed growth in consumption, exports and jobs. Therefore after some healthy and absolutely necessary restructuring is achieved under eurozone and IMF pressure (in regulation for competition, asset liquidation, government spending, social systems and tax collection behavior), it may be cheaper to allow for devaluation in hopeless cases (almost necessarily also leading to bankruptcy-like consequences) and a restart of growth from an immediately lower competitive cost base – a sabbatical from the euro as Kenneth Rogoff called it. Once so far out of balance, it may be best to allow Greece, and potentially Portugal, to go through an orderly bankruptcy, and possibly even to leave eurozone. The cost to the rest of Europe (of an orderly bankruptcy and of saving some EU banks again) may be less than the cost of unproductive financing of Greek debt service and partly of living standards for over a decade, with a very slow recovery and with little hope of generating more competitive local industries. To assess the impact of such a decision, many experts have estimated the total debt at stake, but a reliable estimate of the total cost to the eurozone countries has of supporting a country like Greece for a decade against all economic market forces has never been published. In addition, it is surprising to observe how little our economic and financial scientists understand about the impact of a euro exit of a small country on the rest of the world economy: contagion effects and bank runs are discussed with little scientific understanding. To separate threatening estimates by affected financial institutions from independent expert estimations is difficult for eurozone decision-makers. To be on the safe side, politicians will want to avoid the contagion of larger weak countries like Spain and Italy. They will contain unjustified fears of a Greece-like fate by massive, but temporary guaranties and ESM/IMF support. Just as important may be other confidence building approaches like a faster move towards the fiscal integration of the countries remaining in the eurozone.

Regulate all EU markets for competition, entrepreneurship and innovation

Growth is not only a eurozone or indebted country issue, it is an overall EU issue. Yet for growth, we need to fix some of the decade-old overall EU problems affecting even central and northern European export countries, namely lack of investment, slow growth and lack of job generation.

Even if mature OECD countries can't hope to achieve the growth of emerging countries like BRIC, there is no reason not to try to push the EU at least to achieve above-3-percent long-term growth, the same level of growth as the United States. Specifically in this eurozone crisis, growth stimulated in healthier countries Germany, the Netherlands, Austria, Scandinavia and Eastern Europe will help the southern eurozone countries. There we finally pull the EU together again in its basic single market mission! Alas today in addition, in most countries this will need to be 'smart growth' i.e. growth without additional debt. Growth which is not financed by (now unavailable) taxpayers' money is a totally new challenge for politicians!

National economists, like managers in industries, know that there is no better force to drive investment and growth than competition. Competition drives productivity, innovation and investment. The entire common market EU idea was built on this belief. The Commission embarked on making this largest economic zone more competitive, starting with opening markets, taking away protection and barriers to entry, creating competition in nationalized or dormant sectors and successfully creating growth and jobs. The goal is to create full employment and wellbeing for Europeans. Yet, it is obvious that this job is far from complete. Lack of competition in many protected sectors with regulative restriction of access/supply and resulting high cost/low productivity and lack of international competitiveness are still to be addressed. Also, to generate more growth from entrepreneurial investment and innovation, the EU might provide a better playing field for entrepreneurs and innovators in EU countries with all re-regulative power.

- *Continue regulation for competition to drive investment:* the EU can't do enough in restructuring all sectors for competition to create productivity, price reduction, growth, investment and jobs. Why not use this crisis to complete the common market liberalizing all still protected markets for competition and encourage cross border expansion of EU companies and entrepreneurs? This includes privatizing government holdings, outsourcing government services to private sector. The EU would finally achieve a fully open common market for energy, for rail services, telecommunication services – all combined with pan-European networks that could reduce cost significantly (e.g. reduce energy losses by 30 percent and in expensive regions reduce electricity cost by 40 percent!). The EU should realize its mission to ensure quality and consumer protection at low cost, not by nationalizing or limiting access/supply, but by transparency and supervising fair competition. Yet, consumer protection is only one task of the art of regulating market: triggering private investment and innovation is the other. Telecom regulators have learned a lot from successful and less successful deregulation initiatives about generating investment and innovation by 'smart regulation'. These lessons may help to find the right competition regulation also for utilities, posts and railways as well as to professional (lawyers, notaries, architects) and medical services/pharmacies and handicraft guilds. It might mobilize more investment and growth in transport of all kinds (less protective regulations for passenger transport; more internationalization, consolidation, organizational efficiency for freight), in retail services (land use restrictions, opening times, IT investment viable in larger entities).
- *Liberalized, best practice labor market rules:* competitive economic policies can't exclude labor market regulation and social systems. They determine to a large extent the cost-competitiveness of a country. As so often best practice needs to be analyzed. Could we imagine enlarging the EU mission to identify best practice in liberal labor market rules and social systems to be most effective for employment and re-employment? Could the EU identify best practices even to make health systems more productive? Starting with competition and open movement between systems might be a way to quickly highlight strengths and weaknesses. New rules should not protect inefficiency. The growth of many EU countries would profit from a Commission focusing on generating open, liberal, highly mobile labor markets; fostering job switches, reducing job protection (like Denmark) to increase mobility and speed restructuring; or enhancing participation in labor market, increase young people's employment (dual education/work first), increase senior and women's participation in labor market; eliminating preferences in state employment; allowing more temporary labor contracts, increasing working hours; allowing local wage bargaining, replacing minimum wages by earned tax credits; allowing immigration for skilled labor and engineering/entrepreneurial talent. Will the EU ever be able to beneficially help the introduction of best practices in the common market here?
- *More entrepreneurs for the EU:* mobilizing venture capital, changing tax law, but also starting founders programs and eliminating mundane obstacles in the EU countries, e.g. create one-stop local government service agencies for entrepreneurs. Should we not give all possible tax and other advantages to anyone who can create jobs and thus attract talents and entrepreneurs to the EU?
- *Fostering innovation-driven growth:* not research is our problem, but transfer of R&D results into application. Infrastructure and clean-tech might turn out to be two ideal lead-markets for many new technologies looking for application. Fostering regional clusters with enhanced industry/science cooperation (step-up EU cluster competition efforts and introduce rankings leading to transfer of best practice in attracting investment and in job generation) is recognized as one of the best ways to help R&D results turn into commercialization.
- *Fostering education and education effectiveness:* many of these growth initiatives need better qualified EU talent – development of engineers and other talent. Shifting tax payers' money from consumptive benefits to this most basic investment into the EU and particularly Southern countries' future is essential, as is opening the EU to skilled immigration at the same time.

Create longer term growth driven by investment in the EU

A single market mission to reduce unemployment and raise living standards across the EU can't do without sustainable economic growth. What we are missing is a 10 years' EU growth and investment program that can double the growth potential of the EU. Confining the EU to a mature, slow growth nations' role would give up the idea of harmonizing living standards, reducing structural unemployment, would lose talents, entrepreneurs and innovators and finally would reduce the EU to a second class world citizen in this globalized century.

Indeed, most mature EU countries, Germany in particular, have reduced their investment rates as a percentage of GDP over many decades to end up at the low end of OECD rankings. 18 percent vs. 43 percent of GDP of gross capital formation for emerging economies like China shows the EU dilemma: gross fixed capital formation of EU25 countries was continuously shrinking from 25 percent of GDP to 18 percent, Germany to 17 percent in the 40 years till 2009, while China grew investment from 24 to 43 percent of GDP. German government budgets for many years have lowered investment to the legally allowed limit (equal to new debt incurred). Unfortunately not only in southern eurozone countries, weak governments focused their deficit-spending not on investment, but on today's consumption to fulfill election promises at the expense of our children. Funding investment projects useful for the next generation had lower priority. (Yes, the build-up of eastern and southern European infrastructures *via* EU regional funds has certainly generated some healthy growth there and also in supplier countries; the money exports in form of loans to increasingly uncompetitive southern eurozone countries to finance their imports was probably less healthy).

This lack of EU investment is not due to lack of funds, there is an unbelievable amount of cash – trillions of euros – searching for investment opportunities around the globe every year. It is due to lack of attractive investment opportunities and conditions in the EU which drives profitable EU industries and financial investors to focus all their free cash on investment opportunities outside Europe, mostly in the emerging countries, China or other BRIC countries. (Since most of the mature OECD countries produce a lot of business profit (today at a historical maximum as a percent of GDP) without reinvesting opportunities, the financial crisis showed how this creates new problems by excessive cash looking for returns and driving financial industry and CEOs with oversized incentives to produce more returns etc.)

For some time life has become too easy for investment decision-makers: nothing happens in Europe, consequently invest full power in the growth areas of the world outside Europe. This is surprising in view of the many opportunities which could be mobilized in the EU: building and modernizing infrastructures, modernizing cities, industry and transport for energy efficiency, economical alternative energy projects and lots of new technology application opportunities.

The only reason why austerity protagonists are hesitating to think of creating investment-driven growth opportunities is the fact that Keynesian government-funded investment programs run against deleveraging priorities of most of the EU countries, in particular our southern debt nations.

The way out of this apparent deadlock maybe multiple ways of 'smart growth' which involves a change in the role of politicians: we have to turn cash poor governments from financiers into stimulating regulators of markets (to foster competition and private investment), from investors to orchestrators of projects and from tax spenders to attractors of private financing. In addition to competition and entrepreneurship stimulus, this means above all mobilizing private funds for EU projects – privatization and PPPs large and small. It also means examining existing EU funds allocation for more effective job generating. Obviously politicians won't be driven into this role of orchestrators and fundraisers by voters clamoring for it. This will require conviction, vision, leadership and reaching-out for experience.

The most striking opportunities for the EU to generate jobs and a better future are infrastructure projects. Most of such projects can be combined with the application of new technologies. They also the best opportunity to mobilize private investors (as started in telecoms, energy and in roads); similarly energy efficiency/alternative energy investments in cities, in the industrial and transport sectors, also services. If politicians can orchestrate attractive projects in these sectors, in view of new EU investment opportunities, even European equipment industry will think twice before sending two thirds of their investment budget to non-EU markets.

- *Start with reorienting conventional EU investment funds:* an EU investment program should start with looking at existing structural and regional EU funds. EU investment funds should support the goal of increasing competitiveness of less advanced countries. They should be combined with incentives to countries for successful restructuring (as Robert Zoellick also argued) and building improved administrations, like in industrial turnarounds where you invest in the business units which have successfully restructured. This would include the EIB to match investments to countries' structural reforms, reorienting unused Regional Fund to develop modern infrastructure in ailing, but successfully restructuring countries, shifting EU funds from agriculture to infrastructure and R&D, increasing funds for innovation projects. Starting a special EU infrastructure fund (EIB or EU bonds for EU infrastructure projects?) and offering significant incentives for foreign investors in ailing European regions would be a step beyond that. Building sound administrative structures in southern European countries may be a precondition though: past experience shows, money was not the issue for the poorest regions, administrative structures were missing to define and execute projects (e.g. in Sicily, Greece), regional funds awarded were returned to Brussels.

- *Politicians as project orchestrators and fundraisers:* to create sustainable growth through-out the EU through investment, in view of shrinking national budgets and overburdened taxpayers the European states will have to turn in a wholly new way to the private financial sector; they will have to become orchestrator of projects and attract global investors. There are enough investors like European and international pension funds looking for projects with 20 years' steady cash flow and returns of 4–6 percent. Infrastructure investors like Macquarie Bank or even large private equity funds like Blackstone are looking for such opportunities. The EU, EBRD, EIB, KfW and other financiers could issue bonds for long-term projects and industrial construction and equipment suppliers are ready to enter PPPs. Reducing capital exports of industry by generating attractive investment alternatives at home in the EU for industry should be one of the objectives of this EU investment orchestration program. Looking all types of financial and industry FDI (foreign direct investment) which can generate employment should be welcome in the EU, be it private institutions or sovereign wealth funds.
- *Technical Infrastructure investments:* building the infrastructure of the future will require to formulate more national and international EU investment projects, e.g. for high-speed rail from Stockholm to Napoli or Amsterdam to Bucharest or Lisbon to St. Petersburg to provide investment opportunities in the EU. Of course, the EU projects should include HVDC networks to shuffle energy from low-cost to high-cost countries, all energy efficiency investments, clean technology investments and economically viable alternative energy projects. This will need a new framework for accelerated planning and execution of EU new technology infrastructure investment programs, e.g. can we imagine taking away each of those trans-EU high-speed lines from today's railway companies, allowing consortia of these companies plus private investors (railway co's, industry and banks with pension funds etc.) to bid for construction and operation of the tracks? Governments' role will be to support them with accelerated legal processes for rights of way and construction concessions. Then EU transport ministers could potentially auction the high-speed train services to another set of consortia as a second step? In smaller projects proven PPP (public private partnership) approaches may be adequate. There has been talk about EU infrastructure bonds to finance cross-EU infrastructure projects: international investment and pension fund managers would most likely find such bonds much more attractive than financing consumptive expenses of national governments. To contain over-optimism: as in all private investments, return on capital will become the final decision variable in such infrastructure projects and will lead to a healthy priority listing of these projects.
- *Green growth investments:* energy savings and economically viable alternative energy technologies provide an ample field for profitable investment of the private sector. A joint EU and Orgalime study called Electra identified 30 billion euros of additional investment opportunities in the 'green' or 'clean-tech' sector in 2020. The updated Electra II report sees even higher potential, particularly in energy efficiency and 'smart cities' solutions. Similarly a Potsdam PKI study identified 6 million additional jobs in this field as a consequence of Green Growth initiatives. Of course focus should be on economically justifiable investments, not large scale subsidizing of still futuristic technologies (for which today mainly research and prototype development support may be needed). Setting energy saving targets and efficiency standards by the EU may be justified as much by reducing EU dependence on politically instable suppliers and hesitation to fund undemocratic regimes, as by climate change mitigation arguments. Helping to set EU technical standards (e.g. in electro-mobility) and EU frontrunner approaches will be the key to fast penetration of new technologies. Again, plan-

ning and concession processes will need to be accelerated. Expansion of financing schemes by EIB, national development banks or commercial banks with payback from energy savings is needed.
- *Investment in service industries is a neglected growth and productivity opportunity for Europe* (as shown well by the McKinsey global Institute MGI in comparing productive and less productive EU countries and the United States). Developing more growth and productivity in service industries might be attractive to private investors. More than ever this starts with reregulating many services for more competition and eliminating administrative restrictions (e.g. zoning and opening time laws) and outsourcing government services to free market, e.g. privatizing all types of network services, but also many government and communal services.
- *Fostering large scale application of existing recent technologies:* infrastructure and services can be lead-markets for new technology application in all EU countries, e.g. in broadband communications, energy efficiency, infrastructure, pharmaceuticals, biotech and medical services; applying more technology in government and communal services, in distribution and retail services and in medical service to increase productivity and quality to customers (e.g. digitizing all government services/public projects/bids) may also open up investment opportunities if such infrastructure is farmed out as a technology service. Retail and freight transportation (if regulation allows efficient, large entities) will attract large IT investment, thus gaining in productivity and quality of service.
- *Attracting more FDI towards the EU:* why not start a massive EU internal FDI initiative to complete participation in the common market and to mobilize growth? Incite EU companies to expand their M&A activities across the EU to cover the common market. Also, the largest market of the globe should be attractive to investors from the United States and the BRIC countries. Are we shy of funds because they come from Chinese and Indian investors? Shouldn't we allow even some state industries sale to strategic international investors who can create livelier competition in the EU?
- *Developing a growth belt around the EU:* while most of the above measures are focusing on the EU internally, Europeans have long realized the positive forces resulting from an actively developed growth belt around the EU. Europe is better positioned than the United States and China to help Eastern Europe, Turkey, Middle East and North Africa and even the rest of Africa to develop into growth zones not only based on oil resources. We have to take existing initiatives more seriously and become more creative how to help developing this growth zone 'EU plus'. For a start this means continuing more aggressively mobilizing the Mediterranean economic zone to create growth for southern Europe, taking advantage of Turkish growth dynamics, rebalancing agricultural industries for growth in northern Africa and southern EU countries.

Almost all of these regulation and private investment initiatives generate growth without massive increase of 'anonymous' national government debt, i.e. they fall into the category of 'smart growth'. This 'smart growth' has analogies in industry turn-arounds where cash for investments is lacking: joint ventures with customers, suppliers and competitors in manufacturing and sales, joint development programs, licensing technologies to competing suppliers, sale and lease-back are only a few of the ways cash poor companies emerging from restructuring employ to grow by using other investors' capabilities and finances. They are giving way something to get help for growth.

Yet modernizing 'old Europe' may require much more work and overcoming of obstacles from EU politicians in reregulation and reformation than building new infrastructures in China requires from their Chinese counterparts. Yes, will need overcoming deeply entrenched structures and practices and in many cases it will mean selling public goods to private investors and even guaranteeing a reasonable return in some of those projects or it means issuing specially secured infrastructure bonds. But I am sure our children who will use these infrastructures will prefer paying those service fees (while enjoying the comfort of the future) to paying-off debt and interest generated for consumption of our present generation. In addition they will profit from the stimulus these infrastructures provide for growth in the businesses of this next generation.

Create a new EU (and eurozone) spirit

Initiating such a large scale EU reform and investment program may in itself be the way to end euro-pessimism of many EU citizens and of financial markets. It would deserve to run under a motto that will be remembered as a historical success of the European Union. On the other hand, the present crisis is the best time for more EU integration. Never before has a large group of EU countries been asking for it – of course with the realistic hope to get more effective help by more integration. It is the healthy eurozone states lead by Germany who have to urgently develop this strategy for further integration and who can promise help. Simply playing paymasters to fix mistakes without laying a good foundation for sustainable European wealth development may neither be wise nor enough for the further development of the European idea.

Yet, convincing citizens in the eurozone of a large sovereignty transfer to the center in the context of fiscal and economic integration of the eurozone may not be easy. It will need a much stronger display of the advantages of a common currency and of stronger fiscal/economic integration – making deeper European integration not the choice between two evils (tough restructuring or failure; trouble or isolation), but make it an attractive way forward, a common way out of the problems, a way to investment and growth.

- *Recreate an attractive EU vision:* to make the EU (and its core the eurozone) really attractive again very much asks for a renewal of the EU spirit. A widely marketed attractive EU vision will be needed – a vision that is closer to our modern EU citizens' concerns than the ever remaining original mission of a Europe without wars. Recreating a more modern vision should focus on economic growth dynamics: competition, productivity, investment, application of new technologies, education, attracting talents and entrepreneurs! The economic revitalization based on restructuring of the eurozone and aggressive growth measures of the entire EU will certainly contribute to a more positive view of the whole idea of a common market and more European integration. EU and national politicians will have to show how painful restructuring complemented by growth programs will help the largest economic zone of the world finally be one of the most financially sound and wealthy regions of the world and stay among the most dynamic economic zones of the world. Make the whole of the EU a more attractive, cohesive economic zone with a clearly visible roadmap showing how to evolve in the future. Demonstrate *via* best practice successes how the EU is becoming an attractive investment and growth area by reregulation which allows for more competition and mobility/flexibility and conditions which attract more private capital. Eurozone investment projects financed by euro-infrastructure bonds might still fit into this positive image, in particular if international fund managers jump at them. More so would be the confidence demonstration of private investor consortia investing in EU infrastructure projects. A complementary approach might be a vision of a more 'democratic Europe', with substantially more citizen involvement, more direct elections and referendums, starting with a directly elected EU president. It would certainly force national governments to lobby more for some EU causes and not only blame all unsolved problems on EU administrators. Others might go back and take some idealistic concepts from the 'Europe of the regions' of Charlemagne.
- *Emphasize cohesion nationally and in the EU:* if leaders in austerity countries want to gain the needed popular support, they will have to address soft aspects, showing empathy for peoples' sacrifices, not sacrifice people (Helle Thorning-Schmidt). They will have to demonstrate the resulting better future and they will have to show credible leadership: we have heard of pay-cuts and layoffs for government employees, but have we heard of even larger pay-cuts for government members, members of parliament and officials to set a good example? From healthier countries, have we heard of highly visible non-financial help for southern Europe? The EU should support and reward early restructuring successes by EU investment projects, while national governments have to emphasize social cohesion to make reforms acceptable to people, push social mobility by fostering education and skill building, above all by providing jobs for the young generation. To reduce the present EU south-north conflict and bad austerity feelings, enhanced exchange efforts might be helpful, like city partnerships between more and less developed eurozone regions, apprenticeship programs and finally youth and student exchanges as have been so successfully developed by France and Germany in the 60s and70s.
- *Prove that the a repaired eurozone can provide value as forerunner of attractive EU integration:* integration is not only a political mission; Schengen and euro agreements help the economy of participating countries to flourish, help to ease life for the average eurozone citizen, to attract talent and investment, to negotiate stronger with other triade partners on the basis of a strong reserve currency. Match these economic goals with the political goals of reducing conflict, keeping peace in the core of Europe and of gaining global influence for the EU. The final success should be proven advantages – proven and accepted to the point where they attract not only the determined convergence

candidates, but also Britain, Norway and Denmark to join the euro. First we should be able to demonstrate that the joint euro liabilities and resulting financial transfers are really able to generate a group of disciplined and competitive countries again in the eurozone, even if standards of living still diverge. Then this zone could expand beyond fiscal and economic policy integration. This not only to follow a political vision of more integration, but eurozone leaders should be able to show the economical or political advantages of more integration: tax policies making it easy to move between countries; competitive, social and labor policies stimulating employment and facilitating higher mobility across the eurozone; pushing solutions to open national health systems, pension systems, other social systems and education systems for citizens relocating in the EU. Allowing more mobility and migration by opening national systems will create pressure for change.

Evolving EU governance: from what to how

While many economically minded EU executives and parliamentarians may agree with a large part of the described EU restructuring and growth program, there may be a difference of opinions in how to execute these action programs and which roles to assign to Commission, Council of Ministers, EU parliamentarians, national parliaments and specific eurozone institutions. Too soon EU-centralist might jump to work and turn an exciting program opportunity into something that resembles central planning which failed so visibly in the Comecon. Let's be clear about this, the EU was started based on a common market idea with a regulator ensuring open markets with lively competition to achieve highest productivity and competitiveness of Europe in all sectors: trying to avoid over-centralization, the EU should stick to its role of orchestrating competition wherever possible and to its subsidiary principle, not centralizing tasks that will just as effectively or even better be handled in decentralized ways.

- All regulatory actions in good hands with the EU: regulation to achieve competition, free access, mobility and growth has been in very good hands of EU commissioners and European Parliament. Similarly regulation and restructuring of banks should be led by a strong EU authority overriding national hesitation, following the US example.
- For EU infrastructure programs and related privatizations to accelerate cross-EU integrated high-speed rail and other networks, the EU proven procedures: the European Commission might take initiative to propose; Council of Ministers will agree to the program, national parliaments agree to privatizations etc., yet we do need to accelerate planning and implementation processes at the national level. EU directives might support that.
- Attracting finances into cross-EU infrastructure programs and also many decentralized programs (like fostering energy efficiency investments) might pull on the regional fund, EIB, or new financial institutions (SPVs?) complemented by similar national institutions to do the job of attracting private funds into European projects in a much larger scale than hitherto known.
- Many other parts of the action program might be designed by the EU, decided, altered and executed nationally, with the Commission remaining in the role of tracker, ranking progress and success and organizing best practice transfer, thus furthering competition of national institutions in speed of implementation.
- Yet, also actions for the eurozone might in the future not only involve Councils of Ministers and heads of state and ratification by their national parliaments. With the emerging two-tear EU the question arises will the European Parliament need a euro gremium to execute democratic control on specific eurozone issues? Will today's EU commissioners (similar to van Rompoy's double role) differentiate their action and ruling to fit special needs of euro and non-euro countries or will the EU need Eurozone-oriented commissioners ?

Many observers have remarked that all of this means we will have to evolve the EU's unique supranational democratic structure which harmonizes many policies and centralizes many functions under control of EU parliamentarians – now even more with deleveraging and growth oriented reregulation and large international investment programs – while leaving all local essentials to the national governments and parliaments.

Total Factor Productivity in German Regions

Michael Berlemann and
Jan-Erik Wesselhöft*

Introduction

When the two parts of Germany reunified 20 years ago, there was a widespread belief in a quick process of convergence (see Berlemann and Thum 2005). While some degree of convergence between East and West Germany was observed in the early years at least, the expectation of a quick and complete convergence in general turned out to be unrealistic.

Comparatively high levels of convergence can be seen with respect to the existing public infrastructure and the provision of housing (Krause *et al.* 2010). Salaries and wages have also shown a comparatively high degree of convergence (Brück and Peters 2009; Sinn and Sinn 2010; Fiedler and Fuchs-Schündelen 2011). German politics strongly supported this development by rapidly raising the wages of East German public service employees to a West German level. These politics were motivated by the expectation that living conditions in the two parts of Germany would converge more quickly. However, the quickly rising wages were detrimental to East Germany's competitiveness and contributed significantly to high unemployment rates in East Germany (Sinn 2005; Brück and Peters 2010). As a result, East Germany still suffers from comparatively high levels of unemployment. According to the numbers published by the German Federal Statistical Office, the unemployment rate in East Germany amounted to 10.72 percent in 2011, while it was 6.36 percent in West Germany.

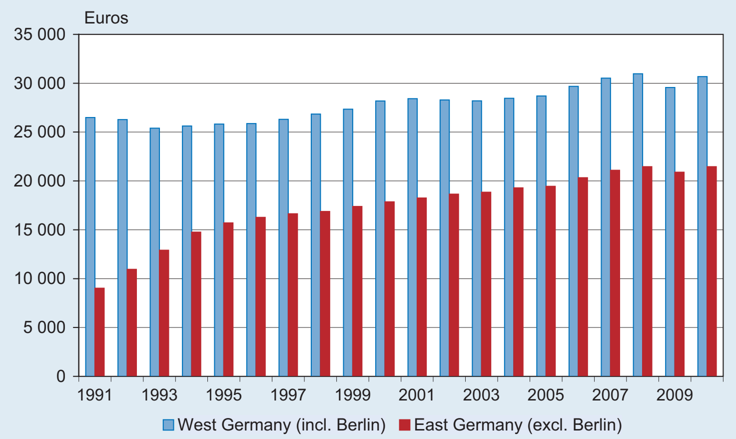
In the years immediately after German reunification, East Germany's per-capita GDP rose strongly, which quickly closed the gap between the two parts of Germany (see Figures 1 and 2). In the second half of the 1990s, however, this process decelerated. While East Germany's per-capita GDP reached 62.8 percent of the West German level in 1996, this percentage rose only slowly to 69.9 percent in 2010.

The differences between East and West Germany are considerably smaller when considering GDP per employee instead of per-capita GDP. In 2008, GDP per employee in East Germany reached at least 82 percent of the West German level (East Germany: 50,026 euros compared to West Germany: 61,027 euros). Nevertheless, even from this perspective a remarkable gap between the two parts of Germany exists. Moreover, as Figure 3 reveals, there are also remarkable differences on the regional level (NUTS III).

The question of which factors contribute to the differences in output per employee in East and West Germany, which remain significant, is an intriguing one. In general, it is assumed that the production technologies do not differ within one and the same country. If this effectively holds

Figure 1

Development of Real GDP per Capita in East and West Germany, 1991–2010

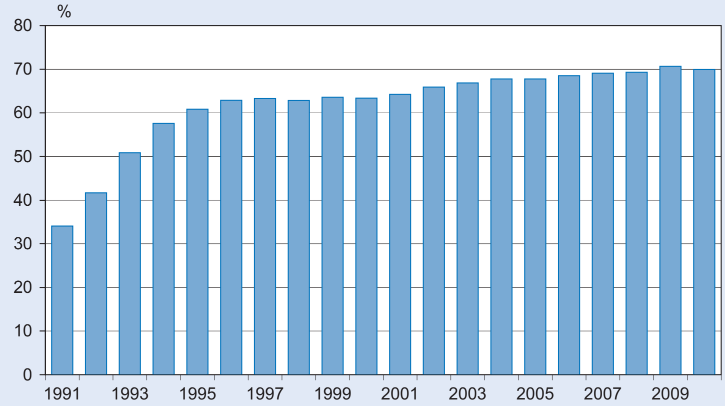


Source: German Federal Statistical Office.

* Helmut Schmidt University Hamburg. The authors would like to thank CREDITREFORM, especially Michael Bretz and Hardy Gude, for the provision of firm data.

Figure 2

Real GDP per Capita in East Germany as a Share of West Germany, 1991–2010



Source: German Federal Statistical Office.

true, the observed differences must result from differences in the local supply of input factors. Differences in regional developments can then be exclusively attributed to differing levels of input factors.

However, the assumption that the technological level is the same in all regions is highly questionable.[1] Obviously, the technological levels in the two parts of Germany differed substantially at the time of German reunification. While it is plausible to expect that the technological gap decreased over the course of time, it is less clear that this gap has completely disappeared. It is also questionable to assume that the development has been similar in all (East) German regions. Even under the assumption that all German regions had access to the same technology in principle, it is less clear that all regions had the factual capabilities of adopting them in an efficient manner.

In this paper we study – based on a newly constructed dataset of regional capital stocks – whether German regions differ in their technological levels. Based on these results, we analyze the share of the differences in German per-employee GDP can be attributed to differences in technology, and the share resulting from differences in the local supply of input factors.

Total factor productivity and the Solow residual

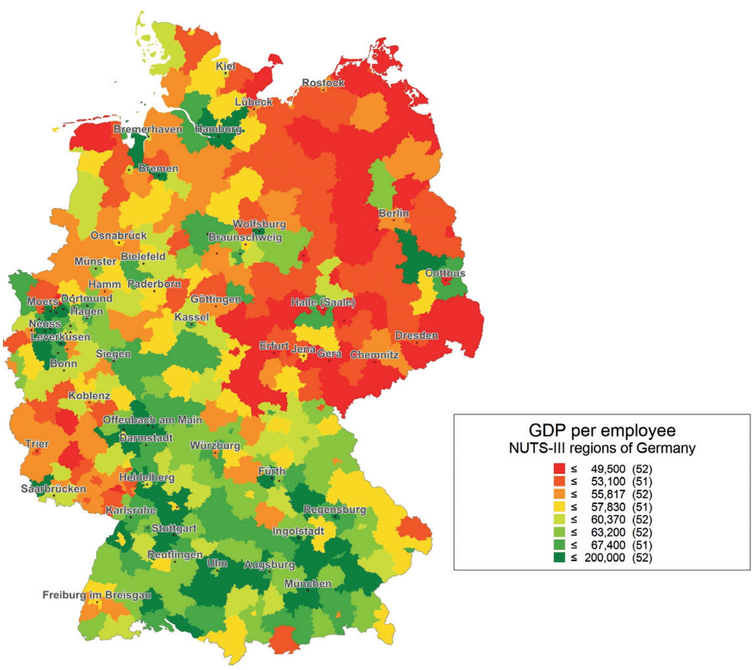
Total factor productivity (TFP) is the portion of output which can not directly be attributed to the amount of inputs used in the production process. The level of TFP thus determines how efficiently and intensely the available inputs are used in production. Let χ be the level of TFP and $f(L,H,K)$ the production function, depending on the input levels of 'pure' labour L, human capital H and physical capital K. Assuming a Cobb-Douglas production function with a Hicks-neutral technology, we have

$$(1)\quad Y = \chi \cdot L^{\alpha_L} \cdot H^{\alpha_H} \cdot K^{\alpha_K}$$

with α_L, α_H and α_K being the elasticities of the production factors. We allow for non-constant returns to scale by allowing $\alpha_L + \alpha_H + \alpha_K$ to take any possible value. Taking logarithms allows rewriting the production function as

Figure 3

Real GDP per Employee of German NUTS-III Regions, 2010



Source: German Federal Statistical Office.

[1] Christopoulos and Tsionas (2004) come to a similar conclusion when studying the technological levels of Greek prefectures.

(2) $\ln Y = \ln \chi + \alpha_L \cdot \ln L + \alpha_H \cdot \ln H + \alpha_K \cdot \ln K$

Rearranging this equation allows us calculating TFP as

(3) $\ln \chi = Y - \alpha_L \cdot \ln L - \alpha_H \cdot \ln H - \alpha_K \cdot \ln K$

In order to be able to calculate the level of TFP it is necessary to know the level of the output, as well as the levels of all input factors. Moreover, we need to know the concrete values of α_L, α_H and α_K.

Solow (1956) proposed differencing the logarithmic production function with respect to time, yielding

(4) $\Delta Y = \Delta \chi + \alpha_L \cdot \Delta L + \alpha_H \cdot \Delta H + \alpha_K \cdot \Delta K$

Using time-series data α_L, α_H and α_K can be estimated using ordinary least square regression analysis. This information can then be used to calculate which part of the observed change in the output cannot be attributed to the change in the production factors *L, H* and *K*. The remaining residual, the so-called 'Solow residual', is then a suitable measure of the underlying technical progress.[2]

Instead of deriving the rate of technical progress from the time-dimension, we make use of the cross-section dimension in the following.[3] We therefore employ regional data from German municipalities. Assuming α_L, α_H and α_K to be constant across all regions, we estimate these parameters from the equation

(5) $\ln Y_i = \alpha_0 + \alpha_L \cdot \ln L_i + \alpha_H \cdot \ln H_i + \alpha_K \cdot \ln K_i + \varepsilon_i$.

where *i* is a region index. Using the estimation results we can then calculate a region *i*'s level of technology as

(6) $\chi_i = \alpha_0 + \varepsilon_i$.

Data

For our estimation approach we need regional data on production (as output variable), labour, human capital and physical capital. Data on production, labour and human capital are easily available for various years on the German municipality (NUTS-III) level. Capital stock data for Germany are available only on the NUTS-I level. Since the necessary data to construct regional capital stock data is available only for the year 2008, we conduct a pure cross-section analysis in the following.

As an output variable we employ nominal GDP. The necessary data is provided by the German Federal Statistical Office.[4]

Following Eckey, Kosfeld and Türck (2004) we distinguish between two different sorts of labour input: low and high-qualified labour. The total number of employees is provided by the *Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR) via* the INKAR-database. This database also includes data on the share of high-qualified employees in each region.[5] Multiplying the total number of employees with the share of highly qualified employees delivers our human capital variable *H*. In order to derive the amount of 'pure' labour *L* we subtract the number of high qualified from the total number of employees. Figures 4 and 5 show the regional distribution of labour and human capital inputs for 2008.

As pointed out earlier, capital stock data for Germany from official sources is only available on the NUTS-I level. This data is again provided by the German Federal Statistical Office. The task to be solved is thus to develop a suitable method of allocating the capital stock to the NUTS-III level. In order to achieve this, we use information on the regional economic structure deduced from a private firm database, as well as data on gross fixed assets provided by the German Federal Statistical Office. The applied procedure is described below in greater detail.

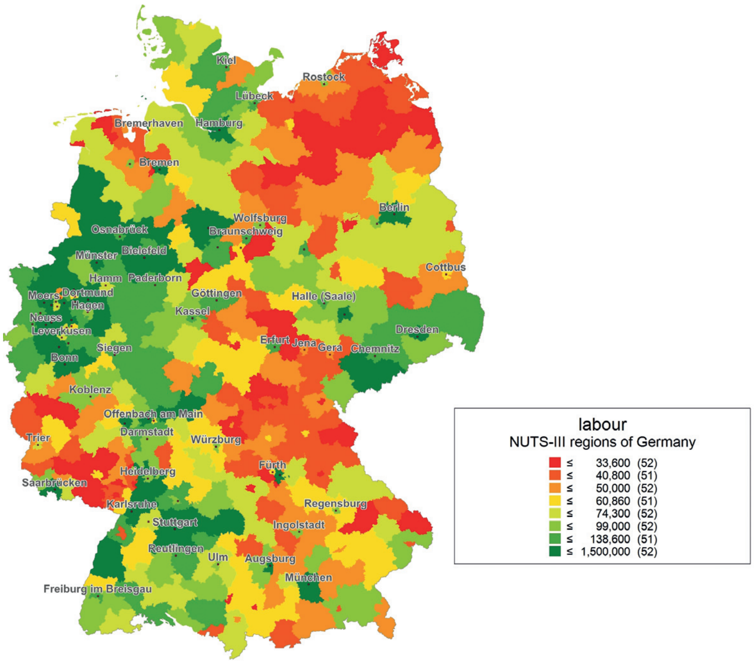
On the NUTS-III level, detailed information on the structure of the local business is unavailable from official sources. We therefore use data provided by CREDITREFORM from their firm database. This database contains data on over 4 million businesses located in Germany and is highly representative for the population of German firms.[6] For every firm included in the database information on the industry classification code (WZ 2003, two digits) and the exact location (NUTS-III region codes) is available.

[2] See also Felipe (1997) for a description of the approach.
[3] We use cross-section data because of data restrictions, which are explained in the next section.

[4] More precisely, the regional data from the German Federal Statistical Office, we use in this paper, was collected and is published by the *Arbeitskreis Volkswirtschaftliche Gesamtrechnung der Länder (AVGRdL)*.
[5] The group of highly qualified employees consists of employees subject to social insurance contributions/civil servants who have passed an exam at a higher vocational school, a university of applied sciences or a university.
[6] Only very small firms are slightly misrepresented. However, since these firms typically accumulate little capital this is unproblematic.

Figure 4

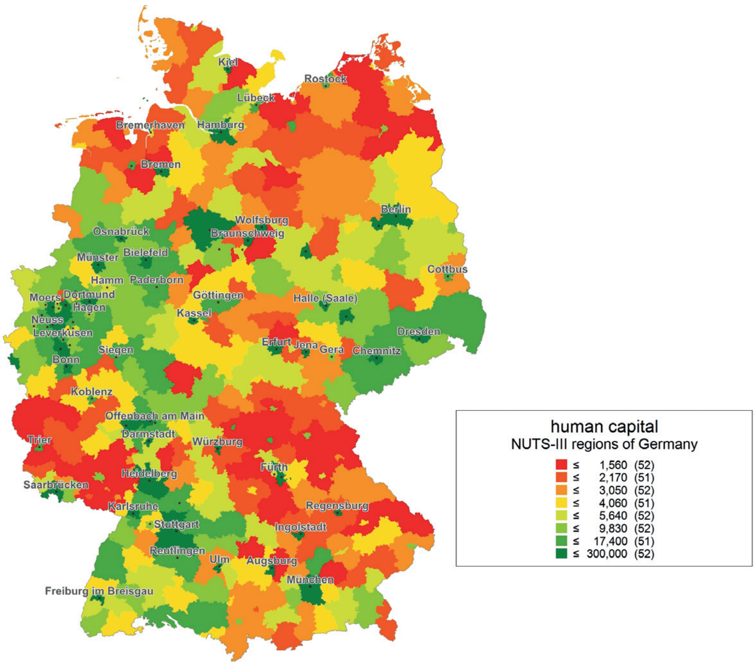
Labour Inputs in German NUTS-III Regions, 2008



Source: German Federal Statistical Office.

Figure 5

Human Capital Inputs in German NUTS-III Regions, 2008



Source: German Federal Statistical Office.

Using this information we can construct a branch vector for each of the 413 NUTS-III regions in Germany consisting of 21 different branches.

In addition to information on the sectoral structure of a region, we need information on the capital intensity of different branches. In order to collect this sort of information we use data on gross fixed assets, which are provided by the German Federal Statistical Office in the WZ 2003 classification. Following Eckey, Kosfeld and Türck (2004), we exclude buildings from the fixed asset data. Average capital intensity c_j of branch j is then calculated by

$$(7)\quad c_j = \frac{\sum_{i=0}^{413} gfa_{i,j}}{\sum_{i=0}^{413} n_{i,j}}$$

with $gfa_{i,j}$ being gross fixed assets (excluding buildings) and $n_{i,j}$ being the number of firms in region i and branch j. Multiplying average capital intensity c_j of branch j by the number of firms of branch j located in region i delivers gross fixed assets in branch j and region i:

$$(8)\quad gfa_{i,j} = c_j \cdot n_{i,j}.$$

Summing up for all branches delivers gross fixed assets gfa_i of region i:

$$(9)\quad gfa_i = \sum_{j=1}^{21} gfa_{i,j}$$

In order to guarantee that the sum of regional capital stocks adds up to the capital stock of the referring state (NUTS-I level) as published by the German Federal Statistical Office, we calculate for each region i the share of gross fixed assets this region has in the gross fixed assets of the referring state B:

$$(10)\quad s_{i,B} = \frac{gfa_{i,B}}{\sum_{i=0}^{z_B} gfa_{i,B}}$$

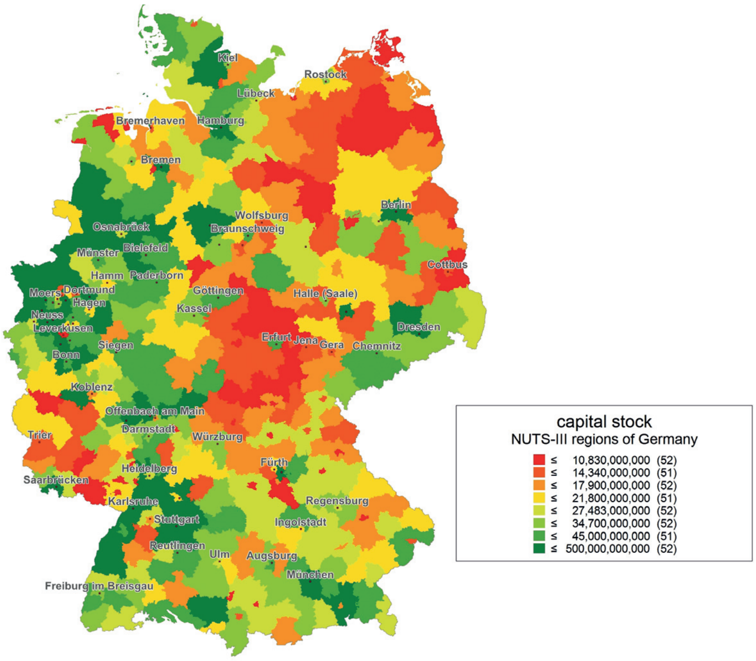
with z_B being the number of municipalities belonging to state B. Multiplying these shares with the capital stock of the referring state B as published by the German Federal Statistical Office then delivers the capital stock of region i, located in state B:

(11) $K_{i,B} = s_{i,B} \cdot K_B$

Figure 6 shows the distribution of capital stocks among the German municipalities. East German regions on average have lower capital stocks. Moreover, cities and agglomeration centers tend to accumulate higher capital stocks.

Figure 6

Capital Stocks of German Regions, 2008



Source: Own calculations based on German Federal Statistical Office & CREDITREFORM.

Estimation results

Using the described data sources we can now estimate the production function for German regions. We estimate the equation

(12) $\ln Y_i = \alpha_0 + \alpha_L \cdot \ln L_i + \alpha_H \cdot \ln H_i + \alpha_K \cdot \ln K_i + \varepsilon_i$

using OLS and report White-heteroskedasticity-corrected standard errors. The estimation results are shown in Table 1. The regression constant is positive and highly significant. The same holds true for the coefficients of the three considered input factors capital, labour and human capital. The regression explains almost 97 percent of the observed variability in regional nominal GDPs and thus has a high explanatory power.

Using the estimation results we can now calculate the Solow residual for each German municipality. Figure 7 visualizes the results. Obviously, the regions with higher technology levels are located in the south of Germany. According to our estimations, the 10 regions with the highest levels of technology are Munich, Erlangen, Wolfsburg, Fürth (county), Leverkusen, Ludwigshafen, Altötting, Frankfurt/Main, Fürth (city) and Starnberg. East German regions stand out as showing relatively low technology levels. The lowest technology levels result for Eisenach, Erzgebirge, Sächsische Schweiz/Osterzgebirge, Berlin, Halle/Saale, Ostvorpommern, Leipzig, Potsdam, Chemnitz and Erfurt. Thus, technology gaps seem to be an important factor in explaining the obvious differences in per-employee GDP between East and West Germany.

It is interesting to look at which factors contribute the most to the existing differences in GDP per employee between East and West Germany: the differences in the available factor inputs capital, labour and human capital or the differences in the level of productivity. As reported earlier, East Germany's GDP per employee reached 82 percent of the West German level in

Table 1

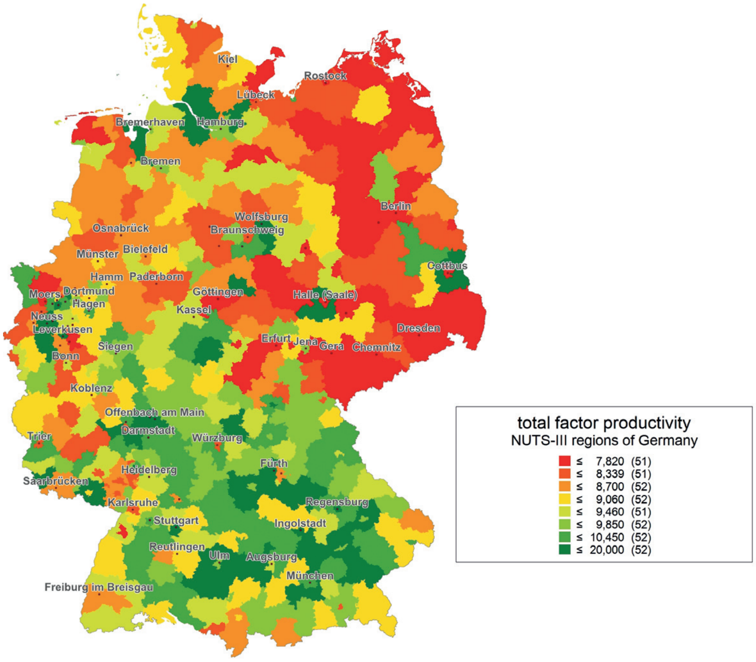
Estimated parameters of production function

Coefficient	estimated value	standard error	t-value
α_0	9.1132***	0.3223	28.28
A_L	0.8006***	0.0414	19.32
A_H	0.1448***	0.0180	8.04
A_K	0.1229***	0.0236	5.21
Observations	413		
F-Value (p-value)	4008.563 (p<0.0001)		
Adj. R^2	0.9669		
Note: We report White-corrected standard errors.			

Source: Authors' own calculations.

Figure 7

Technology Levels of German NUTS-III Regions, 2008



Source: Own estimations.

2008. If East German regions were to increase their level of total factor productivity to the average level in West Germany, East Germany's GDP per employee would increase to 94.8 percent of the West German level. Thus, the differences in GDP per employee between East and West Germany are primarily due to differences in total factor productivity. While differences in the supply of input factors also play a role in explaining the empirical pattern, this factor is of considerably lower explanatory power.

Marginal productivities

Using the estimation results allows us to calculate the marginal productivities of capital, labour and human capital. The marginal productivity of capital can be derived by differencing the productions function with respect to capital

$$(13)\quad \frac{\partial Y}{\partial K} = \chi \cdot L^{\alpha_L} \cdot H^{\alpha_H} \cdot \alpha_K \cdot K^{\alpha_K - 1} = \alpha_K \cdot \frac{\chi \cdot L^{\alpha_L} \cdot H^{\alpha_H} \cdot K^{\alpha_K}}{K} = \alpha_K \cdot \frac{Y}{K} = 0.1229 \cdot \frac{Y}{K}$$

Accordingly, we can calculate the marginal productivity of labour as

$$(14)\quad \frac{\partial Y}{\partial L} = \alpha_L \cdot \frac{Y}{L} = 0.8006 \cdot \frac{Y}{L}$$

and the marginal productivity of human capital as

$$(15)\quad \frac{\partial Y}{\partial H} = \alpha_H \cdot \frac{Y}{H} = 0.1448 \cdot \frac{Y}{H}.$$

The regionally differing marginal productivities allow us to study the GDP effect of an additional unit of an input factor on the regional level.

Figure 8 shows the resulting regional marginal productivities of capital. In the regions pigmented green, additional capital will deliver the highest marginal productivity. While there is considerable variation in marginal capital productivities among the regions, there is no systematic difference between East and West German regions. On average, an additional euro of capital delivers an increase in nominal GDP of 0.0246 euros in East Germany versus 0.0243 euros in West Germany. Capital delivers the highest marginal productivity in Wolfsburg (0.092 euros) and Leverkusen (0.084 euros), and the lowest productivity in Krefeld (0.007 euros) and Baden-Baden (0.008 euros). Capital productivity in general turns out to be high in agglomeration centers around large cities like Munich, Ulm, Stuttgart, Hamburg, Frankfurt and Düsseldorf and the Ruhr-Area. However, regions around larger East German cities such as Cottbus, Halle/Leipzig and Erfurt/Jena also exhibit high degrees of capital productivity.[7] Interestingly enough, marginal capital productivity turns out to be almost uncorrelated with the absolute level of capital.[8]

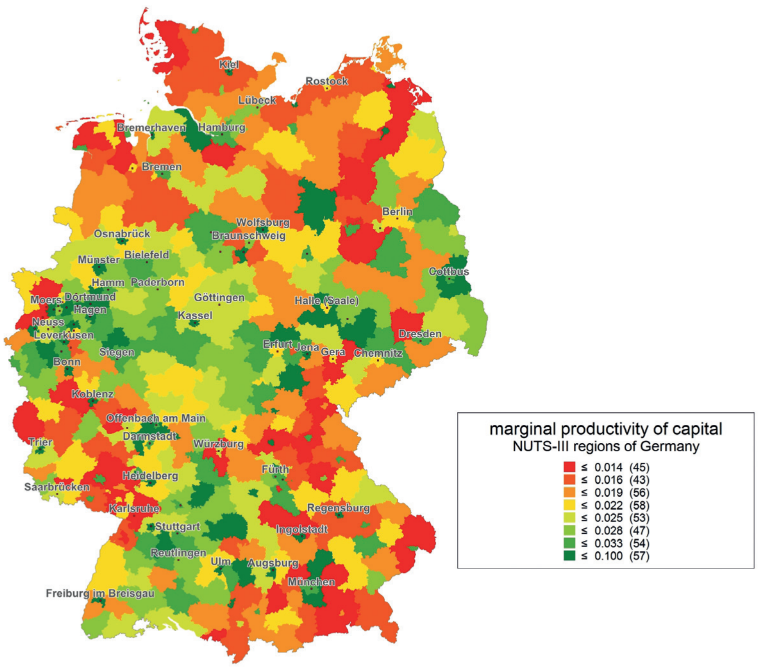
In Figure 9 we display the regional marginal productivities of labour. It is easy to see that labour productivity in East Germany is – on average – well below the West German level. While an additional unit of labour increases GDP on average by 44,294 euros in East Germany, in West Germany it increases GDP by 53,976 euros. The highest levels of marginal labour pro-

[7] Our results are broadly in line with findings of Eckey, Kosfeld and Türck (2004). Different from their results we find capital productivity to be high even in the Wolfsburg and Ingolstadt region. However, since the study of Eckey, Kosfeld and Türck (2004) uses older data (2000) and is conducted on a higher level of aggregation (job market regions) the results can only be compared with caution.

[8] The correlation coefficient between capital and marginal capital productivity is – 0.03.

Figure 8

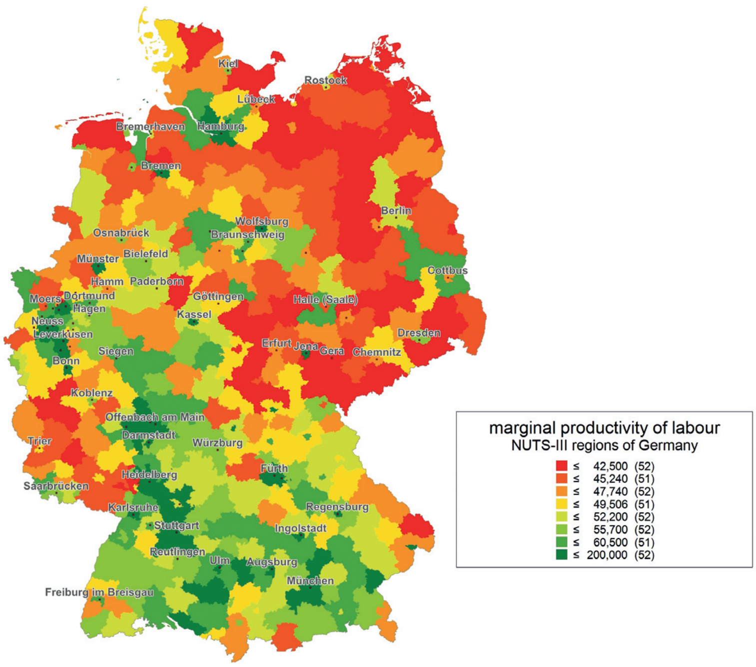
Marginal Productivity of Capital in German NUTS-III Regions, 2008



Source: Own estimations.

Figure 9

Marginal Productivity of Labour in German NUTS-III Regions, 2008



Source: Own estimations.

ductivity can be found in the Munich area (142,760 euros) and in Erlangen (131,010 euros), followed by Frankfurt/Main (110,230 euros), Düsseldorf (97,576 euros) and Wolfsburg (97,249 euros). In general, regions in South Germany in particular tend to show high degrees of labour productivity. The lowest marginal productivities of labour can be found in Eisenach (32,860 euros), Ostvorpommern (36,117 euros) and Mecklenburg-Strelitz (36,189 euros). We again find no evidence of a negative correlation between the level of labour inputs and its marginal productivity. On the contrary, we find a small but positive correlation coefficient of 0.31.

Figure 10 illustrates the regional patterns of marginal productivities of human capital. We find the highest marginal productivity of human capital for Südwestpfalz (665,781 euros), Straubing-Bogen (504,755 euros) and Fürth County (501,989 euros). The lowest values result for Erlangen (18,169 euros), Jena (25,347 euros) and Darmstadt (25,431 euros). Two striking features are obvious. Firstly, the marginal productivities of human capital are much lower in East Germany. An additional, highly qualified employee delivers on average an additional GDP of 158,684 euros in West Germany, while the marginal effect in East Germany is only 99,219 euros and thus much smaller. Secondly, the effect of an additional highly qualified employee is typically small in cities.[9] Highly qualified employees are typically educated in cities with universities or universities of applied sciences. Significant shares of these people stay in the region where they were educated or move to other cities. Only a minority of high educated people moves to more rural areas. As a result, there is a significant shortage of well-educated employees, especially in rural regions. This is in line with the finding of a negative

[9] This finding coincides with the results reported by Eckey, Kosfeld and Türck (2004).

(but still quite small) correlation coefficient of – 0.35 between the level of human capital and its marginal productivity.

Conclusions

Two decades after German reunification significant differences in GDP per capita between East and West Germany still exist. To a somewhat lesser extent, this also holds true for GDP per employee. While it is often argued that this to be due to the lower levels of input factors such as capital, labour and human capital, we show that differences in the level of total factor productivity account for most of the remaining gap between East and West Germany. We also show that marginal capital productivity – on average – in East Germany is on almost the same level as in West Germany. However, East Germany exhibits comparatively low levels of marginal productivity of labour and particularly low levels of human capital.

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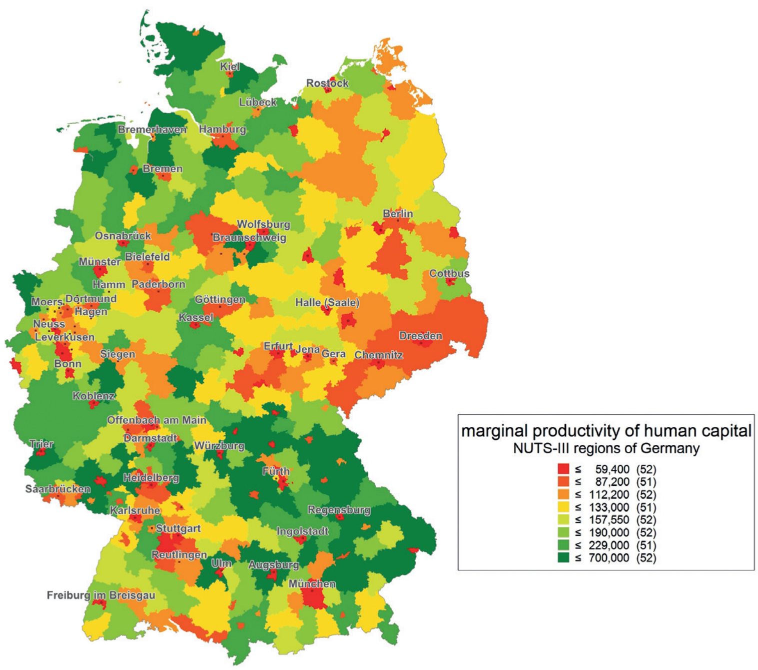
Figure 10

Marginal Productivity of Human Capital in German NUTS-III Regions, 2008



Source: Own estimations.

The United States Is Edging towards a Comparative Advantage in Services

Herbert Glejser*

First clues

Indications abound as to the comparative advantage of the United States in services. In the first decade of this century the ratio of service exports to imports reached 121 percent, whereas for goods it was only 53 percent (61 percent excluding oil). The proportion of American multinationals that work for subsidiaries abroad (mostly in industry) also rose from 21.4 percent in 1989 to 32.3 percent in 2009. The share of R&D spending going to foreign subsidiaries soared from 9 percent to 15.6 percent, and that of capital investment rose from 21.8 percent to 29.6 percent during the same period. In a *Harvard Business Review* survey, alumni reported that when their firms had to decide whether to do something in the United States or elsewhere, the United States lost two times out of three.[1]

Evidence

The surprising news is that this trend is still going strong, and even accelerating. Table 1 presents the evolution of productivity in industry and services over 12 years in the United States and in Germany-France. The gap between services and industry thus rose by a huge 1.7 percent (= 1.4 percent + 0.3 percent) annually, which is of the order of magnitude of GNP-growth. In fact, while four items in eight of services showed a net import for the United States in 1986 – passenger fares, other transportation, telecommunication and insurance – only the last one remained negative in 2011.

Table 1

Indices of productivity (1995–2007)

	Industry	Services
US	117%	115%
Germany-France (G-F)	122%	98%
Ratio US/G-F	0.96 (– 0.3 yearly)	1.17 (+ 1.4 yearly)

Source: The Economist, 18 February 2012, 24.

* Universities of Namur and Brussels.

[1] See The Economist, "This Time It Is Serious", 18 February 2012, 57.

Table 2

Shares of services of total value added and employment and ratio of services to industry productivities (both in %) – 2010

Position	Countries	Value added (1)	Active population (2)	Productivity (3)
1	Hong Kong	92.3	85	107.3
2	Luxembourg	86	80.6	106.7
3	Canada	78	77.3	102.6
4	US	76.7	79.1	97
5	Denmark	76.1	77.3	98.4
6	Singapore	72.8	69.7	104.4
7	Netherlands	72.4	80	90.5
8	Sweden	72.2	70.7	102.1
9	Australia	71.2	76	94.9
10	Switzerland	71.2	73.2	97.3
11	Ireland	70	75	92.1
12	Iceland	69.9	76	95.8
	Median	72.4	76	97.8

Source: CIA World Factbook (2012).

Table 3

Share of two large countries in import of goods in 2009

	Germany	Japan
Australia	5.3	8.4
US	4.6	6.2
Mexico	4.1	4.8
Canada	4	3.7
Iceland	3.9	3.6
Germany	–	4
Japan	3.2	–

Source: CIA World Factbook (2012).

Table 2 provides additional evidence of the high share of services in the US economy. It shows that this is not due to high income per head as the table compares the United States with countries enjoying comparable welfare. The high figures for Hong Kong and Luxembourg come as no surprise. The United States is fourth in columns (1) and (2) in the same table. It would even be closer to the top if we considered private services only, as the share of public services are low in the United States. Note that Canada even ranks above the United States in columns (1) and (3), indicating

Table 4

Ratio of public expenditure in education and gross fixed investment (2008)

Rank	Country	Score (in %)	Rank	Country	Score (in %)
1	Cuba	87	40	Turkey	20
2	Sweden	47	41	Philippines	20
3	Denmark	44	42	Australia	19
4	Norway	43	43	Chile	19
5	Israel	42	44	Luxembourg	19
6	Finland	34	45	India	19
7	Cyprus	34	46	Slovakia	17
8	Belgium	33	47	Bulgaria	17
9	North Korea	33	48	Jamaica	17
10	UK	32	49	Egypt	17
11	Iceland	31	50	Iran	17
12	Poland	31	51	Peru	17
13	US	30	52	Ireland	16
14	New Zealand	29	53	Greece	16
15	Morocco	29	54	Spain	16
16	Tunisia	28	55	Nepal	16
17	Switzerland	28	56	Singapore	16
18	Mexico	27	57	Croatia	16
19	Lithuania	27	58	Thailand	16
20	Austria	27	59	Czech Republic	16
21	Germany	27	60	Rumania	16
22	Canada	26	61	South Korea	15
23	Netherlands	26	62	Japan	15
24	Portugal	26	63	Kazakhstan	15
25	Panama	25	64	Pakistan	14
26	Italy	25	65	Sri Lanka	13
27	Hungary	24	66	Vietnam	13
28	Slovenia	24	67	Nicaragua	12
29	Uruguay	23	68	Albania	11
30	Brazil	22	69	Georgia	11
31	Argentina	22	70	Bangladesh	10
32	Mongolia	22	71	Myanmar	10
33	Belarus	22	72	Cambodia	8
34	Hong Kong	22	73	China	5
35	Russia	21	74	Ecuador	5
36	Ukraine	21	75	Dominican Republic	5
37	Latvia	21	76	Indonesia	5
38	Taiwan	21	77	Haiti	4
39	Senegal	20	**Median**	20	

Source: L’état du monde en 2010.

that Canada is following in the footsteps of its big neighbour. As for productivity, the United States only ranks eighth, which could be due to the longer working hours in Asian countries (shops, restaurants, etc.), to the generally superior level of education of manpower in almost all nations (languages, math) and to their higher level of investment (especially Singapore, Hong Kong and Canada). It is also worth noting the correlation between columns (2) and (3) for most countries – Hong Kong, Luxembourg, Denmark, Canada, Iceland, Australia and the United States – showing that where productivity, and thus wages, are high, manpower is attracted to services.

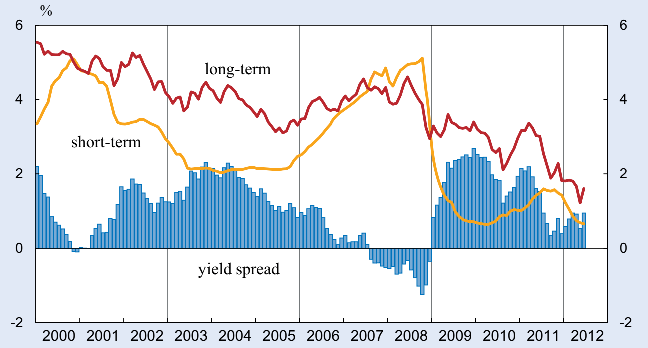
Moreover, we would expect from comparative cost theory that nations with a comparative advantage would import a lot from countries with an advantage in industry – *pace* theory of intra-industry trade – such as Germany and Japan. Table 3 lists their share in the merchandise import of countries, eliminating the cases where proximity (except to some extent, for Australia) or a customs union would bias the comparison. The United States ranks second in both cases and may even rank first in the last case if the proximity of Australia and Japan were corrected. It is also worth noting the high rank correlation between the two columns: 0.84, which is significant at the 10 percent level of the two-tail test (for Germany and Japan, we consider the flows 4.0 and 3.2): trade with Germany and Japan, both with a comparative advantage in industry, is positively correlated. This strengthens our conclusion. As for the *export* of merchandise to Germany and Japan from the United States, we would expect it to be low compared with *import* as the United States specializes in services: indeed, this figure amounts respectively to 58 percent and 50 percent, which both lie far below the overall rate of export to import of 67 percent.

Finally, when a country specialises in services, this would lead us to assume that it invests more in human than in physical capital. Table 4 illustrates the ratio of public expenditure in education and gross fixed investment in different countries. Of course, this table also reflects factors other than static specialisation: the scores are also influenced by the dynamics of specialisation, as evidenced by the low data for China and Indonesia, showing the rapid industrialisation of these countries, which requires much physical capital. Yet, in general, the scores do tally with the statistics of Table 2, namely the high rank of Sweden, Denmark, Iceland, Switzerland, Canada and the Netherlands. In this decade, finance, intellectual services, dividends from abroad and the four t's (trade, transportation, teaching and tourism) will be the milk cows of the American economy and its balance of payments.[2]

[2] According to the Boston Consulting Group, the most threatened industries are: machinery, electrical apparatus and electronics.

FINANCIAL CONDITIONS IN THE EURO AREA

Nominal Interest Rates a)

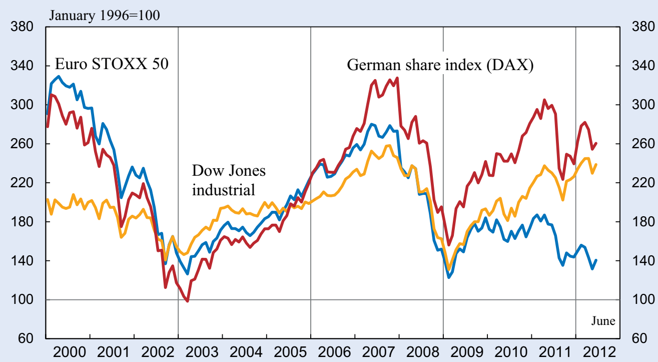


a) Weighted averages (GDP weights).

Source: European Central Bank.

In the three-month period from April to June 2012 short-term interest rates decreased. The three-month EURIBOR rate declined from an average 0.74% in April 2012 to 0.66% in June 2012. The ten-year bond yields also decreased from 1.66% to 1.61% in the same period of time. On the other hand, the yield spread increased from 0.59% in April 2012 to 0.95% in June 2012.

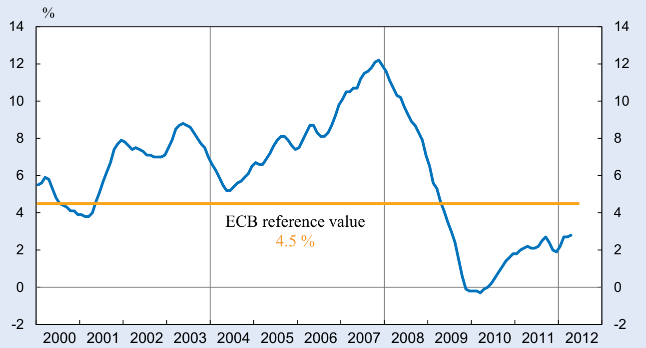
Stock Market Indices



Source: Deutsche Bundesbank, Dow Jones & Co., Inc.

The German stock index DAX decreased in June 2012, averaging 6,416 points compared to 6,761 points in April 2012. The Euro STOXX also declined from 2,306 to 2,264 in the same period of time. Moreover, the Dow Jones International decreased, averaging 12,880 points in June 2012 compared to 13,214 points in April 2012.

Change in M3 a)

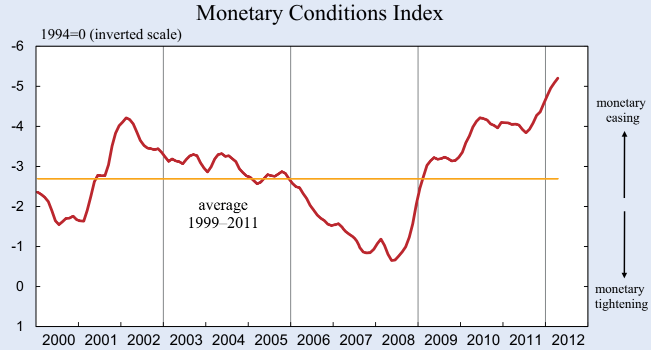


a) Annual percentage change (3-month moving average).

Source: European Central Bank.

The annual growth rate of M3 increased to 2.9% in May 2012, compared to 2.5% in April. The three-month average of the annual growth rate of M3 over the period from March 2012 to May 2012 slightly increased to 2.8%, from 2.7% in the period from February 2012 to April 2012.

Monetary Conditions Index



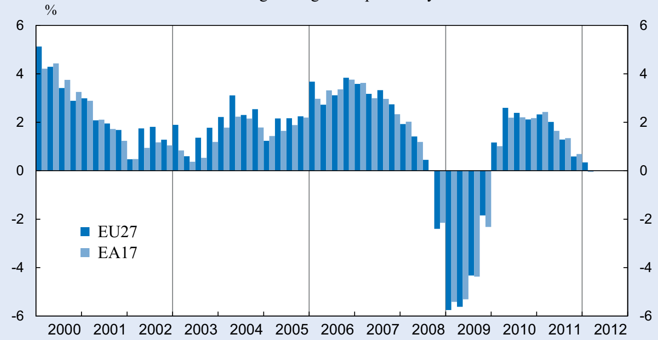
Note: MCI index is calculated as a (smoothed) weighted average of real short-term interest rates (nominal rate minus core inflation rate HCPI) and the real effective exchange rate of the euro.

Source: European Central Bank, calculations by the Ifo Institute.

Between April and November 2009 the monetary conditions index remained rather stable after its rapid growth that had started in mid-2008. The index started to grow again since December 2009, signalling greater monetary easing. In particular, this has been the result of decreasing real short-term interest rates. In April 2012 the index has continued its fast upward trend started in August 2011 and reached its peak.

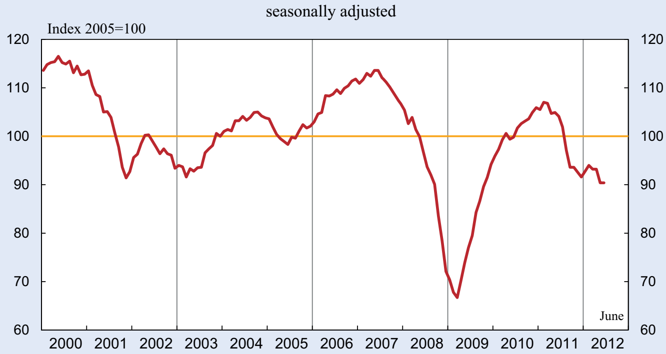
EU SURVEY RESULTS

Gross Domestic Product in Constant 2000 Prices
Percentage change over previous year



Source: Eurostat.

EU27 Economic Sentiment Indicator
seasonally adjusted

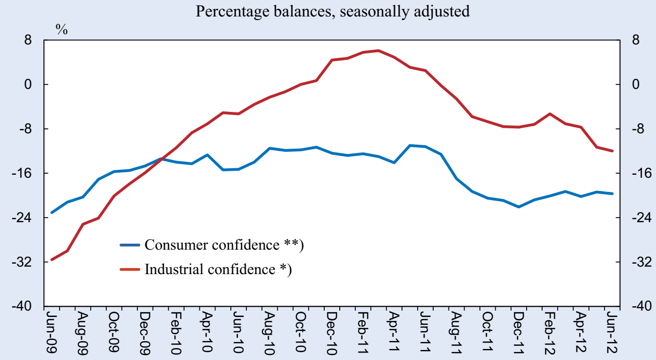


Source: European Commission.

According to the second Eurostat estimates, GDP decreased by 0.1% in the euro area (EA17) but increased by 0.1% in the EU27 during the first quarter of 2012, compared to the previous quarter. In the fourth quarter of 2011 the growth rates were – 0.3% in both zones. Compared to the first quarter of 2011, i.e. year over year, seasonally adjusted GDP decreased by 0.1% in the euro area and increased by 0.1% in the EU27.

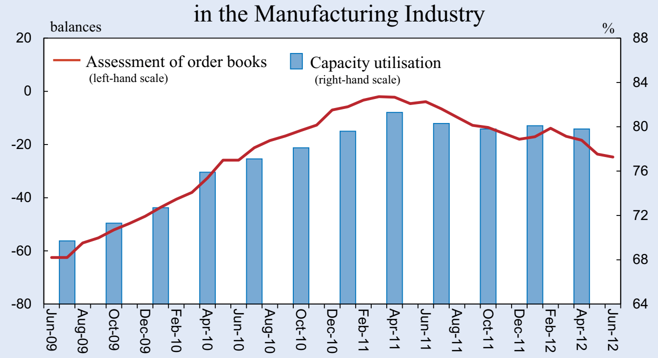
In June 2012 the Economic Sentiment Indicator (ESI) remained unchanged at 90.4 in the EU27 and decreased by 0.6 points in the euro area (EA17), to 89.9. In both the EU27 and the euro area the ESI stands below its long-term average.

EU27 Industrial and Consumer Confidence Indicators
Percentage balances, seasonally adjusted



Source: European Commission.

EU27 Capacity Utilisation and Order Books
in the Manufacturing Industry



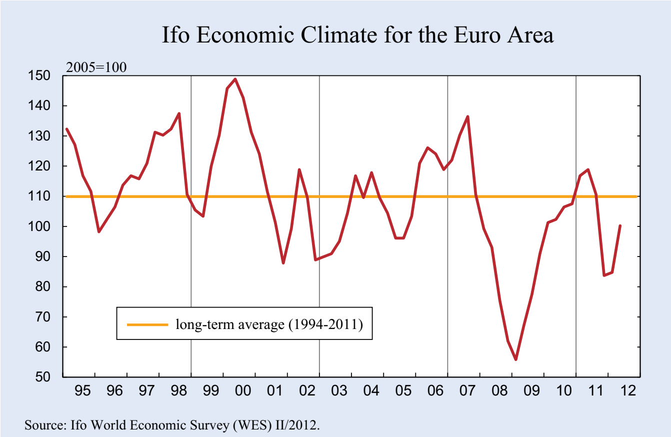
Source: European Commission.

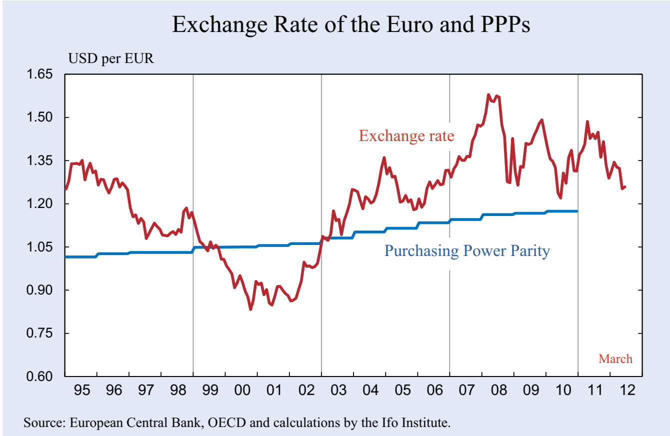
* The industrial confidence indicator is an average of responses (balances) to the questions on production expectations, order-books and stocks (the latter with inverted sign).
** New consumer confidence indicators, calculated as an arithmetic average of the following questions: financial and general economic situation (over the next 12 months), unemployment expectations (over the next 12 months) and savings (over the next 12 months). Seasonally adjusted data.

In June 2012, the *industrial confidence indicator* declined in both the EU27 (– 0.7) and the euro area (– 1.3). The *consumer confidence indicator* also decreased in both the EU27 (– 0.3) and the euro area (– 0.5).

Managers' assessment of *order books* worsened from – 23.6 in May to – 24.7 in June 2012. In April 2012 the indicator had reached – 18.4. *Capacity utilisation* also slightly decreased to 79.8 in the second quarter of 2012, from 80.1 in the previous quarter.

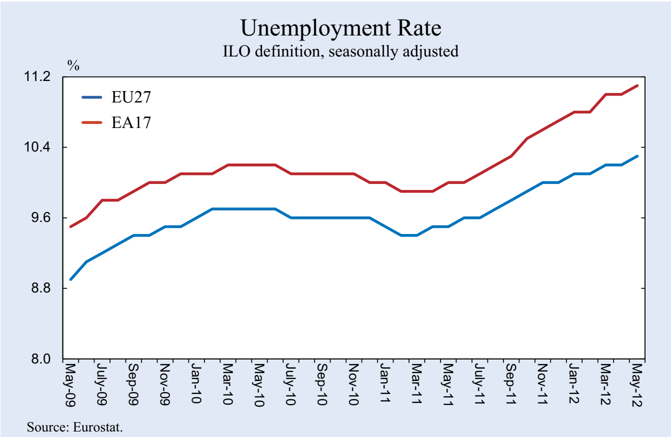
Euro area indicators

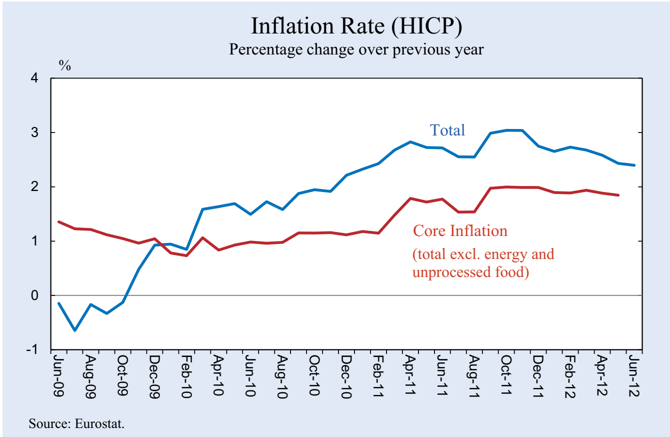




The Ifo indicator of the economic climate in the euro area (EA17) rose more strongly in the second quarter of 2012 than in the previous quarter, but remains below its long-term average. While appraisals of the current situation brightened only slightly, the six-month outlook is significantly more positive than in the first quarter. However, the economic situation in the euro area is not homogenous.

The exchange rate of the euro against the US dollar averaged approximately 1.28 $/€ between April and June 2012. (In March 2012 the rate had amounted to around 1.33 $/€.)





Euro area (EA17) unemployment (seasonally adjusted) amounted to 11.1% in May 2012, compared to 11.0% in April. It was 10.0% in May 2011. EU27 unemployment stood at 10.3% in May 2012, compared to 10.2% in April. The rate was 9.5% in May 2011. In May 2012 the lowest rate was registered in Austria (4.1%), the Netherlands (5.1%), Luxembourg (5.4%) and Germany (5.6%), while the unemployment rate was highest in Spain (24.6%).

Euro area annual inflation (HICP) was 2.4% in May 2012, down from 2.6% in April. A year earlier the rate had amounted to 2.7%. The EU27 annual inflation rate reached 2.6% in May 2012, down from 2.7% in April. A year earlier the rate had been 3.2%. An EU-wide HICP comparison shows that in May 2012 the lowest annual rates were observed in Greece and Sweden (both 0.9%) and Bulgaria (1.8%), and the highest rates in Hungary (5.4%), Estonia (4.1%), Cyprus and Malta (both 3.7%). Year-on-year EA17 core inflation (excluding energy and unprocessed foods) decreased to 1.84% in May 2012, from 1.88% in April.

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