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The Shadow Economy in Europe, 2010

Using electronic payment systems to combat the shadow economy





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Dr. Schneider is one of the leading experts on the shadow economy. He has published multiple articles and books on the shadow economy. He is a professor of economics and the chair of the Department of Economics at Johannes Kepler University of Linz in Austria.



A.T. Kearney

A.T. Kearney is a global strategic management consulting firm known for helping clients gain lasting results through a unique combination of strategic insight and collaborative working style. The firm was established in 1926 to provide management advice concerning issues on the CEO's agenda. Today, we serve the largest global clients in all major industries and have specific expertise in cards and payments. A.T. Kearney's offices are located in major business centres in 37 countries, including 25 offices in Europe.

At an estimated €2.1 trillion, Europe's shadow economy is significant. It ranges from 8 percent of GDP (gross domestic product) in Switzerland and Austria to more than 30 percent in some Central and Eastern European countries. Governments have devised clear objectives to reduce this "other" marketplace, but the range of causes makes finding a solution a complex task. A new study explores the structure and impact of the shadow economy and evaluates the role that electronic payments can play in reducing it.

The "shadow economy," a blurry area of commerce that includes legal activity hidden deliberately from public authorities, is a part of everyday life almost everywhere. A painter offers his work at half price by doing it outside the official economy and avoiding taxes. A bar owner accepts €5 for a glass of wine and doesn't report the sale to authorities. A construction company doesn't report income to the government to avoid meeting legal standards, such as minimum wage or safety regulations.

Although the exact size of the shadow economy is difficult to ascertain, it's believed to be about €2.1 trillion in Europe.¹ In Germany and France, this economy is about one-eighth the size of the countries' official GDP, but in less-developed Eastern European nations, such as Bulgaria, Croatia, Lithuania and Estonia, it's 30 percent or more.

More people are inclined to work outside the normal, legal framework as the global economy

continues to struggle. Therefore, it's important to understand the positive and negative effects of the shadow economy, so countries can take the right steps toward capturing lost revenues, protecting workers, and providing for their citizens.

Within this context, A.T. Kearney and Friedrich Schneider, Ph.D., professor of economics and chairperson of the Department of Economics at Johannes Kepler University in Linz, Austria, conducted a study to explore the structure of the shadow economy in Europe and identify measures to reduce it. Dr. Schneider divided the shadow economy into 12 industry sectors in six European countries. A.T. Kearney analyzed the data and evaluated the range of solutions used in countries around the world. The firm also explored which industry subsectors could benefit most from the use of electronic payment systems to reduce the size and impact of the shadow economy (*see sidebar: About the Study on page 2*).

¹ Friedrich Schneider. "Size and Development of the Shadow Economy of 31 European Countries from 2003 to 2010," July 2010. (http://www.econ.jku.at/members/Schneider/files/publications/LatestResearch2010/ShadEcEurope31_Sept2010_RevisedVersion.pdf). The calculation is for 2010 and encompasses the 27 countries of the European Union plus Croatia, Norway, Switzerland and Turkey. The 2010 GDP estimates are taken from Eurostat.

The study, first completed in 2008, was updated in 2010 to include more insights into the impact of the global economic crisis on the shadow economy, and to explore new practices governments are using to reduce the effects of the shadow economy.

The Size of the Shadow

The shadow economy is the realm of legal business activities performed outside the purview of authorities. It doesn't include illegal activities and crimes, such as drug dealing, smuggling, money laundering or embezzlement, or household enterprises

About the Study

Measuring the shadow economy is a complex science, and explaining all of the approaches would fill a science book. This overview provides a brief look at the methods we used in this study to measure the shadow economy of six countries:

Direct. We analyzed publicly available information about the shadow economy, such as information from anonymous surveys. Researchers found that survey participants were surprisingly honest and provided important details about the shadow economy.

Indirect. We used macro-economic indicators of the real economy to discern the shadow economy's impact. Such approaches must rely on macroeconomic figures that often aren't dependable or suffer from systematic failures. These figures include discrepancies between national expenditures and income statistics, differences between the official and actual labor force, statistics on transactions and currency demand, and comparisons between electricity consumption and the output of the real economy.

Model or latent estimation. We used a statistical technique called MIMIC (multiple indicators, multiple causes) to create a structural model for the shadow economy and exam-

ine the relationships between this economy and several input factors, such as the share of direct taxation or the social security burden. The model consists of observed and unobserved variables and specifies causal relationships among the unobserved variables.

Breakdown by Industry Segments

The study broke down the shadow economy by industry segments to compare it to the official economy. This was difficult, because the European economy has different industry classifications from the questionnaires. As a result, the researchers were forced in some cases to exercise their own judgment when dividing up industries, and some activities, such as entertainment and some household services, couldn't be placed into official categories.

As there is no official breakdown of the GDP per industry segment, we used GVA (gross value added), which is the value of the goods or services minus the cost of inputs used to produce them. The difference between GVA and GDP is mainly in the treatment of taxes and subsidies on products or services.

The following three-step approach was used to evaluate areas most likely to be helped by electronic payments:

Country analysis. We selected six focus countries with relevant shadow economies (Germany, Italy, Poland, Romania, Spain and Turkey) and then divided each shadow economy into 12 sectors, based on our research and questionnaires. We used our own estimates to compare undeclared work against under-reporting.

Sector analysis. We selected the three sectors with the highest share of sales underreporting, based on our estimates, and split them into 30 subsectors, based on official categories. As detailed questionnaires weren't available for each subcategory, we used information on industry sub-sectors and researcher judgment to produce an educated estimate.

Addressable areas. We identified the most promising subsectors for electronic payments by analyzing the suggested amount of shadow economy concentration (based on the sector analysis), the size of the subsectors, and the potential impact of payment systems. We determined this impact by deriving the number of low-value payments, current penetration of electronic payments, convenience of electronic payments, profit margins, and the share of undeclared work.

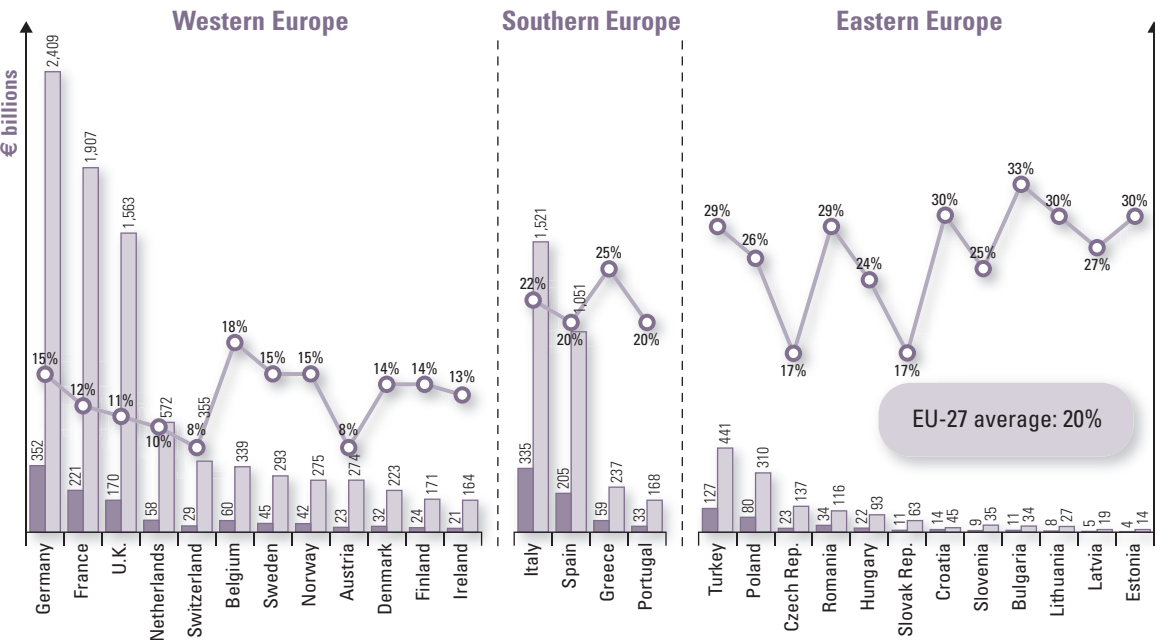
that, by law, don't need to be registered with the government. Figure 1 shows the extent of the shadow economy in the European Union by size and percentage of GDP. Germany, Italy and France account for about half of Europe's shadow economy. In Eastern Europe, the shadow economy is much larger in relation to the official economy than it is in Western Europe. For example, Turkey, with an official GDP of €441 billion in 2009, has a shadow economy of about €127 billion.

The shadow economy can be divided into two parts. "Undeclared work," which refers to wages that workers and businesses don't declare to the government to avoid taxes or documentation,

accounts for about two-thirds of the shadow economy.² Undeclared work is widespread in construction, agriculture and household services, such as cleaning, babysitting, elderly care and tutoring. According to a recent study by Dr. Schneider, in Europe's more developed economies, such as Germany, 30 to 35 percent of the population has taken on second and even third jobs and doesn't declare the additional income to tax authorities, costing the country billions of euros per year.

The other one-third comes from under-reporting, which occurs primarily when cash-based businesses, such as small shops, bars and taxis, report only part of their income to avoid some of the tax burden. This is common in cash-based

Figure 1
The shadow economy in relation to total GDP



Notes: Data for EU-27 (no shadow economy data on Cyprus, Luxembourg, Malta), plus Norway, Switzerland and EU candidate countries in 2009. The size of the shadow economy is calculated using the MIMIC and currency demand method
Sources: Dr. Friedrich Schneider, Johannes Kepler University of Linz, Austria; A.T. Kearney analysis

² The exact division between undeclared work and underreporting is just an estimate, as the data does not exist to draw a scientific conclusion.

businesses that require little documentation, such as a bar owner taking money for a drink and not documenting it, or a plumber receiving cash for his services at a private household without issuing a receipt or declaring the income.

Although the size of the shadow economy declined in 2009 because of the economic downturn, the shadow economy has recovered and is on the rise again. Governments indicate that the past two years have brought setbacks to their efforts to rein in the shadow economy, as unemployment and stagnating living standards reduced compliance and created more incentives to engage in shadow activities. Recent hikes and planned increases in VAT (value added tax), personal income tax, social security contributions, or corporate profit tax are likely to exacerbate the problem in 2011.

The research for this paper breaks down the structure, scope and effects of the shadow economy in Europe.³ The study includes a scientific analysis of the shadow economy for a wide range of industries in Germany, Italy, Poland, Romania, Spain and Turkey.

We examined various solutions proposed and implemented by different countries and evaluated the role that electronic payments can play in reducing the shadow economy. We divided each industry into sub-categories and examined each one to determine which areas would be most promising for electronic payments.

What Lurks in the Shadows

It's important to understand exactly who benefits from such transactions when considering the factors that drive the shadow economy. In some cases, the benefits are shared between the payee

and payer. A typical example is the tradesman who offers a 50 percent cash discount to a customer. The customer saves money on the work and the tradesman saves money on the taxes. Undeclared work is difficult to quantify, as it's in the best interest of both sides to remain hidden. In other instances, the benefits are realized by only one side, usually the one receiving payment. The bar owner who doesn't declare a beer sale, for example, might still charge full price for the beer.

More people are inclined to work outside the normal, legal framework as the global economy continues to struggle.

Four main factors influence the size and scope of the shadow economy in any given location:

Savings. By working outside the active economy, participants can avoid taxes and possibly social security payments, circumvent tax and labor regulations, and sidestep paperwork. A strong causal relationship exists between a country's tax rate and the size of its shadow economy. Saving money draws people into this other economy, especially during an economic downturn.

Lack of a "guilty conscience." The shadow economy often is considered to be a normal part of society. This attitude is prevalent in places where the perceived quality of state institutions and benefits is low, and in some Eastern European countries where there is little confidence in the state. The benefits of the shadow economy also are

³ We chose to analyze these 12 countries because of their different cultures and varied stages of development: Bulgaria, Czech Republic, Germany, Greece, Hungary, Italy, Ireland, Poland, Portugal, Romania, Spain and Turkey.

immediate, while state benefits are usually indirect, collective or deferred.

Ease of participation. Paying with cash makes it easier not to declare work. Since cash payments cannot be traced, they are used for both undeclared work and underreporting. Many Europeans do additional undeclared work on the side and receive payments in cash.

Low risk of detection. Participating in the shadow economy is illegal, but the less chance there is of getting caught, and the lower the penalties, the more people will consider the risk worthwhile.

The difficulty of reducing the shadow economy stems in part from its ambiguous role in society. The shadow economy certainly has negative effects. For example, governments lose revenues from income tax and social security contributions, and they cannot enforce safety rules outside the official economy. This other economy also promotes behaviors that have a negative impact on society. These include inequality of competition, which occurs when shadow services are significantly cheaper than those from the official economy. It also promotes a “free-ride” attitude among some citizens, who take official benefits without paying for them.

Some of these negatives are offset by other, more positive factors, at least in terms of unreported work. For example, much of the money ends up benefiting the economy as a whole. The study estimates that about two-thirds of shadow-economy income is spent in the official economy. This boosts national economic growth and amasses VAT, which makes up for at least part of the lost revenues. Additionally, many of the services offered

in the shadow economy would likely vanish if forced to exist in the official economy. Indeed, in Germany, more than two-thirds of services offered in the shadow economy would disappear or would be performed by customers themselves.⁴

These positive factors make it difficult to quantify the exact toll the shadow economy takes on a country’s official economy. In any case, the shadow economy is large and can’t be ignored by any government, particularly in times of economic crisis.

The Search for Solutions

Governments are under pressure as slow growth and high unemployment take their toll on fiscal budgets. As a result, many European countries are debating the shadow economy and measures to curb it. When we originally studied this other economy in 2008, we interviewed more than 20 public officials in Europe, including ministers of finance, tax authorities, and association leaders, to determine measures used to limit the shadow economy.⁵

For this 2010 update, we dug deeper into the shadow economy of 12 European countries. We explored the measures introduced during the past decade and assessed their impact and effectiveness. We compared ideas among different countries and discussed possible new measures in view of each country’s past track record and level of development. We also created a broad database of more than 150 measures from around the world, including more than 120 from Europe.⁶

The findings reveal that most countries focus foremost on curbing undeclared work and creating credible laws and penalties. Other measures

⁴ Friedrich Schneider. “Shadow Economies Around the World: What Do We Really Know?” *European Journal of Political Economy*, Vol. 21/3, September 2005, pp. 598-642.

⁵ Interviews took place in September 2008 by telephone and in person.

⁶ The database includes a record of measures collected by the European Foundation for the Improvement of Living and Working Conditions (Eurofound: <http://www.eurofound.europa.eu/areas/labourmarket/tackling/search.php>), by the European Industrial Relations Observatory, and from studies by the European Commission, including “Undeclared Work in an Enlarged Union” in 2004.

focus on tax fraud, a crime that certainly is related to the shadow economy but that isn't considered part of the shadow economy. The broad spectrum of enforcement measures falls under two umbrellas, negative and positive.⁷

Negative enforcement. All new regulations, controls and penalties to limit the shadow economy by the force of law are considered negative measures. These include identification cards for construction workers, the forced use of electronic payments, onsite visits by public authorities, or tax audits by inspectors. These measures tend to be unpopular, and their success depends on reliable enforcement and solid penalties.

The Decreto Bersani is a sweeping law passed in Italy in 2006 that imposed strict penalties on shadow economy activities. It's an example of a powerful enforcement technique. Under this law, the government can close a retailer temporarily that fails to issue a sales receipt three times in a five-year period or it can shut down construction sites if government inspectors find employment irregularities. Italy brought in €9.1 billion in additional tax revenues by enforcing receipts at retailers along with other measures the government added in 2009.

More common measures include monetary penalties and the loss of benefits for shadow economy participants. In Poland, for example, companies that are caught employing undeclared workers lose their eligibility for EU or government subsidies and must return any funding already granted to them. In Portugal and Italy, doctors, lawyers and other professionals have been prosecuted following probes by tax authorities of differences between tax declarations and apparent living standards.

Positive enforcement (indirect and direct). Some of the most powerful measures to curtail the

shadow economy are considered indirect. Primary among these measures is revamping the tax and social security systems to make them simpler and, in some cases, cheaper. In Germany, for example, the government introduced "mini-jobs" reform, simplifying the red tape and taxes to encourage lower-wage workers, such as household servants, to join the official economy. In the past several years, some Eastern European countries, including Slovakia, Bulgaria and Romania, have introduced flat-tax rates for individuals and corporations and reduced social security contributions to discourage tax evasion.

Some countries use direct incentives to encourage participation in the official economy, such as Belgium's system of vouchers offered to workers in household jobs, or the Czech model of reduced VAT rates for maintenance and repairs in private households. On top of the benefits of documenting and legalizing income streams, the measure also encourages homeowners to invest in their homes by using specialists rather than opting for do-it-yourself.

Some countries have produced strong results by improving the lines of communication between citizens and governments. In Denmark, the government sponsored a marketing campaign designed to illustrate the costs of the shadow economy to citizens. It showed the harm caused by lost tax payments and asked, "What if everyone worked undeclared?" In Portugal, the "Ask for a receipt" campaign sought to raise public awareness about the impact of sales underreporting. The results were promising throughout the campaign, but long-term changes in behavior require persistent communication. Such campaigns might have less effect in countries where the shadow economy is an entrenched part of doing business. Still, they can bring the shadow economy to the

⁷ *European Foundation for the Improvement of Living and Working Conditions.*

public’s attention and provide a forum for reporting incidents.

Of the leaders interviewed, most understood that enforcement was contingent not only on measuring the shadow economy but also on measuring the success of initiatives to curtail such economies. Yet measurement can be elusive. Tangible results could be discerned in just 10 percent of government actions, either because the government action was too recent or it was one of many variables in play.

Our research also reveals that underreporting hasn’t been broadly addressed in Europe. In fact, while evaluating more than 120 measures used to curtail the shadow economy in Europe, we found that just a quarter focused on sales underreport-

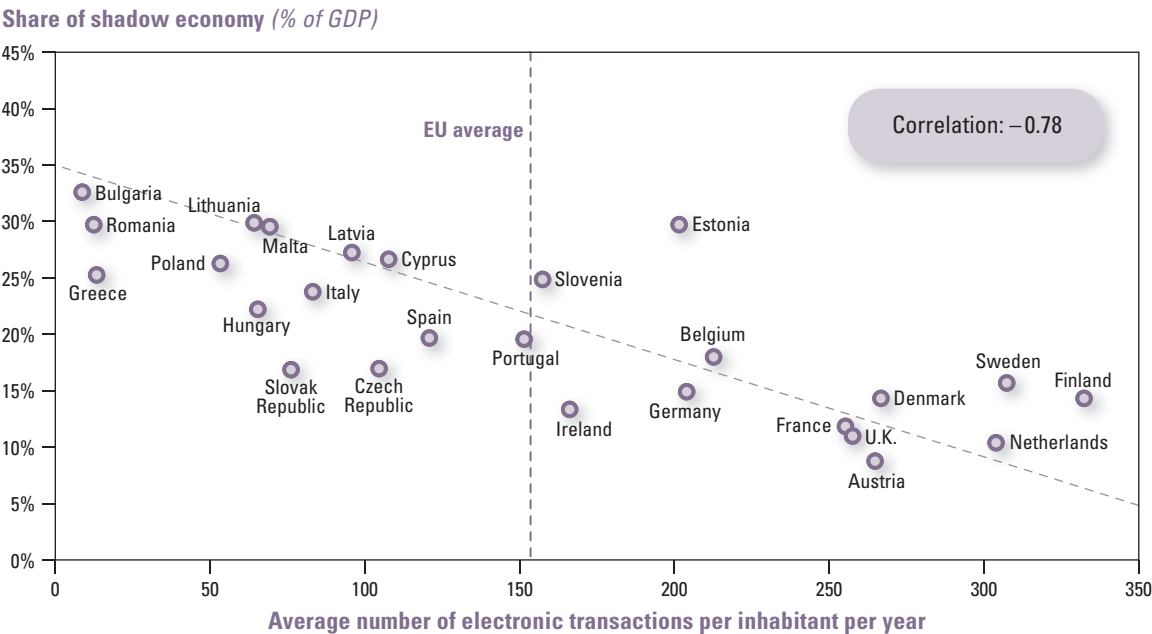
ing. Even fewer measures considered the increased use of electronic payments.

A World of Electronic Payments

Cash is perhaps the most important enabler of the shadow economy, because it’s easy to use and difficult to trace. For example, bar owners or taxi drivers who deal primarily in cash can hide part of their earnings easily from the government. Thus, electronic payment systems make participating in the shadow economy more difficult, as these systems produce documentation of the transactions.

In fact, as shown in figure 2, a strong correlation appears to exist between the prevalence of electronic payments in a country and its shadow economy. Countries with high levels of electronic

Figure 2
Countries with more electronic transactions have smaller shadow economies



Notes: Data is for 2009. Data for Czech Republic is an estimate by Visa Europe.
Sources: European Central Bank, Interbank Card Center, Dr. Friedrich Schneider, Johannes Kepler University of Linz, Austria; A.T. Kearney analysis

payment usage, such as the United Kingdom and the Netherlands, have smaller shadow economies than those with minimal levels of electronic payments, such as Bulgaria and Romania. In his research, Professor Schneider found that increasing electronic payments by 10 percent can lead to a decline in the size of the shadow economy by up to 5 percent. The convenience of electronic payments and heightened public awareness can bring behavior shifts within a considerable share of the population, particularly those who are “unconscious participants” in the shadow economy and receive no benefits from merchants who underreport sales.

In reviewing measures used by countries worldwide to curb shadow transactions, electronic payments produce tangible results. For example, the Mexican government established a fund to subsidize the cost of electronic payment terminals at small shops, leading to a 200 percent rise in terminal penetration and a more than 300 percent increase in POS (point-of-sale) transactions in five years. Colombia and Argentina instituted a sales-tax discount for retail purchases made using electronic payment cards. South Korean tax authorities offer their citizens a lump-sum refund if card usage exceeds 20 percent of individual gross income for credit cards and 25 percent for debit cards. South Korea has seen a phenomenal increase in card usage in the past 20 years, from less than 5 percent of private consumption expenditures in the early 1990s to 25 percent in 2000 and more than 50 percent in 2009.

Europe seems to be waking up to the ways that electronic payments can combat the shadow economy. However, aside from Italy’s Decreto

Bersani, most are limited in scope and primarily depend on strict controls and penalties for enforcement. The most frequent examples include required card terminals in sub-sectors commonly part of the shadow economy, for example, taxis, restaurants and doctors.

More than half of EU member states have banned surcharges on card payments during implementation of the Payment Services Directive. In 2010, Italy introduced compulsory electronic

Revamping the tax and social security systems to make them simpler and, in some cases, cheaper are powerful ways to curtail the shadow economy.

payment for business-to-business transactions of more than €5,000. France and Turkey have similar limits on cash transactions. Greece mandated receipts for corner stores, taxicabs and other traditionally cash-only businesses in 2010, and is planning to require electronic payments for amounts above €1,500.

Positive reinforcement measures developed to encourage behavior by society still are limited. Some countries, including Singapore and the United Kingdom, have begun sending government payments electronically, including payroll checks, tax and fine payments, and procurement contracts. This government commitment to electronic payments has encouraged suppliers to add card terminals, introduced banking to underprivileged

groups, and spurred more card usage among public-sector employees. In Bulgaria, banks and payment providers have joined forces to improve the penetration of electronic payments. E-ticket and e-parking solutions in many countries, such as Austria, Turkey and the United Kingdom, are the first steps toward addressing low-value payments. Many of these initiatives are in the early stages, so success rates are difficult to judge.

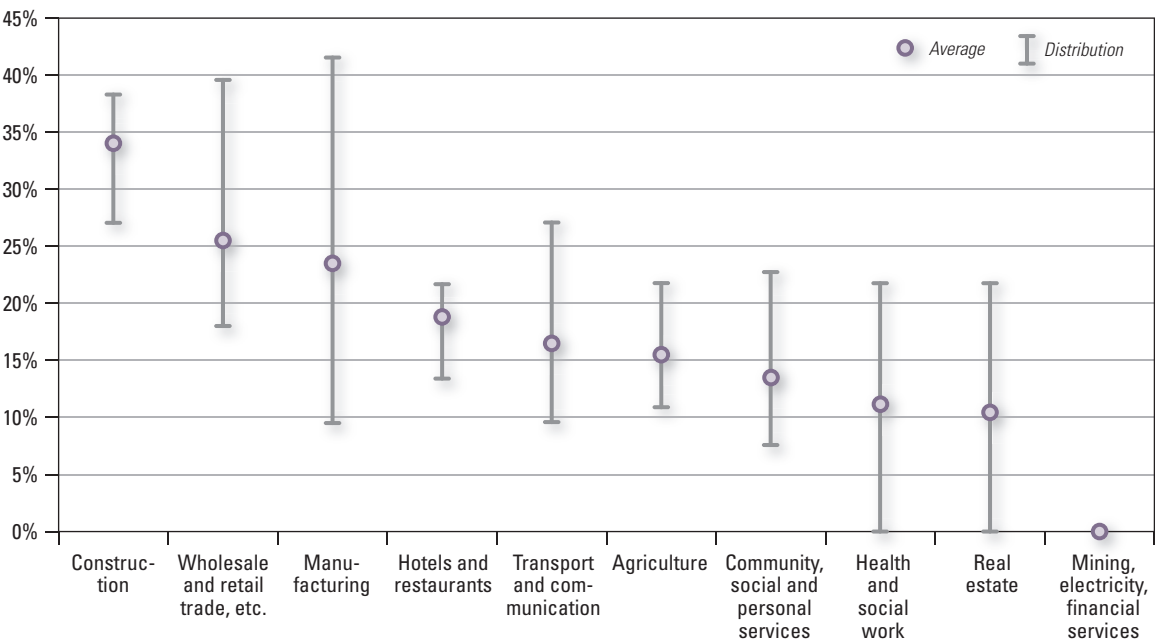
The Benefits of Electronic Payments

The study suggests that the same industries either tend to stay out of the shadow economy or are particularly prone to being part of it. For instance, in the six countries examined, mining, electricity and financial services have the smallest shadow economies (*see figure 3*). That's because govern-

ments highly regulate and oversee them or they rely on regular contracts with customers.

In contrast, construction has the most prevalent shadow economy of any sector, comprising roughly one-third of work in that sector, followed by wholesale and retail, hotels and restaurants, and transportation and communication (*see figure 4 on page 10*). A few factors drive the shadow economy in these businesses. One is a traditionally high level of underreporting, particularly in the construction business, especially when dealing with subcontractors. Another is the large number of small, cash-based transactions, such as a cheap taxi ride, one night at a hotel or a quick meal at a sandwich shop. In each case, the study reveals that small- and medium-sized enterprises in particular are prone to trading largely in cash, in order to evade taxes.

Figure 3
Some sectors show consistently large shadow economies across countries



Note: Examples based on 2009 data for Germany, Italy, Spain, Poland, Romania and Turkey.
Sources: Dr. Friedrich Schneider, Johannes Kepler University of Linz, Austria, Organisation for Economic Co-operation and Development, Eurostat; A.T. Kearney analysis.

Figure 4
 Three sectors were chosen because of the size of their shadow economies and addressability

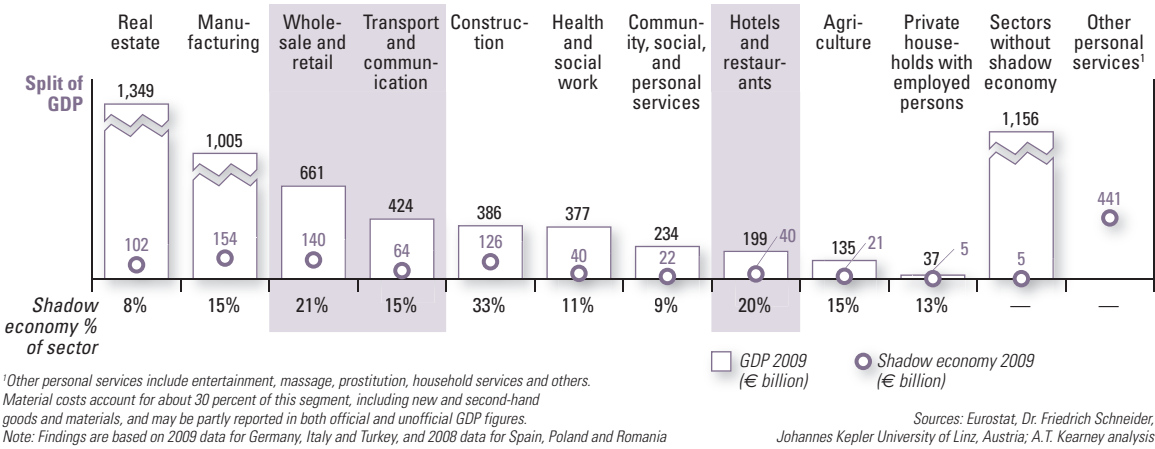
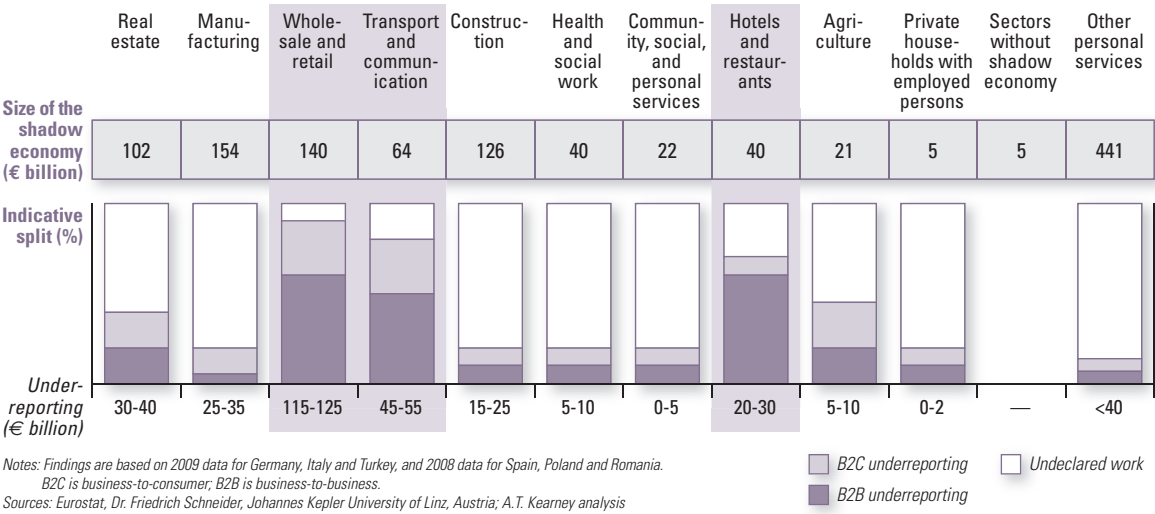


Figure 5
 Three industries represent 20 to 25 percent of the shadow economy



For a more detailed analysis, we selected three industries for a “deep dive”—wholesale and retail, hotels and restaurants, and transportation and communication, which represent an estimated 20 to 25 percent of the shadow economy. We selected these industries because underreporting comprises a large share of the shadow economy, both in business-to-business and business-to-consumer sales (see figure 5). These industries are also wide-ranging. For example, transportation and communication

includes both highly regulated services with a miniscule shadow economy (such as mail, telecom and air travel) and unregulated businesses that deal mostly in cash (such as taxi services).

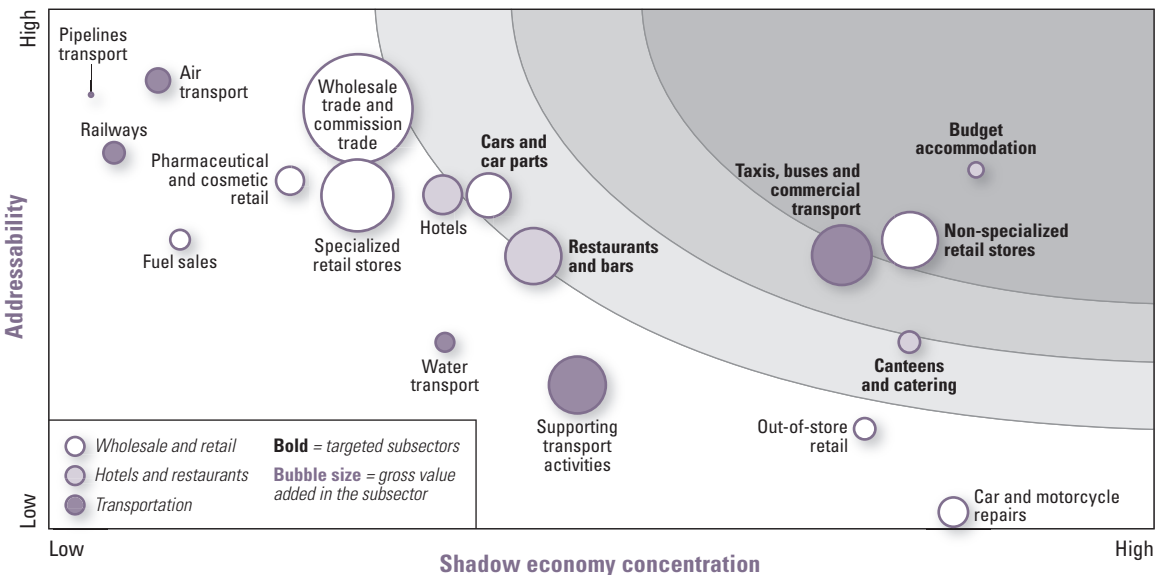
We determined which sectors could benefit most from electronic payments by comparing the size of the shadow economy in that industry to the potential for introducing electronic payment systems. To determine this potential, we took into account such factors as the current prevalence of payment systems and the convenience of using them. We selected sectors that have a high share of underreporting versus undeclared work, and therefore have one-sided benefits that serve as an opportunity to formalize the transactions through electronic payments.

Based on these criteria, we identified several sectors that would benefit most from electronic payments (see figure 6). These sectors include cars

and car parts, non-specialized retail stores, restaurants and bars, catering, and transportation (such as taxis). We found a few others specific to individual countries, such as fuel sales in Turkey and budget hotels in Italy and Spain. By targeting these sectors, governments could address up to 50 percent of the shadow economy in the three industries highlighted in figure 4 and bring businesses and individuals out of the shadow economy, especially in rural areas where cash transactions are prevalent.

Ample reasons exist to implement electronic payment technology, even in small businesses. Electronic payments already are widespread throughout much of society, with credit cards, debit cards and direct deposits representing common and accepted forms of payment. Portable card readers offer instant online transactions. Computer-chip technology allows fast completion

Figure 6
Sectors where electronic payments can pay off



Note: The focus countries for this analysis are Germany, Italy, Spain, Poland and Turkey.

Source: A.T. Kearney analysis

of card payments. Online and mobile banking offer access to up-to-date information about transactions, account balances and payment receipts, as well as speedy payments.

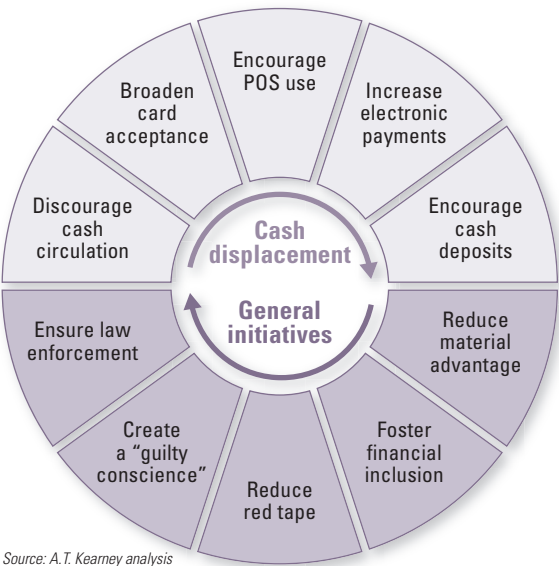
Breaking the Vicious Cycle

Figure 7 illustrates two areas that have emerged for addressing the shadow economy. In the past, general initiatives against the shadow economy have prevailed. These include ensuring law enforcement capabilities, creating a “guilty conscience,” reducing red tape, fostering financial inclusion, and reducing material advantage in the tax and social security burden. The second area, *cash displacement*, is more complex, since it means changing habits and coordinating actions among

many stakeholders, including governments, banks, payment providers and merchants. Planned initiatives must build on one another to ensure improvement. These initiatives must be sequenced logically

Countries where citizens frequently use electronic payments have smaller shadow economies than those that use cash.

Figure 7
How to address the shadow economy



Source: A.T. Kearney analysis

and combined, from creating the infrastructure to guaranteeing its usage.

We’ve identified a few ways to employ electronic payments to encourage cash displacement and help reduce the shadow economy:

Discourage cash circulation. Easy access to cash, particularly with no-fee ATMs (automated teller machines), slows down the transition to electronic transactions. Typically, the absence of ATM fees leads to less inhibited cash withdrawals and subsequently encourages cash payments at the point-of-sale. Although we do not advocate “withdrawal taxes” for ATMs, we do think that not charging fees could be perceived as a clear sign in favour of cash. It is too early to evaluate the impact on payments behaviour of measures, such as the Portugal government’s abolition of ATM fees as of 1 January 2010. Nevertheless, creating more transparency about the true cost of cash can help discourage cash usage and change the common perception that cash is a “free” and efficient payment means (see sidebar: *The Unknown Cost of Cash*).

Broaden card acceptance. Credit and debit card acceptance is not yet a given in Europe. Even countries with a high penetration of POS terminals, such as Portugal or Turkey, have had issues with certain merchant categories (fast food and beauty spas in Portugal) or geographic areas (as is the case in Anatolia in eastern Turkey) that have been slow to adopt. Countries with more limited POS networks can take a first step toward providing customers with non-cash options simply by making it easier to use cards. Industries with a high percentage of low-value payments and a large share of the shadow economy, such as bars and taxis, are good places to begin.

Encourage POS use. The average European makes up to 1,000 payments in a given year, 80 percent of them in cash. In particular, low-value payments (below €15) are almost exclusively paid for with cash. Creating incentives for people who use their cards in these situations, such as adding VAT discounts for card purchases and abolishing surcharges for card payments, are easy measures to change behavior. More sophisticated ways to encourage card use include value-added services at the POS or from the card. Barclaycard's One-Pulse, for example, combines a contactless card for low-value payments, a credit card, and an Oyster card for London transit. In the medium term,

The Unknown Cost of Cash

Cash is the universal means of payment. It's convenient, simple, quick to use and, most assume, free. But is this really the case?

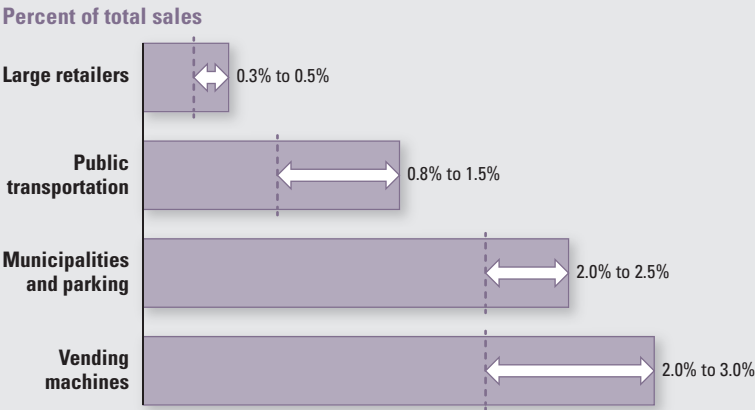
Like all other payment instruments, cash carries a price tag. In fact, cash is actually expensive if you consider cash handling, infrastructure, fraud, errors and the risk of counterfeiting. Depending on the industry, cash can cost anywhere from 0.3 percent of revenues for large retailers to as much as 3 percent of sales for parking lots and vending machines (see figure).

Cash handling is the real burning issue. One in three merchants is dissatisfied with cash handling and security, according to a field study that covered large retailers. Robbery and counterfeit issues are common for gas stations, cafes, fast-food restaurants and taxis. Time for cash handling can be cumbersome at

cinemas, theaters, concert houses and gas stations. These retailers can spend more than an hour daily on managing cash, from preparing registers and transporting cash, to depositing and withdrawing it and having available change.

The costs are by no means negligible, even where unknown. The challenge for decision makers is to create awareness about the true costs of cash among societies and pave the way for more convenient electronic payment solutions.

Figure: Cash can represent up to 3 percent of sales



Sources: Interviews with large merchants; A.T. Kearney analysis

increasing usage will depend on the ability to segment clients based on their card-related behavior and to create campaigns that target increased usage in certain categories.

Increase electronic payments. In any economy, governments are among the largest initiators and recipients of payments. They can serve as role models by adopting electronic payments. Governments have many options, including mandating that salary payments for public sector workers are made to checking accounts, that unemployment benefits or pensions are distributed to pre-paid cards, that taxes and fines are paid online, and that cards or money transfers are used for all public sector purchases. South Korea, for example, is sending all government payments electronically and provides incentives for citizens and business partners to do the same. Between 1998 and 2002, electronic payments helped South Korea increase tax revenues from \$46 billion to \$76 billion. At the same time, South Korea eventually cut costs by 90 percent, saving \$23 million, as the program became more efficient.

Encourage cash deposits. Few measures have been created to encourage depositing cash in

banks, yet countermeasures exist in some countries. The fees that financial institutions in Brazil charge to deposit cash, for example, make it difficult for the country to reduce the amount of cash in circulation, which in turn is a setback to other efforts against the shadow economy. Free cash deposits, the ability to make ATM deposits, and attractive interest rates on balances are steps to encourage cash displacement.

Lining Up for Action

Governments aren't powerless to recoup revenues lost to shadow economies. Public mandates to increase the use of electronic payments are proven ways to reduce the size and scope of a shadow economy. Banks and payment system companies can do their part by exploring commercially viable uses for electronic payments, identifying opportunities for using prepaid cards instead of cash, encouraging small merchants and public officials to use payment systems, and continuing to improve the systems' technology. Electronic payments can help countries increase revenues and reduce cash, the shadow economy's key enabler. Reducing the shadow economy is an achievable task.

Appendix 1

The shadow economy in Europe

Abbreviation	Country	GDP (millions of euros, 2009)	Share of shadow economy	Shadow economy (millions of euros, 2009)
at	Austria	274,321	8.5%	23,235
be	Belgium	339,162	17.8%	60,371
bg	Bulgaria	33,877	32.5%	11,010
cy	Cyprus	16,947	26.5%	4,491
cz	Czech Republic	137,245	16.9%	23,194
dk	Denmark	222,893	14.3%	31,874
ee	Estonia	13,730	29.6%	4,064
fi	Finland	171,315	14.2%	24,327
fr	France	1,907,145	11.6%	221,229
de	Germany	2,409,100	14.6%	351,729
gr	Greece	237,494	25.0%	59,373
hu	Hungary	93,086	23.5%	21,875
ie	Ireland	163,543	13.1%	21,424
it	Italy	1,520,870	22.0%	334,591
lv	Latvia	18,539	27.1%	5,024
lt	Lithuania	26,650	29.6%	7,888
lu	Luxembourg (Grand-Duché)	37,645	8.8%	3,313
mt	Malta	5,720	25.9%	1,482
nl	Netherlands	571,979	10.2%	58,342
pl	Poland	310,075	25.9%	80,309
pt	Portugal	167,633	19.5%	32,688
ro	Romania	115,869	29.4%	34,066
si	Slovenia	34,894	24.6%	8,584
es	Spain	1,051,151	19.5%	204,974
sk	Slovakia	63,332	16.8%	10,640
se	Sweden	292,680	15.4%	45,073
uk	United Kingdom	1,563,186	10.9%	170,387
	Subtotal (EU-27)	11,800,079		1,855,557
tr	Turkey	441,022	28.9%	127,455
hr	Croatia	45,377	30.1%	13,658
no	Norway	275,060	15.3%	42,084
ch	Switzerland	354,681	8.3%	29,438
	Total	12,916,219		2,068,193

Sources: Dr. Friedrich Schneider, Johannes Kepler University of Linz, Austria; A.T. Kearney analysis

Appendix 2 Shadow economy per industry sector in the five focus countries

GERMANY				ITALY			
	GDP (millions of euros, 2009)	Share of shadow economy	Shadow economy (millions of euros, 2009)	GDP (millions of euros, 2009)	Share of shadow economy	Shadow economy (millions of euros, 2009)	
Section A	Agriculture, hunting and forestry	19,259	11%	2,191	26,518	14%	3,587
Section B	Fishing	222	5%	11	1,374	8%	111
Section C	Mining and quarrying	4,828	0%	0	5,409	0%	0
Section D	Manufacturing	460,075	9%	43,617	245,303	18%	44,235
Section E	Electricity, gas and water supply	68,977	0%	0	34,835	0%	0
Section F	Construction	103,697	36%	37,358	95,554	27%	25,847
Section G	Wholesale and retail trade; repair of motor vehicles; personal and household goods	245,028	18%	44,137	166,300	21%	34,487
Section H	Hotels and restaurants	40,583	16%	6,541	60,482	22%	13,088
Section I	Transport, storage and communication	134,905	10%	14,069	110,751	15%	16,976
Section J	Financial intermediation	102,403	0%	0	81,829	0%	0
Section K	Real estate, renting and business activities	647,908	5%	30,713	356,068	9%	32,104
Section L	Public administration and defense; compulsory social security	147,363	0%	0	103,644	0%	0
Section M	Education	112,880	0%	0	75,544	0%	0
Section N	Health and social work	193,337	9%	18,329	93,349	14%	12,625
Section O	Other community, social and personal service activities	119,228	8%	9,043	46,861	10%	4,648
Section P	Private households with employed persons	8,407	11%	956	16,949	13%	2,139
Section Q	Extra-territorial organizations and bodies	-	5%		0	5%	0
	Total	2,409,100		206,964	1,520,870		189,847
	<i>Entertainment, massage, prostitution, household services, and other</i>			<i>144,765</i>			<i>144,745</i>
	Total shadow economy	15%	351,729		22%	334,591	

Sources: Dr. Friedrich Schneider, Johannes Kepler University of Linz, Austria; A.T. Kearney analysis

Appendix 2

Shadow economy per industry sector in the five focus countries

SPAIN				POLAND			
	GDP (millions of euros, 2008)	Share of shadow economy	Shadow economy (millions of euros, 2008)		GDP (millions of euros, 2008)	Share of shadow economy	Shadow economy (millions of euros, 2008)
Section A	Agriculture, hunting and forestry	26,198	12%	3,144	13,503	14%	1,936
Section B	Fishing	1,835	10%	183	46	0%	0
Section C	Mining and quarrying	2,631	0%	0	8,954	0%	0
Section D	Manufacturing	158,745	18%	28,574	67,751	23%	15,540
Section E	Electricity, gas and water supply	23,628	0%	0	11,731	0%	0
Section F	Construction	124,173	32%	39,735	27,615	38%	10,557
Section G	Wholesale and retail trade; repair of motor vehicles; personal and household goods	115,977	20%	23,195	65,385	24%	15,623
Section H	Hotels and restaurants	78,841	21%	16,557	4,473	13%	598
Section I	Transport, storage and communication	72,440	16%	11,590	25,449	10%	2,432
Section J	Financial intermediation	58,391	0%	0	19,047	0%	0
Section K	Real estate, renting and business activities	191,616	10%	19,162	50,203	0%	0
Section L	Public administration and defense; compulsory social security	67,310	0%	0	21,605	0%	0
Section M	Education	52,651	0%	0	17,137	0%	0
Section N	Health and social work	64,385	12%	7,726	13,626	0%	0
Section O	Other community, social and personal service activities	41,031	10%	4,103	13,908	10%	1,329
Section P	Private households with employed persons	8,652	14%	1,211	1,981	14%	284
Section Q	Extra-territorial organizations and bodies	0	6%	0	0	8%	0
	Total	1,088,502		155,181	362,415		48,299
	Entertainment, massage, prostitution, household services, and other			48,369			43,392
	Total shadow economy	19%	203,550		25%	91,691	

Note: For Spain and Poland, data for GDP per sector was not available for 2009

Sources: Dr. Friedrich Schneider, Johannes Kepler University of Linz, Austria; A.T. Kearney analysis

Appendix 2

Shadow economy per industry sector in the five focus countries

TURKEY			
	GDP (millions of euros, 2009)	Share of shadow economy	Shadow economy (millions of euros, 2009)
Section A	38,919	19%	7,327
Section B	1,012	9%	95
Section C	7,251	0%	0
Section D	72,685	28%	20,527
Section E	11,613	0%	0
Section F	18,639	33%	6,141
Section G	52,216	28%	14,746
Section H	12,108	19%	2,280
Section I	64,701	24%	15,227
Section J	22,560	0%	0
Section K	84,309	19%	15,873
Section L	21,065	14%	2,974
Section M	16,207	0%	0
Section N	8,380	9%	789
Section O	8,415	19%	1,584
Section P	942	19%	177
Section Q	0	24%	0
	441,022		87,742
	<i>Entertainment, massage, prostitution, household services, and other</i>		<i>39,713</i>
	Total shadow economy	29%	127,455

Sources: Dr. Friedrich Schneider, Johannes Kepler University of Linz, Austria; A.T. Kearney analysis

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