



The Shadow Economy in Europe, 2011

Using electronic payment systems to combat the shadow economy





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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 €2.2 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 a lower 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, our estimates put it at about €2.2 trillion in Europe in 2011.¹ This is 5 percent higher than the €2.1 trillion in 2007, and a full rebound from the shadow economy's pre-crisis size. 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

¹ Friedrich Schneider. "Size and Development of the Shadow Economy of 31 European Countries and 5 other OECD Countries from 2003 to 2011," September 2011 (<http://www.econ.jku.at/members/Schneider/files/publications/2011/ShadEcon31.pdf>). The calculation is for 2011 and encompasses the 27 countries of the European Union plus Croatia, Norway, Switzerland, and Turkey, and OECD members Australia, Canada, Japan, New Zealand, and the United States. The 2011 GDP estimates are taken from Eurostat.

most from the use of electronic payment systems to reduce the size and impact of the shadow economy (*see sidebar: About the Study*).

The study, first completed in 2008, was updated in 2010 and 2011 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,

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 underreporting.

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.

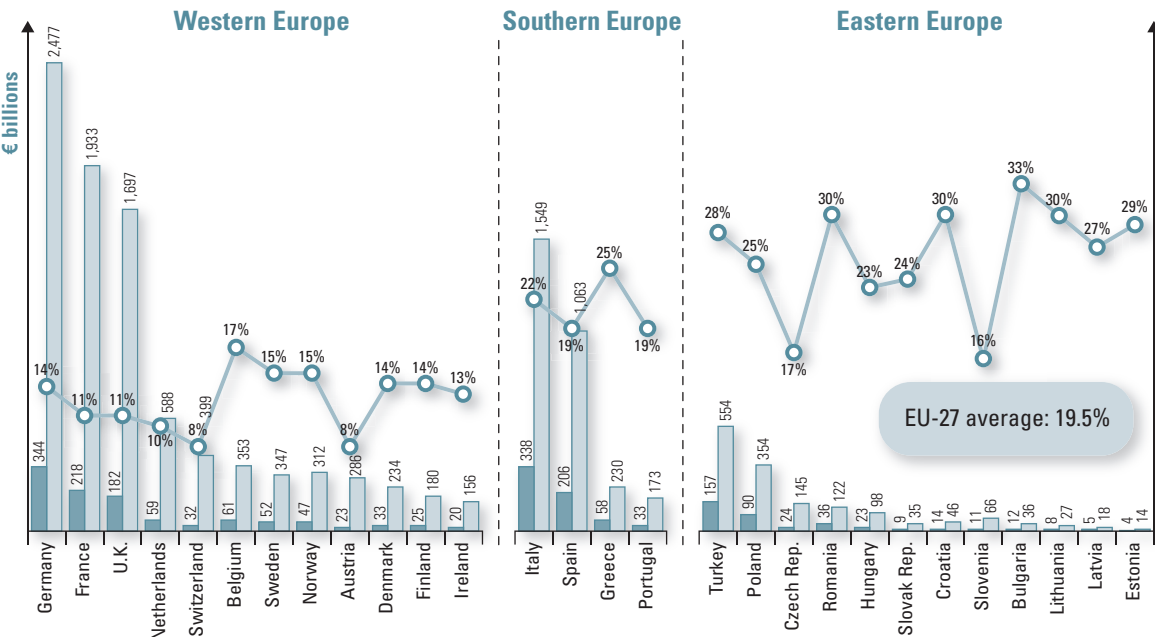
such as drug dealing, smuggling, money laundering or embezzlement, or household enterprises that, by law, don't need to be registered with the government. Figure 1 shows the extent of the shadow economy in the European Union by size and percentage of GDP. Germany, Italy and France account for about 40 percent 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 €553 billion in 2010, has a shadow economy of about €156 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 underreporting, 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 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

Figure 1
The shadow economy in relation to total GDP



Notes: Data for EU-27 (no shadow economy data on Cyprus, Luxembourg or Malta), plus Norway, Switzerland and EU candidate countries in 2010. 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.

his services at a private household without issuing a receipt or declaring the income.

The shadow economy reached its all-time high of €2.2 trillion in 2007. Although it declined because of the economic and financial crisis—slightly in 2008 and more significantly in 2009—the shadow economy has recovered and is rising again. Governments indicate that the past two years have brought setbacks in their efforts to rein in the shadow economy, as unemployment and stagnating living standards have reduced compliance and created more incentives to engage in shadow activities. Recent hikes and planned increases in value added tax (VAT), personal income tax, social security contributions, and corporate profit tax have brought the shadow economy back to pre-crisis levels. The only positive development is that the shadow economy has grown at a slower rate than the GDP. However, further increases are likely in 2012, especially in light of recent economic turmoil and concerns about a possible double-dip recession.

The research for this paper breaks down the structure, scope and effects of the shadow economy in Europe. 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 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" by not paying the full taxes and, thus, boosting the available personal income 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 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.³

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.⁴

For this 2011 update, 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 built on a broad database of more than 150 measures from around the world, including more than 120 from Europe.⁵

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

³ 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.

⁴ Interviews took place in September 2008 by telephone and in person.

⁵ Eurofound, 2009. “Measures to tackle undeclared work in the European Union.” Dublin: European Foundation for the Improvement of Living and Working Conditions.

of enforcement measures falls under two umbrellas, negative and positive.⁶

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.

In 2011, Spain's government launched a campaign against the shadow economy. As part of broader measures, parliament approved a law that sharply increases fines for social security transgression. To highlight enforcement of the measure, the Spanish government publicized in the media the fines it imposed.

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. Italy followed in 2011 with a message aimed at emphasizing the importance of tax revenue for social life: "If everyone pays their tax, tax repays everyone." The results were promising throughout the campaign, but long-term changes in behavior

⁶ *European Foundation for the Improvement of Living and Working Conditions.*

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 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 underreporting. 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 on the following page, 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 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

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

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.

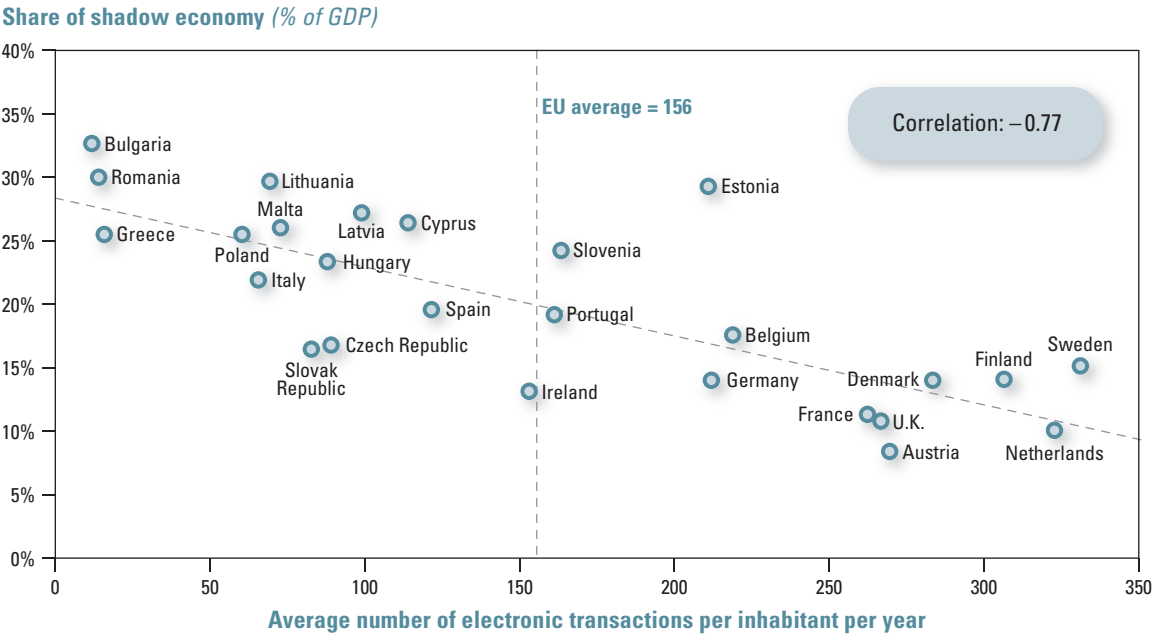
Europe seems to be waking up to the ways that electronic payments can combat the shadow economy. However, aside from Italy's Decreto Bersani, most are limited in scope and primarily depend on strict controls and penalties for enforcement. The most frequent examples include mandatory card terminals in sub-sectors commonly part of the shadow economy, for example, taxis, restaurants and doctors.

More than 10 EU member states have banned surcharges on card payments during implementation of the Payment Services Directive. In 2010, Italy introduced compulsory electronic payment for business-to-business transactions of more

than €5,000. France and Turkey have similar limits on cash transactions, and Bulgaria followed suit in 2010 with a law limiting cash payments at €7,500. 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 as of January 2012.

Positive reinforcement measures developed to encourage behavior by society still are limited, but increasing since we first published this report in 2008. Visa Europe recently launched a subsidized terminalization fund to increase POS penetration among small- and medium-sized merchants in traditionally cash-driven industries. First reports show impressive results. Some countries, including Singapore and the United Kingdom, have begun sending government payments electronically,

Figure 2
Countries with more electronic transactions have smaller shadow economies



Notes: Data is for 2010. No data is available for Luxembourg.
Sources: European Central Bank, Interbank Card Center, Dr. Friedrich Schneider, Johannes Kepler University of Linz, Austria; A.T. Kearney analysis

including payroll checks, tax and fine payments, and procurement contracts. Romania recently introduced a system for face-to-face and online acceptance of card payments, with close to 180 municipalities participating since 2009. In April 2011, Romania's government took a next step in this direction by launching a national tax payment portal, with all municipalities mandated to enroll within two years to accept card payments. 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,

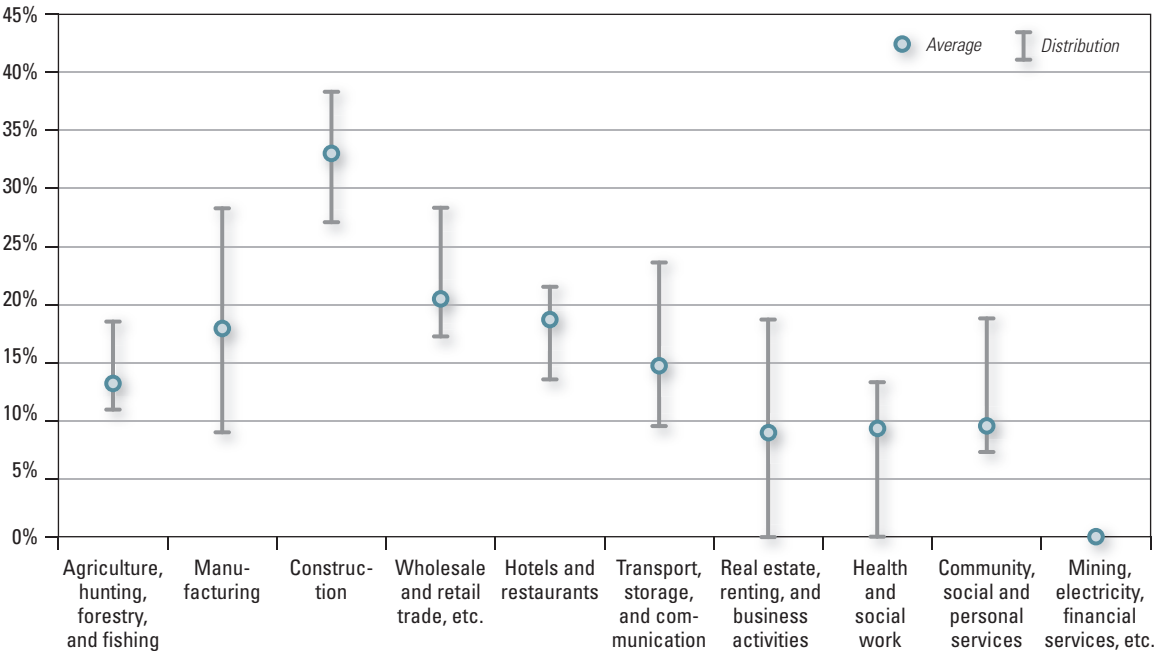
are the first steps toward addressing the vast potential of low-value payments. Many of these initiatives are in the early stages, so success rates are difficult to judge.

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 governments 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

Figure 3
Some sectors show consistently large shadow economies across countries



Note: Examples based on 2010 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

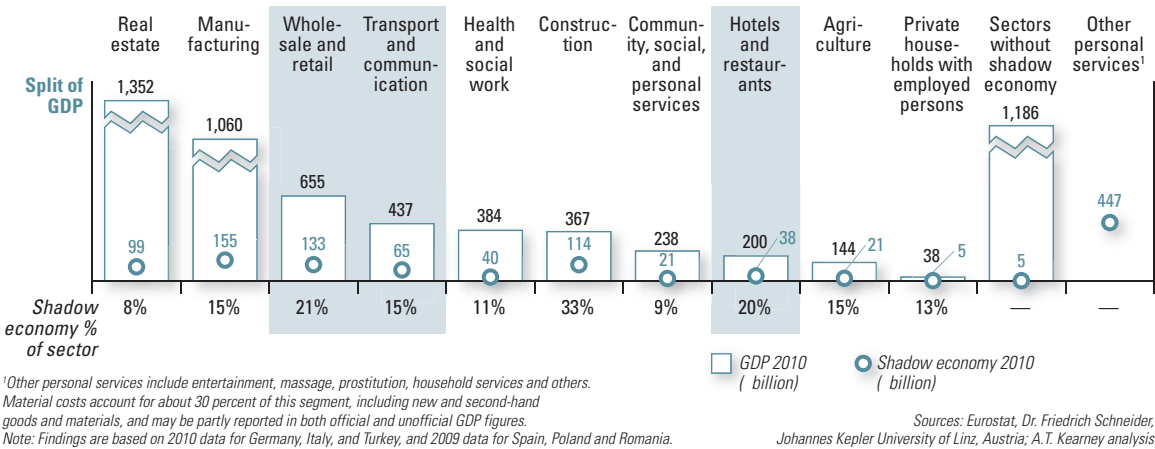
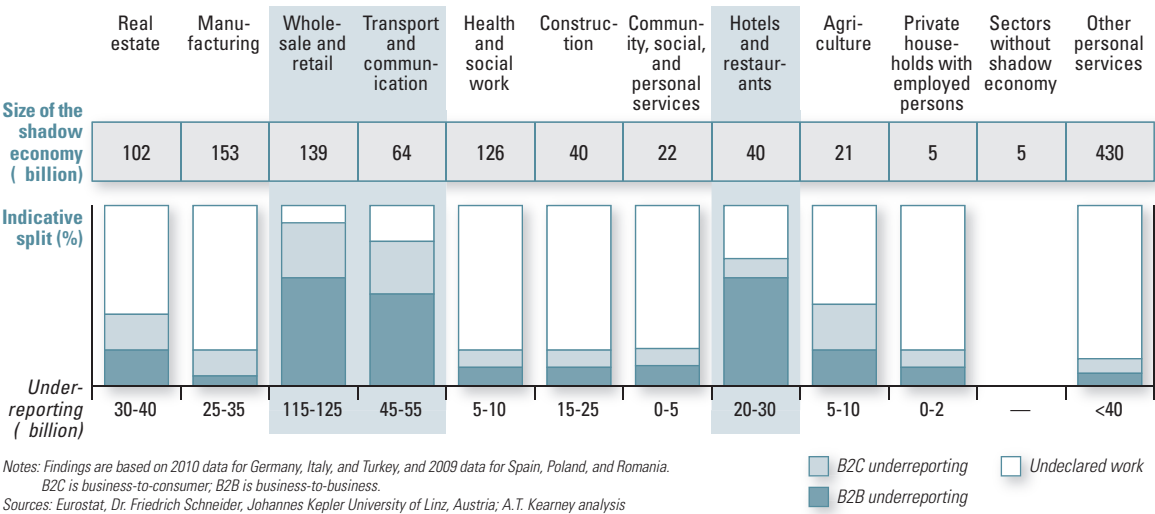


Figure 5
 Three industries represent 20 to 25 percent of the shadow economy



restaurants, and transportation and communication (see figure 4). 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.

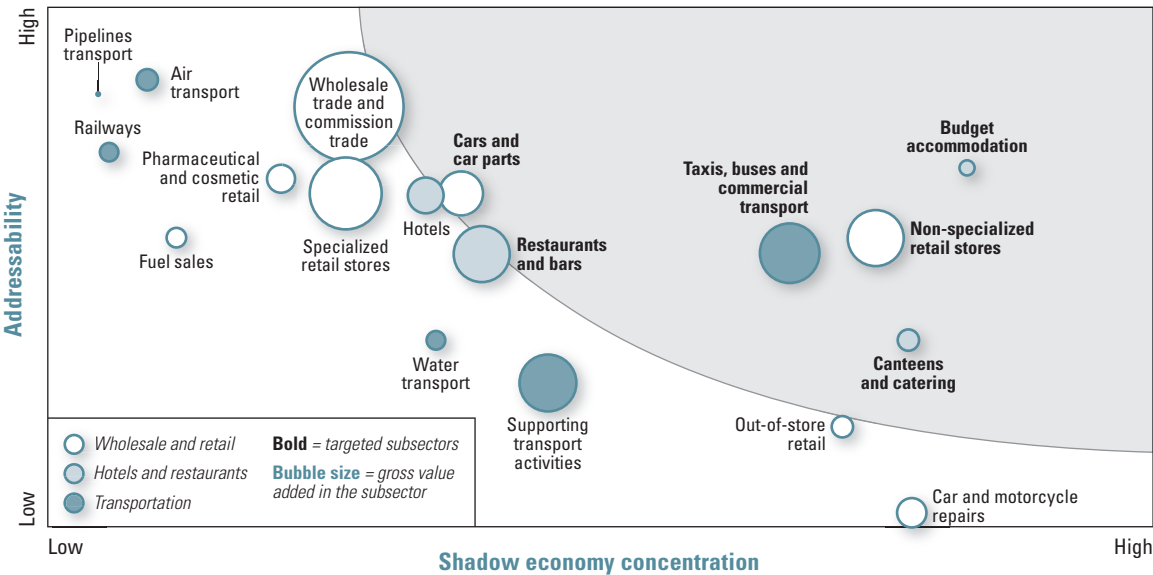
For a more detailed analysis, we selected three industries for a “deep dive”—wholesale and retail, hotels and restaurants, and transportation and communication, which represent an estimated 17 to 28 percent of the shadow economy. We selected these industries because underreporting comprises a large share 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.

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

Ample reasons exist to implement electronic payment technology, even in small businesses. Electronic payments already are widespread through-out 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 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.

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

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

Breaking the Vicious Cycle

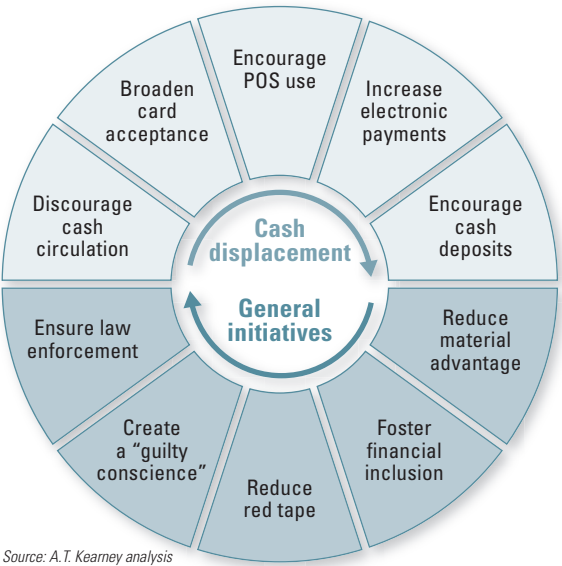
Figure 7 illustrates two areas that have emerged for addressing the shadow economy. In the past, general initiatives against the shadow economy have prevailed. These include ensuring

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 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

Figure 7
How to address the shadow economy



Source: A.T. Kearney analysis

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.

The Visa Europe POS terminal initiative in Poland achieved an increase of more than 50,000 terminals (or 20 percent of the current POS base) in less than two years. Beyond covering the entire country in a balanced way and focusing on small- and medium-sized merchants, this initiative increased the number of terminals in industries typically prone to the shadow economy. Close to 75 percent of the new terminals were in retailing, hotels and restaurants, and travel and transportation.

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?

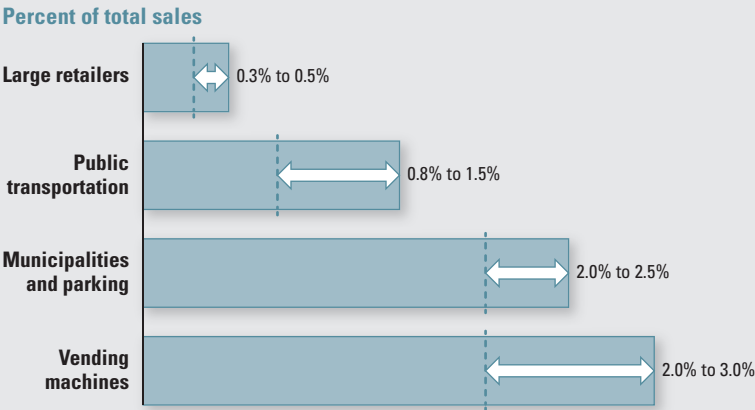
Like all other payment instruments, cash carries a price tag. In fact, cash is actually expensive if you consider cash handling, infrastructure, fraud, errors and the risk of counterfeiting. Depending on the industry, cash can cost anywhere from 0.3 percent of revenues for large retailers to as much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

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, 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.

The shadow economy in Europe

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, 2010)	Share of shadow economy	Shadow economy (millions of euros, 2010)	GDP (millions of euros, 2010)	Share of shadow economy	Shadow economy (millions of euros, 2010)	
Section A	21,246	10.8%	2,301	27,983	13.4%	3,750	
Section B	245	4.5%	11	1,683	8.0%	135	
Section C	5,514	0.0%	0	5,301	0.0%	0	
Section D	511,593	9.0%	46,176	261,800	17.9%	46,781	
Section E	75,810	0.0%	0	34,893	0.0%	0	
Section F	102,034	34.3%	34,996	93,106	26.8%	24,956	
Section G	247,269	17.1%	42,405	161,408	20.5%	33,168	
Section H	40,675	15.3%	6,241	60,020	21.4%	12,870	
Section I	137,391	9.9%	13,641	113,023	15.2%	17,166	
Section J	102,704	0.0%	0	76,619	0.0%	0	
Section K	649,815	4.5%	29,326	366,199	8.9%	32,718	
Section L	147,891	0.0%	0	106,833	0.0%	0	
Section M	113,131	0.0%	0	74,989	0.0%	0	
Section N	193,766	9.0%	17,489	97,292	13.4%	13,039	
Section O	119,492	7.2%	8,628	50,072	9.8%	4,921	
Section P	8,426	10.8%	913	17,596	12.5%	2,201	
Section Q	0	4.5%	0	0	5.4%	0	
	2,476,802		202,127	1,548,816		191,704	
			142,147			145,937	
		13.9%	344,274		21.8%	337,642	
Total shadow economy							

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, 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	26,132	11.0%	2,871	11,261	14.3%	1,614
Section B	Fishing	1,789	9.2%	164	44	0.0%	0
Section C	Mining and quarrying	1,929	0.0%	0	6,738	0.0%	0
Section D	Manufacturing	133,528	16.5%	22,004	57,630	22.9%	13,219
Section E	Electricity, gas and water supply	26,041	0.0%	0	11,408	0.0%	0
Section F	Construction	113,516	29.3%	33,255	22,975	38.2%	8,783
Section G	Wholesale and retail trade; repair of motor vehicles; personal and household goods	109,511	18.3%	20,051	56,637	23.9%	13,532
Section H	Hotels and restaurants	79,141	19.2%	15,215	3,754	13.4%	502
Section I	Transport, storage and communication	70,955	14.6%	10,393	23,042	9.6%	2,202
Section J	Financial intermediation	69,373	0.0%	0	11,884	0.0%	0
Section K	Real estate, renting and business activities	179,105	9.2%	16,397	44,841	0.0%	0
Section L	Public administration and defense; compulsory social security	69,924	0.0%	0	18,804	0.0%	0
Section M	Education	54,770	0.0%	0	14,869	0.0%	0
Section N	Health and social work	68,223	11.0%	7,495	11,831	0.0%	0
Section O	Other community, social and personal service activities	41,404	9.2%	3,790	12,922	9.6%	1,235
Section P	Private households with employed persons	8,575	12.8%	1,099	1,779	14.3%	255
Section Q	Extra-territorial organizations and bodies	0	5.5%	0		7.6%	0
	Total	1,053,914		132,735	310,418		41,343
	Entertainment, massage, prostitution, household services, and other			72,778			39,055
	Total shadow economy		19.5%	205,513		25.9%	80,398

Note: For Spain and Poland, data for GDP per sector was not available for 2010

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, 2010)	Share of shadow economy	Shadow economy (millions of euros, 2010)
Section A	50,753	18.8%	9,556
Section B	1,288	9.4%	121
Section C	8,852	0.0%	0
Section D	95,748	28.2%	27,040
Section E	14,281	0.0%	0
Section F	25,369	32.9%	8,358
Section G	69,533	28.2%	19,637
Section H	14,350	18.8%	2,702
Section I	82,506	23.5%	19,417
Section J	23,300	0.0%	0
Section K	99,467	18.8%	18,727
Section L	25,811	14.1%	3,645
Section M	20,634	0.0%	0
Section N	10,057	9.4%	947
Section O	10,383	18.8%	1,955
Section P	1,175	18.8%	221
Section Q	0	23.5%	0
	553,507		112,325
	Entertainment, massage, prostitution, household services, and other		44,317
	Total shadow economy	28.3%	156,642

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

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