

Perspectives on Accelerating Global Payment Acceptance



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Foreword

The past two decades have seen a shift away from cash and other paper-based methods toward electronic payments in many markets around the world. This trend reflects the widely held belief that electronic forms of payment function at lower costs and provide more benefits to society than paper-based methods, including improving financial inclusion and enhancing the welfare of individuals, merchants and the economy as a whole.

However, most of the recent surveys that have tried to measure the relative penetration of various retail payment methods reveal that the growth of electronic payments is occurring quite unevenly across different countries and regions. In developed markets such as the United States, Canada, Western Europe and Australia, use of cash and checks is rapidly diminishing as card and other electronic forms of payment become preferred means of conducting retail transactions—though cash remains popular for certain types of transactions, such as small-value purchases. Electronic payments remain in their infancy, however, in many developing markets, with cash dominant over other forms of payment.

One of the key obstacles to accelerating the shift toward electronic payments in many of these markets is the absence of appropriate acceptance infrastructure. This report explores the nature of this impediment and identifies opportunities and policy approaches to overcoming the barriers to electronic payment acceptance in order to expand access to electronic payments globally while maintaining the appropriate investment in programs that incent customer usage and financial institution issuance of electronic payment methods. The report consists of three sections.

<p>1</p> <p>Overview of the Payments Ecosystem Reviews independent research that shows the relative costs and benefits of moving from cash to electronic forms of payment and lays out the global landscape of electronic payments acceptance.</p>	<p>2</p> <p>Electronic Payments are Slowed by Acceptance Challenges Discusses the barriers that slow the growth of electronic payments acceptance.</p>	<p>3</p> <p>Opportunities to Accelerate Electronic Payments Acceptance Explores the various initiatives that are available to expand payment acceptance and includes global case studies. This section also identifies the enablers for success of these programs.</p>
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This report is intended to encourage dialogue with key industry stakeholders on aligning efforts to develop the infrastructure and policy tools necessary for markets to realize the economic benefits that can be achieved through greater use of electronic payments.

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Across the globe, electronic payments continue on a march toward displacing paper-based methods for conducting consumer payment transactions with merchants. Several countries are well on their way toward becoming “cashless societies,” while others are making strong advances toward reducing their dependence on cash in at least some of the key segments of consumer spending. Despite this overall trend, there is still widespread reliance on cash in many countries, particularly in emerging markets. On a worldwide basis, an estimated 43 percent of consumer payment expenditure is still made with cash today.¹

The slow pace with which some countries embrace electronic payments is occurring in spite of the compelling benefits of electronic payments, including the growing body of evidence that shifting consumer spending to electronic payments can significantly increase overall economic output and social welfare. Studies conducted by central banks, government agencies and private researchers almost universally support the notion that electronic payments help eliminate transaction friction, lower overall social costs and drive economic activity out of the “shadow” economy, thereby boosting government revenue streams. This has also been confirmed in numerous countries where policymakers have implemented programs to incent consumers and merchants to shift spending to electronic payments.

One of the principal reasons for countries not making progress toward greater adoption of electronic payments is the enormous effort that is required to develop meaningful merchant acceptance. Even in markets today with high consumer adoption or ready access to payment cards, the absence of available acceptance locations prevents greater usage of and spending via payment cards. Overcoming barriers to developing acceptance is thus a key imperative for countries seeking to further expand electronic payments. It is also important to keep in mind the need to balance acceptance initiatives with cardholder-usage incentives to realize maximum growth. The acceptance barriers, outlined in the table below, include insufficient infrastructure, inadequate and misaligned economic incentives for stakeholders and regulatory obstacles.

¹ Euromonitor, *Passport*, 2015.

BARRIER		KEY ISSUES
Infrastructure	Inadequate physical infrastructure and data resources	<ul style="list-style-type: none"> • Inadequate or high-cost telecom/online infrastructure • Limited reach of banking networks for traditional merchant servicing • Insufficient business and financial information for underwriting
Economic	Lack of appropriate incentives or limited return on investments	<ul style="list-style-type: none"> • Low acquirer interest in developing business beyond Tier 1 cities • Cash anonymity and ability to evade taxation • Unique segment traits (e.g., low transaction sizes, low margins) that resist standard pricing structures • Inability of merchants to discern benefits of electronic payments
Regulatory / Government	Government policy and regulations that impede acceptance growth	<ul style="list-style-type: none"> • Regulation of acquirer pricing that limits investment and profitability • Overly restrictive or outdated regulations regarding new channels/alternate payments • Inconsistent policies that lack counterbalancing consumer incentives when targeting shadow economy

Policy Levers

As the social and economic benefits of electronic payments become increasingly evident, governments and international organizations have made financial inclusion a priority. Most policymakers agree that expanding access to transaction accounts is a critical element of financial-sector development and that a robust electronic payments ecosystem propels financial inclusion. Since the market for electronic payment services is two-sided, the value of payment accounts for consumers is directly correlated to the number of merchants equipped to accept payments. If the acceptance market is underpenetrated, the usage of accounts will be constrained whether or not consumers have access to accounts. The challenge for the public sector is to foster progress on both sides of the ecosystem without disrupting the balance. The most successful public policies for increasing acceptance tend to focus on removing impediments to innovation, providing a level playing field and investing in infrastructure.

To achieve these goals and overcome barriers, a number of program or policy “levers” have been employed in various global markets over the past several years. These levers can be grouped into three broad themes: Regulatory and Market Support, Increased Private Investment Outlays and Introduction of New Technologies and Channels.

The appropriate timing and effectiveness of employing these policy levers depends on a number of important factors, including a market's overall level of electronic-payments penetration. In order to articulate and recommend specific policy levers, we have classified markets based on their overall levels of electronic-payments usage and acceptance as follows:

- **Cash-centric**
Limited consumer adoption and low levels of acceptance
- **Transition (Limited Acceptance)**
High payment volumes but limited acceptance
- **Transition (Limited Consumer Adoption)**
High level of acceptance but low or limited consumer adoption
- **Electronic**
High payment volumes with widespread acceptance

Specific distinction across these four market stages is important as we consider the success potential of particular policy levers, since some are more likely to succeed under certain types of market-enabled conditions than others.

A. Regulatory and Market Support

Governments around the world increasingly understand the value of electronic payments and have actively been implementing policies that promote card activation, usage and acceptance. These policy approaches vary considerably across markets but typically involve one of the following types of programs.

1. Merchant incentives

One approach for promoting electronic payment acceptance is government-funded merchant incentives, which include subsidies for point-of-sale (POS) terminals and tax reductions, such as value-added tax (VAT) credits, for transactions using electronic means of payment. Merchant incentive programs tend to be successful in Cash-centric or Transition (Limited Acceptance) markets that have limited payment infrastructure but possess a card base of sufficient scale. Policies that focus on small and medium enterprises (SMEs) or specific geographies are usually well suited to developing a broader network of acceptance. In countries with an established base of POS terminals but low electronic payment usage, volume-based incentives aimed at promoting general consumer usage have proven to be more effective.

2. Regulation of market economics

Some governments have sought to reduce the merchant cost of accepting electronic payments by directly regulating the market-established acceptance costs paid by merchants or acquirers. This has typically occurred in more established markets where the need to balance acceptance and usage incentives is not as great; in other markets, regulation may have led to reduced incentives for acquirers to sign new merchants. Such approaches usually involve capping or regulating the Merchant Discount Rate (MDR)² that merchants pay to acquirers or the Interchange Reimbursement Fee (IRF) that acquirers pay to issuers. Also, some governments stepped in to regulate the ability of payment

² In some markets, the MDR is known as the Merchant Service Fee (MSF).

networks to establish network rules on topics such as merchant surcharges or the setting of interchange fees. While these regulations can initially appear successful at lowering certain costs in the short term, they do create imbalances, reducing the economic motivation for acquirers to extend services to new merchants and curtailing new investment in innovation programs. Regulation of network policies and structures can also lead to other forms of market distortions, such as reduced card issuance or consumer usage.

3. Consumer incentives

Incentives for consumers are typically tied to their usage of electronic payments. These range from VAT rebates or income tax deductions based upon volume of payment-card spending to participation in lottery promotions based upon usage. Consumer-facing incentives have worked best in markets where cash makes up a significant portion of personal consumption spend or where strong shadow economies exist, and they are often deployed to bolster spend or close certain acceptance gaps. Typically, broad programs such as lotteries may work best for countries in the early stages of electronic payments evolution (Cash-centric markets) to spur everyday usage and bring electronic payments to mainstream consumer spend.

4. Disincentives for cash

Deploying disincentives for cash is a policy approach that explicitly seeks to make cash more expensive to the consumer or merchant. This can come in the form of taxes or even bans on cash withdrawals or deposits above a certain size. This policy may work best in markets where a significant shadow economy underpins merchants' preference for cash. However, as a standalone measure, it is generally less effective and should be combined with other approaches within a holistic framework.

5. Government adoption of electronic payments

A key element for governments to improve electronic payments acceptance is to lead by example through a comprehensive electronic government program that includes both disbursement of funds with electronic payments and acceptance across the range of services provided by government agencies. With regard to acceptance, the transit segment offers a very visible and habit-forming opportunity, while electronic tax payments also support overall government transparency and accountability. In terms of disbursement, social welfare programs have been a very tangible means of growing acceptance, as well as consumer usage, of electronic payments, since merchants must accept the cards in order to participate in the program. These programs have had the highest incremental impact in markets where payment cards reach scale but acceptance and consumer electronic payment lags behind, namely Cash-centric and Transition (Limited Acceptance) markets.

B. Increased Private Investment Opportunities

Increasing private sector collaboration and investment in new acceptance is gaining traction as a non-governmental approach to promoting electronic payments in many markets. This approach creates a shared vision and plans for collective success in the market across a range of stakeholders and also

facilitates market alignment on solutions to address systemic issues facing the industry.

1. Issuer-funded investments for acceptance

Commonly known as Acceptance Development Funds, these programs require that card issuers contribute funds to projects and infrastructure that directly support payment acceptance. Examples include direct terminal subsidies and support to develop new technologies and market education. These funds require a strong governance framework, a sufficiently large issuance base of cards to ensure attractive financial returns for the issuers, and clear gaps in acceptance that support specific and measurable targets for the program's investments. These funds have found success primarily in Transition (Limited Acceptance) and Electronic markets.

2. Specific merchant segment initiatives

To boost acceptance in select segments, payment networks often employ targeted segment-specific initiatives, such as reduced interchange fees that lower the acquirer and merchant cost of accepting payments in these segments. Once acceptance and usage is clearly established in the segment, fees can be readjusted to restore economic balance across the network. Typically, these programs are tailored to the needs of the merchant segment, including changes to operating rules or deployments of technology that provide an enhanced consumer experience, such as "No Signature Required" programs and contactless terminals. There are also requirements around performance levels, such as fraud and chargeback ratios, which must be met. This lever has been most successful in markets where gaps in acceptance exist despite sufficient scale in card issuance. Additionally, these types of programs have successfully facilitated the spread of new technologies, such as contactless acceptance in Electronic markets.

C. New Technologies and Channels

The third category of opportunities for promoting electronic payment acceptance is the introduction of new technologies and business channels. New technologies that enter the market can bring additional value to merchants, create a seamless customer experience and generate faster consumer adoption, all of which often lead to accelerated acceptance growth.

1. New platforms for payment and acceptance

Technology is transforming payments. It is accelerating the development and commercialization of new platforms for payment acceptance and making the notion of "invisible payments" possible within electronic commerce. New modes of access and omnichannel, such as mobile payments and the provisioning of "card-on-file" accounts, are emerging and providing consumers with easier ways to pay. On the acceptance side, new technologies, such as wireless networks and mobile POS (mPOS) devices, are disrupting the traditional POS terminal. The growth of new payment facilitator networks³ is reshaping the acquirer distribution model by targeting new, under-penetrated commerce segments with an

³ Payment facilitators are payment companies that help extend electronic payment acceptance to small merchants.

efficient commercial framework, easing the way for new acceptance points. This lever is relevant to all market categories, since technological advancements can enable leap-frogging of existing legacy infrastructure barriers and usher in a new paradigm to accelerate merchant acceptance.

2. Enhancing and securing the customer experience

Advancements in technology also make it easier to enhance the customer commerce experience while maintaining a highly secure payment system. New technologies are removing friction from payments, and new business models are changing how consumers and merchants interact. These developments are being supported by enhancements in risk management and security such as EMV chips, tokenization and biometric authentication, which are critical to protecting consumer information and easing consumer concern about the security of these payments. This lever is critical in all markets—from basic, customer-facing programs that increase confidence in payment systems in Cash-centric markets to new consumer experiences paired with back-end enhancements that support innovative developments in Electronic markets. It is imperative to enlist governments and industry participants in fostering “responsible innovation” —markets need flexibility to pilot different technologies to determine which one appeals most to consumers and merchants, and stakeholders must be willing and able to proactively commit resources to anticipate and manage emerging risks.

With an estimated \$21 trillion in annual purchases still conducted using cash and nearly two billion adults without access to a financial payment account,⁴ there is global opportunity to realize significant additional benefits from electronic payments. A collaborative approach between banks, regulators and other key stakeholders has the unique opportunity to develop sustainable acceptance that can enhance and fast-track the benefits of electronic payments. The overall positive economic consequences of expanding access and growing acceptance infrastructure are likely to accelerate the economic growth trajectory of countries globally.

⁴ Euromonitor, *Passport*, 2015; Bank of International Settlement and World Bank Group, 2015.

Table A

Summary of Recommended Policy
Lever Applicability by Market Type

		Cash-centric	Transition		Electronic
			Limited Acceptance	Limited Consumer Adoption	
<i>Illustrative Markets</i>		<i>Egypt Myanmar Guatemala</i>	<i>UAE Indonesia Uruguay</i>	<i>Greece Japan</i>	<i>Israel Hong Kong Canada</i>
Policy Levers	A. Regulatory and Market Support				
	Merchant incentives	●	●		
	Consumer incentives	●	●	●	●
	Disincentives for cash	●		●	
	Government adoption of electronic payments	●	●		
	B. Increased Investment Opportunities				
	Issuer-funded investments for acceptance		●		●
	Specific merchant segment initiatives		●		●
	C. New Technologies & Channels				
	New platforms for payment and acceptance	●	●	●	●
	Enhancing and securing the customer experience	●	●	●	●

1

Overview of the Payments Ecosystem

Review the benefits of electronic payments and understand the global acceptance landscape.

Cash remains the prevailing medium of exchange in most parts of the world, despite the accelerating pace of electronic payments innovation and significant strides toward increasing merchant acceptance. Globally, a significant portion of personal consumer expenditure (PCE) continues to be made with cash, while advancements toward ubiquity of electronic payments acceptance are occurring at varying rates across different countries.

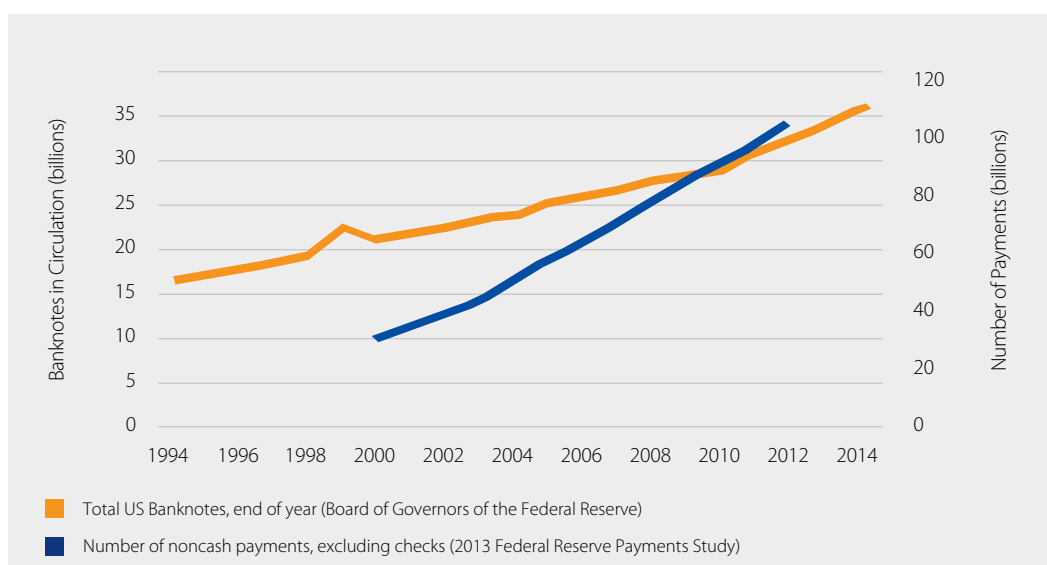
A. Persistence of Cash

Among governments and consumers alike, there is an increasing awareness of the benefits of electronic payments, reflected in the fact that the volume of electronic payments has continued to increase globally. However, an estimated \$21 trillion, or 43 percent, of consumer payment transactions are still conducted with cash,⁵ and an estimated 357 billion banknotes are in circulation, with about 150 billion notes being printed every year to replace those taken out of circulation.⁶ Without a doubt, cash continues to persist as a means of exchanging value.

Even within markets that have embraced electronic payments, cash continues to play a significant role. According to the United States Federal Reserve, \$1.38 trillion of United States currency was in circulation as of August 2015—and 36 billion notes were in circulation at the end of 2014. The number of notes has more than doubled since 1994, despite the significant growth of noncash payments, excluding checks, during the same period (see Figure 1). While a significant portion of

FIGURE 1

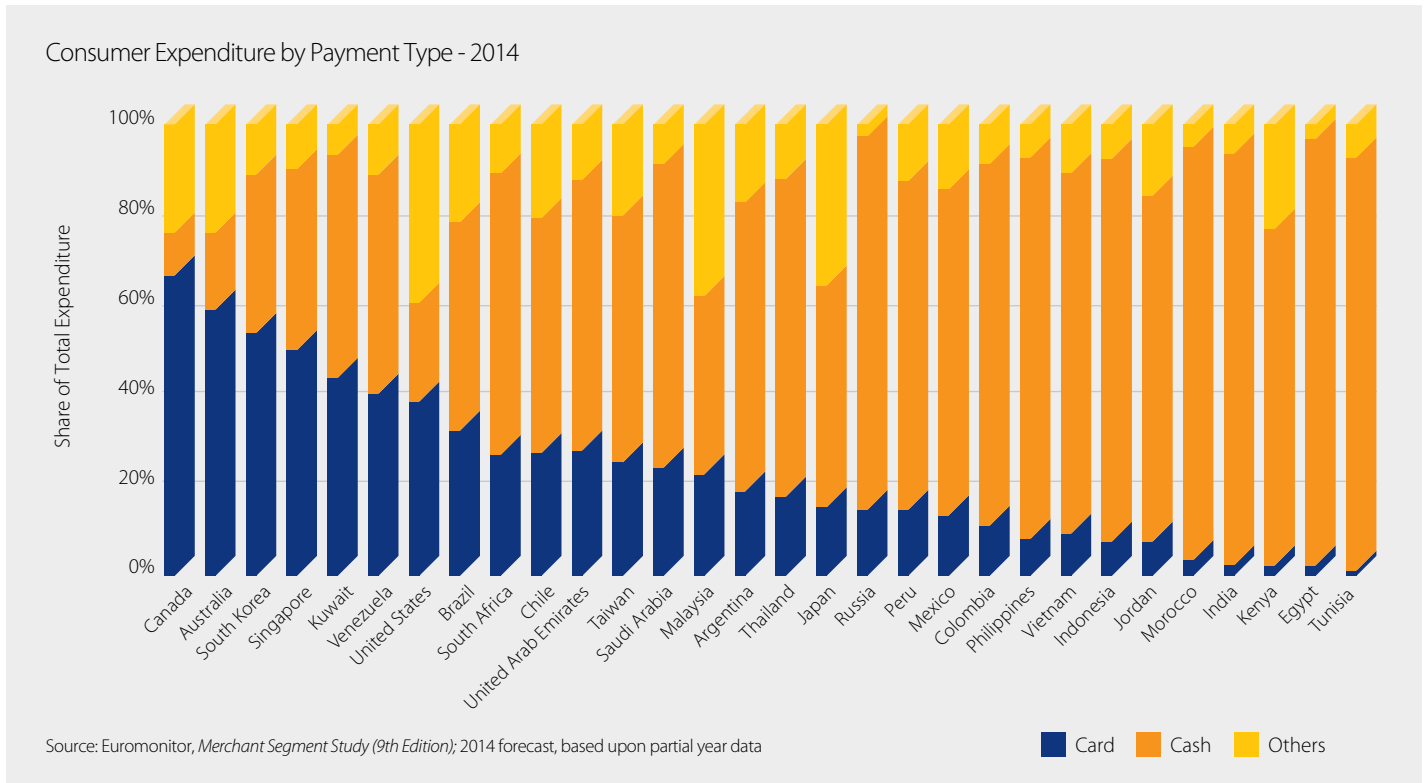
Significant amounts of cash remain in the U.S., despite rapid growth in electronic payments



⁵ Euromonitor, *Passport*, 2015.

⁶ Giesecke & Devrient, "The Life of a Banknote".

United States currency is transacted abroad, this growth is indicative of the amount of cash that continues to circulate domestically—and in other countries around the world. For instance, in the United Kingdom, the Bank of England estimates that the equivalent of £1,000 in banknotes is in circulation for every person in the country.⁷



As Figure 2 shows, some countries, such as Canada, Australia and South Korea, have made significant progress toward reducing cash to less than half of the volume of overall consumer expenditure. Other countries, generally in emerging markets, continue to show a nearly complete dependence on cash transactions. Even some markets that are otherwise considered more advanced still are highly dependent on cash—for instance, nearly 40 percent of consumer expenditures are made with cash in Singapore, while 50 percent are made with cash in Japan.

FIGURE 2
Some countries have reduced cash to less than 20 percent of consumer expenditures

The large share of cash as a proportion of payments in many of these countries suggests that cash not only continues to offer real and perceived benefits to its users in these economies, but also imposes switching costs that appear to be deterring the growth of electronic payment methods.

B. Cash is Expensive for Society

In a world of efficient, fast and highly-secure electronic payments, the continuing popularity of physical cash for legitimate face-to-face transactions can be attributed to three factors—anonymity, speed and

⁷ Bank of England, 2015.

A European Central Bank study estimated that the social costs of cash per euro spent is 2.3 percent versus 1.7 percent for a card payment.

not requiring a bank account. As a result, cash enables the evasion of government scrutiny and taxation. Cash is also tangible, instantly satisfies debts and other financial obligations and is widely accepted.

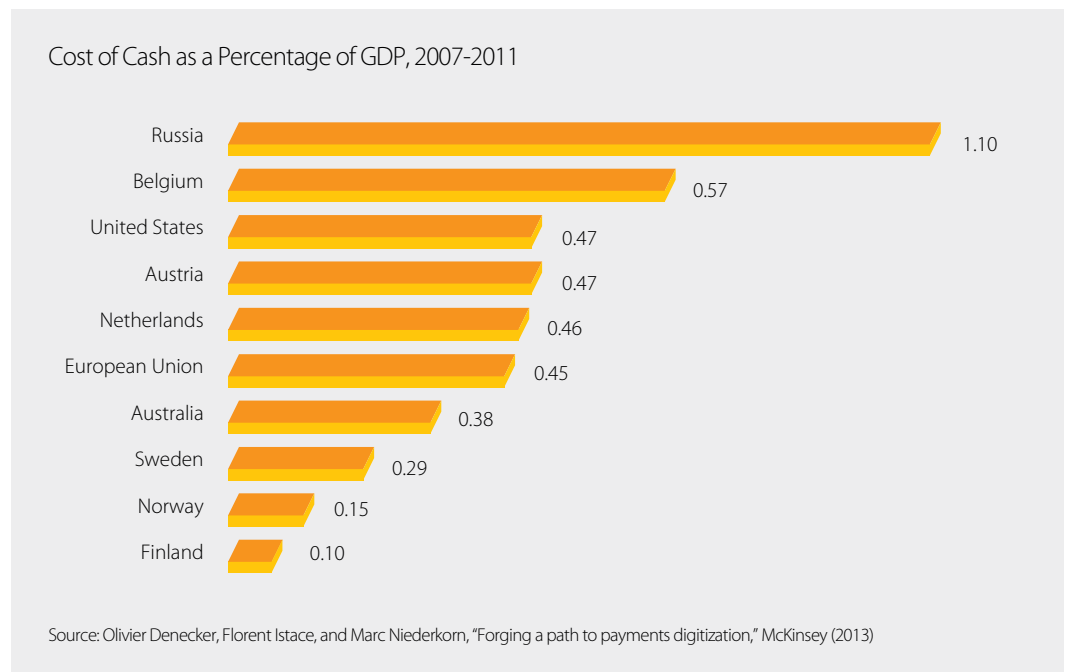
Despite these perceived benefits—or, more aptly, because of them—the use of cash has been widely shown to generate considerable economic costs to society, known as “social costs.” Because of its physical nature, cash must be produced, stored, distributed and secured—all of which requires significant infrastructure. And while useful in local face-to-face transactions, cash is extremely inconvenient for executing transactions with counterparties in

remote locations or in conducting online and mobile commerce. Moreover, the ability of cash users to operate in the “shadow” economy, outside the reach of government regulators, hinders the ability of governments to fully implement desired fiscal and social policies and requires a disproportionate share of resources to identify tax evaders.

A number of economic studies across multiple geographies have attempted to estimate the economic costs to society of using cash. These studies typically consider various direct costs (production, transportation, storage and safeguarding) as well as indirect costs (fees, foregone interest, tax revenues lost in informal economic activity) and measure the impact of these costs on different economic stakeholders, including individuals, banks, merchants, corporations and governments. In a multi-market study, consulting company McKinsey estimated that cash costs amounted to 1.1 percent of Gross Domestic Product (GDP) in Russia, where it estimated that cash is used for nearly 95 percent of consumer transactions, versus only 0.1 percent of GDP in Finland, where it estimated that cash is used for just 31 percent of transactions⁸ (see Figure 3).

FIGURE 3

Cash usage is a drag on GDP



⁸ Denecker, Istace and Niederkorn, McKinsey, 2013.

According to this study, more than two-thirds of the costs of cash are borne by banks and merchants, with the rest spread out across other key stakeholders (see Figure 4).

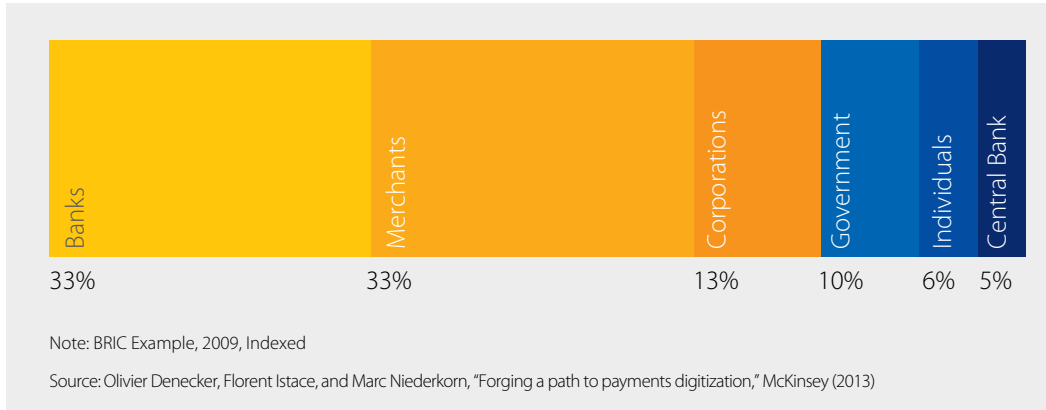


FIGURE 4
Banks and merchants absorb the majority of the operational cost of cash

Other studies have reached similar conclusions. A European Central Bank (ECB) paper measured the average social (i.e., total stakeholder) cost of cash in a sample of member countries to be 0.49 percent of 2009 GDP.⁹ As Figure 5 shows, this is more than half the cost of all payment instruments combined.

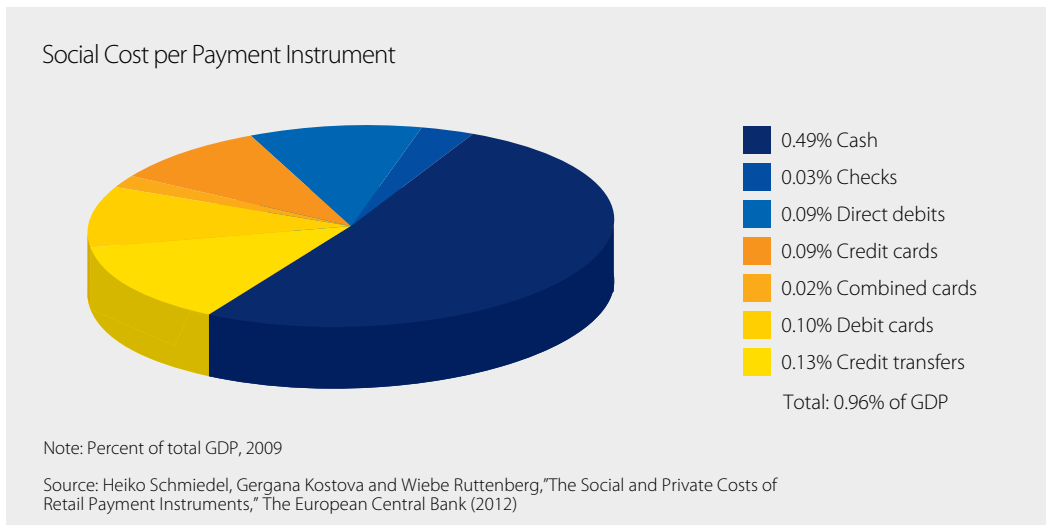


FIGURE 5
Cash has the highest social cost of any payment instrument

Since the costs of producing, distributing and storing cash (vaults, ATMs, armored vehicles, etc.) benefit from economies of scale, the unit social costs of cash tend to be lower in countries with high cash usage. This was generally the case in Europe, where the ECB study confirmed that the average unit social cost of cash is €0.42 versus a €0.99 unit cost for card payments. However, this was not true for all countries. In fact, in five of the 13 participating countries, the unit social cost of debit cards was lower than that of cash. Measuring costs in value terms, the study showed that the social costs of cash per euro spent is 2.3 percent versus 1.7 percent for a card payment.¹⁰ Combined with the unit cost findings, this suggests that notwithstanding the large volume of cash payments in Europe, cash is more costly than cards.

⁹ Schmiedel, Kostova and Ruttenberg, The European Central Bank, 2012.
¹⁰ Ibid.

A number of other central banks have also conducted similar studies. Using estimates of variable social costs, the Belgian central bank calculated that shifting 25 percent of small and medium-size cash payments to a mix of debit and prepaid cards would reduce variable social costs by six percent.¹¹ Similarly, a study by the Dutch central bank estimated that shifting 21 percent of cash payments to debit and prepaid cards would reduce variable social costs by seven percent.¹²

C. The Benefits of Electronic Payments

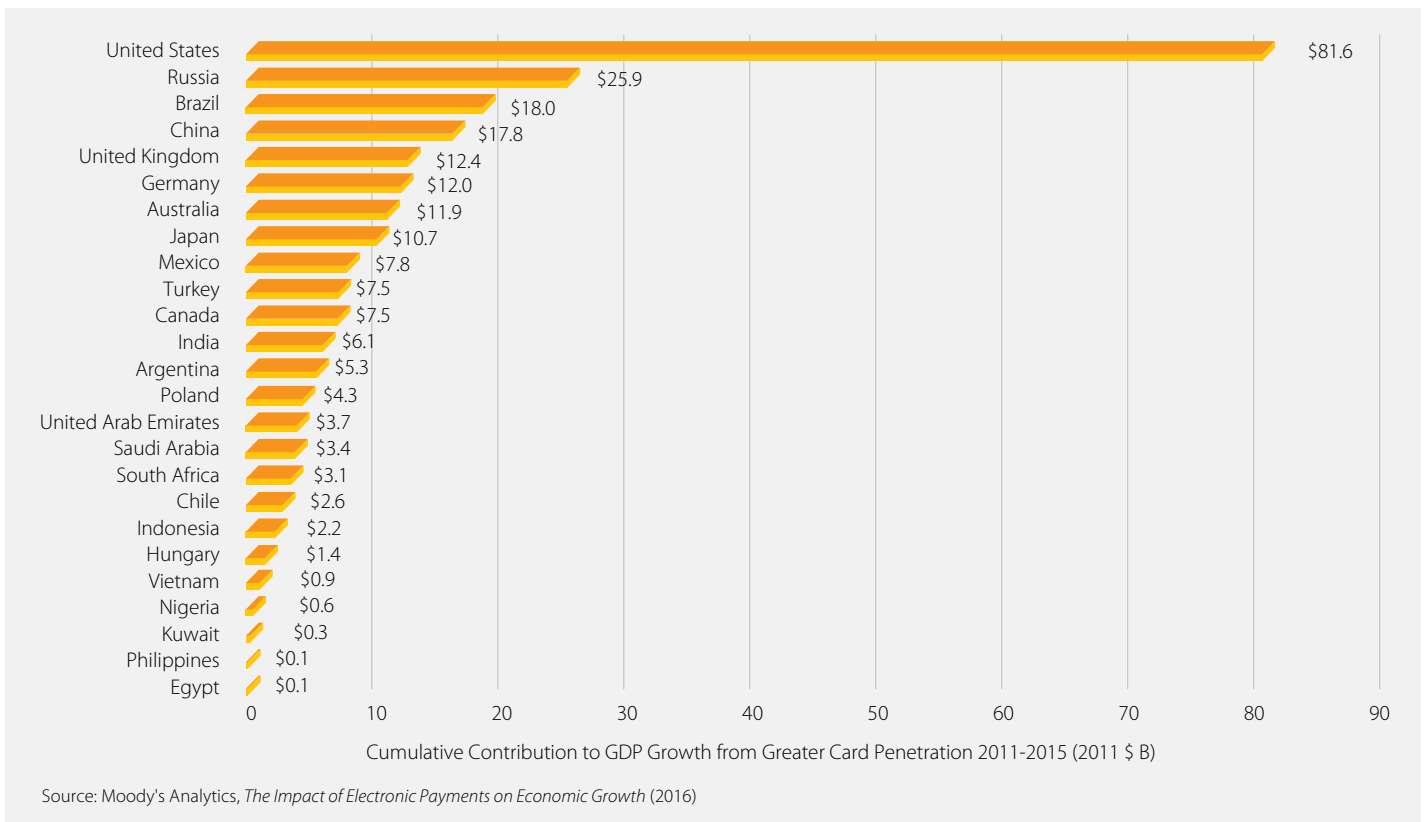
Though cash still remains the primary form of payment in many countries, a growing body of evidence shows that substituting electronic payments for cash payments yields numerous social benefits. For governments, these benefits include reducing or eliminating costs around the production and storage of physical currency as well as improved transparency across the economy. For merchants, benefits include lower fixed and variable costs associated with not having to support a physical payment instrument and faster and more secure transactions.

¹¹ National Bank of Belgium, 2006.
¹² Brits and Winder, 2005.

FIGURE 6
 Increased card penetration can have a significant positive impact on GDP

Driving Economic Growth

One of the key benefits resulting from greater usage of electronic payments is higher economic growth. In one major study, Moody's Analytics found that increased card usage added \$296 billion in real (US) dollars to GDP and the equivalent of almost 2.6 million jobs, per year, across the 70 countries studied over a five-year period, with countries that had the largest increases in card usage seeing the biggest contributions to growth (see Figure 6).



As an emerging market illustration, the Central Bank of Nigeria commenced a significant push to reduce the use of cash in the country, starting with Lagos in 2012 and then rolling out nationwide in 2014. A 2013 study concluded that moving to electronic payments could have a positive impact as high as 3.1 percent of GDP in 2013, rising to 3.9 percent in 2017. This impact is largely from increased employment, savings from a decrease in corruption, higher imports/domestic trade, financial sector savings from cash management and non-financial sector substitution for cash.¹³

Increasing Financial Inclusion

It has become widely accepted among governments and multinational bodies, such as the World Bank, that electronic payments are a critical element in the drive for increasing financial inclusion. This covers not only payment systems but also the ability for consumers to have access to a transaction account. These accounts allow consumers and small businesses to fulfill their payment needs, and they can also be used to store value and serve as a gateway to other financial services. With nearly 40 percent of the adult population worldwide, or approximately two billion people, without a formal payment account,¹⁴ growth and enhancement of payment systems and infrastructure have a significant role to play in improving financial inclusion.

Making it easier and more attractive for consumers and small businesses to have a payment account is crucial, but greater electronic payment acceptance is just as important. Access is not just about having a transaction account—the Bank of International Settlements (BIS) and World Bank include “the ability to use” the account as a key component to access.¹⁵ Additionally, access not only includes the ability to withdraw funds but also acceptance points for electronic payments—and consumers must have a sufficient set of incentives in place to use those accounts and pay with them. Consumers must see value in using their transaction accounts for payment, and growing acceptance is a critical component in the overall goal of improving the access to and utility of payment accounts.

To be successful, enhanced acceptance infrastructure must also have the proper support structure in place, which includes a sufficient legal and regulatory framework that addresses risks and protects consumers. It is important to roll out educational programs that improve general financial literacy and arm consumers with the knowledge of how to best use these accounts. All these elements are just as important as the underlying infrastructure, since they provide the guidelines and background that are necessary for consumers to truly see value in the payment system—and it is this value that ultimately ensures greater usage of the transaction accounts and financial system. Additionally, it is critical that the payment systems themselves have the proper rules and policies in place to properly balance the rights of all stakeholders.

Reducing the Shadow Economy

Another key goal of government policymakers targeting the displacement of cash with electronic forms of payment is the elimination of shadow economies—the gray area of legal economic activity hidden from public authorities. Because of its ease of use and anonymity, cash is seen as a key enabler of these economies, and a strong correlation has been shown between countries with large shadow economies and high cash usage as a share of payments (see Figure 7).

¹³ Agbaje and Ayanbadejo, 2013.
¹⁴ Bank of International Settlements and World Bank Group, 2015.
¹⁵ Ibid.

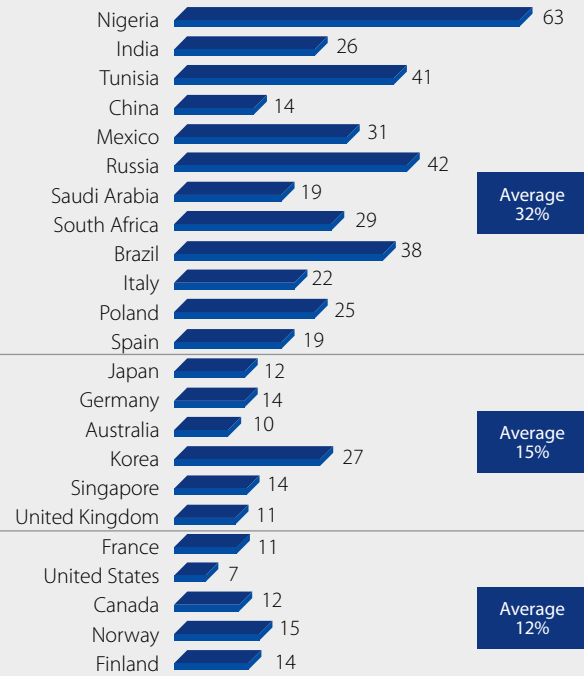
Cash Transactions

Total 2011 transaction volume
Percent



Shadow economy

Estimated shadow economy
Percent of GDP



Source: Olivier Denecker, Florent Istace, and Marc Niederkorn, "Forging a path to payments digitization," McKinsey (2013)

FIGURE 7

High cash usage perpetuates the shadow economy

In Europe, the consulting firm A.T. Kearney and Professor Friedrich Schneider estimated the size of the shadow economy to be about €1.8 trillion. In Germany and France, it was estimated to be about one-eighth the size of each country's official GDP, while in emerging Eastern European nations, such as Bulgaria, Latvia and Estonia, it was estimated to be close to 40 percent of official GDP.¹⁶ As with the McKinsey analysis, this study showed that countries with high levels of electronic payment usage, such as the United Kingdom and the Netherlands, have smaller shadow economies than those with low levels of electronic payments (see Figure 8).

Enabling Digital Commerce

As consumers shift away from shadow economies, it is important to enable them to participate more broadly in the rapidly expanding electronic and mobile commerce environments. For online marketplaces, electronic payments greatly facilitate the execution of purchases for both buyers and sellers. Yet, according to a recent study conducted by payment processor Worldpay, cash remains a significant component of online commerce payments in some markets. Cash on delivery is still used for almost half

¹⁶ A.T. Kearney, Visa Europe, and Friedrich Schneider, 2013.

1 Overview of the Payments Ecosystem

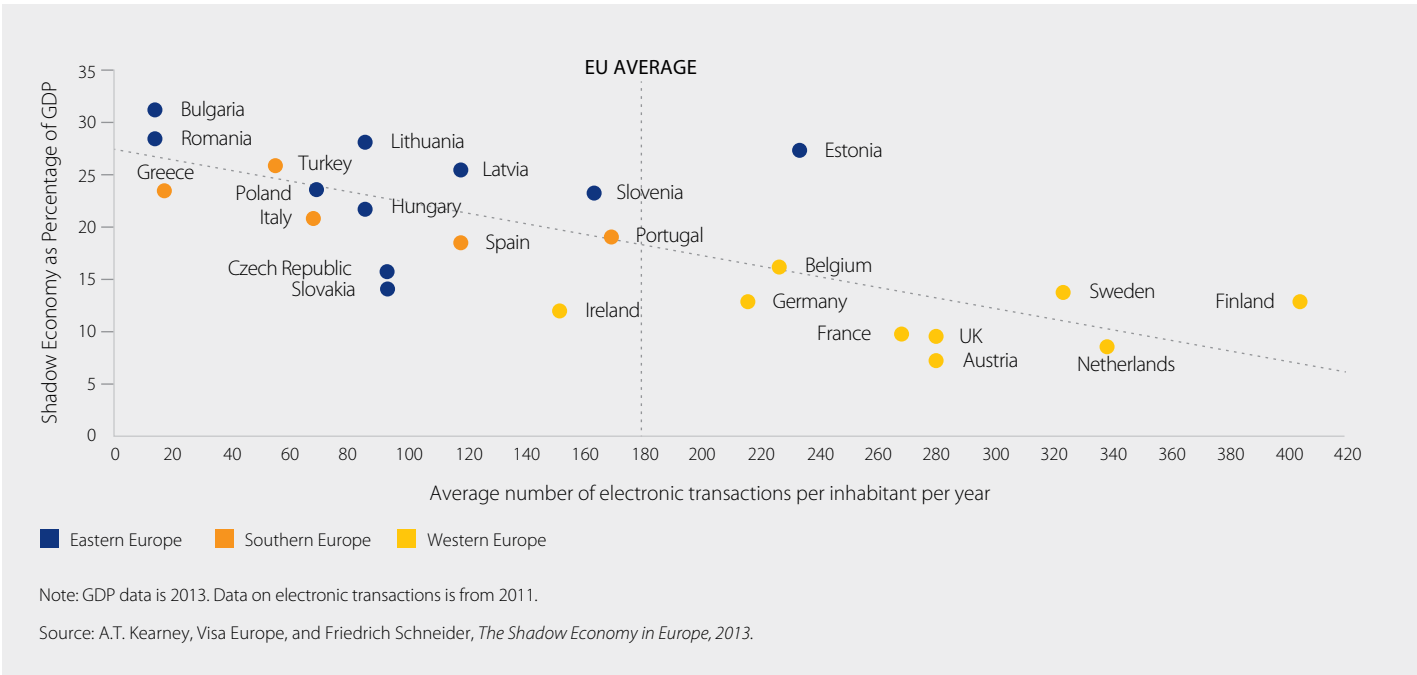


FIGURE 8
EU Countries with more electronic payments have smaller shadow economies.

the value of eCommerce transactions in the Middle East and Africa (Figure 9), while other sources put the share as high as 80 percent in the Middle East.¹⁷ In India, usage of cash on delivery is estimated to be as high as 60 percent, and surveys show that nearly 50 percent of consumers prefer to pay with cash upon delivery.¹⁸

The heavy dependence of cash on delivery in these markets strongly inhibits the growth of eCommerce because of the long lag between purchase and payment, combined with the fact that people do not always pay when goods are delivered. Electronic payments offer a means to develop more efficient processes for online and mobile commerce while ensuring guaranteed payment to the merchant and providing appropriate consumer protection.

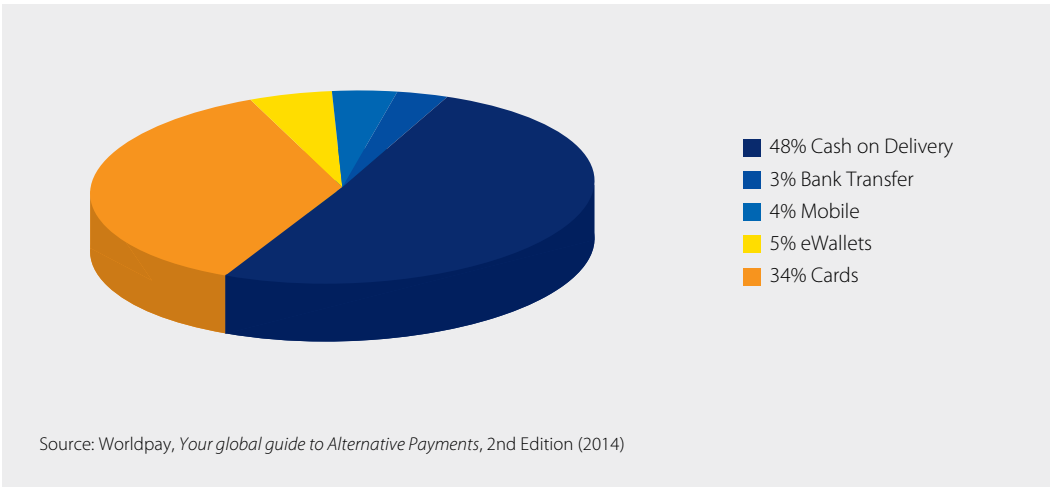


FIGURE 9
Cash on Delivery dominates online payment market share in the Middle East and Africa

¹⁷ Worldpay, 2014; yStats.com, 2015.
¹⁸ Motilal Oswal, 2015; Morgan Stanley, 2015; IAMA, 2015.

D. The Global Landscape of Electronic Payments Acceptance

It has never been easier to accept electronic payments. Innovation in merchant acquiring has created new options for consumers and retailers to securely exchange funds at the point of sale and online. An expanding array of card-based and mobile payment products are making it easier for consumers to make purchases, while innovations in acceptance technology are speeding up checkout, providing more data to merchants and enhancing data security, thereby increasing the value of the system for all participants. Innovation is also serving the needs of small businesses by pairing acceptance solutions with complementary value-added services and facilitating acceptance even among the smallest merchants. As a result, electronic payment acceptance has nearly reached ubiquity in some developed markets.

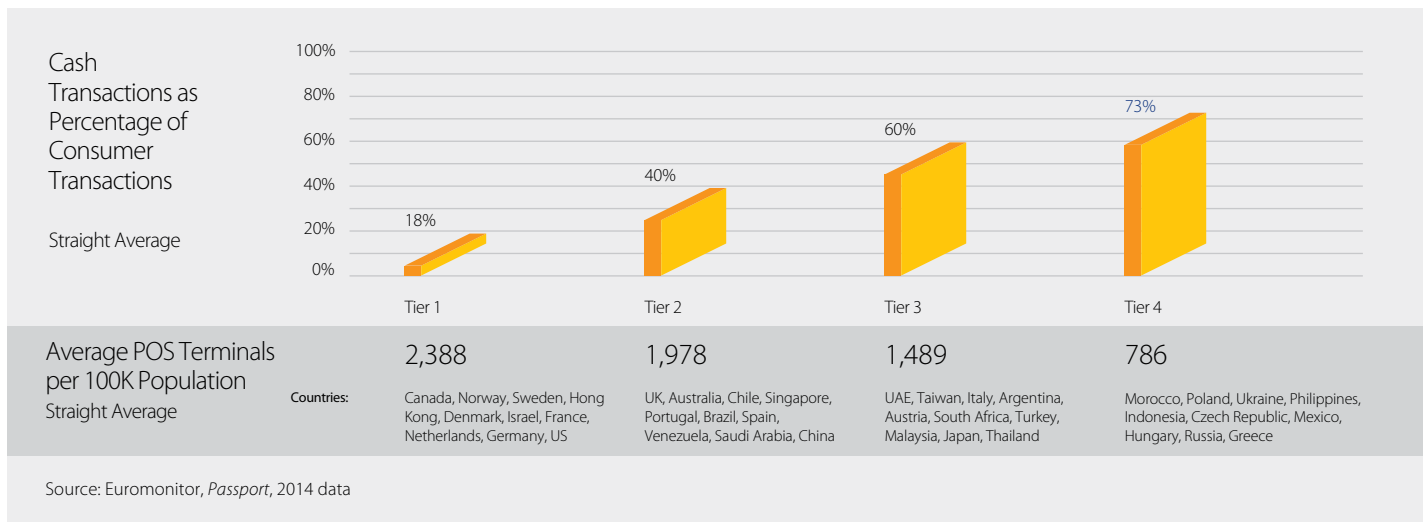
Globally, however, the advancement toward ubiquity is occurring at varying rates across different geographies. One of the reasons for this difference lies in the level of acceptance in each of these markets. Acceptance is critical to the value of electronic payments. Just as increasing the number of consumers who use electronic payments increases the value of the network to retailers, increasing the number of retailers that accept electronic payments increases the value of those payment methods for consumers. This cycle creates a positive feedback loop, wherein additional acceptance and usage add value to the existing network.

The Traditional Evolution of Acceptance

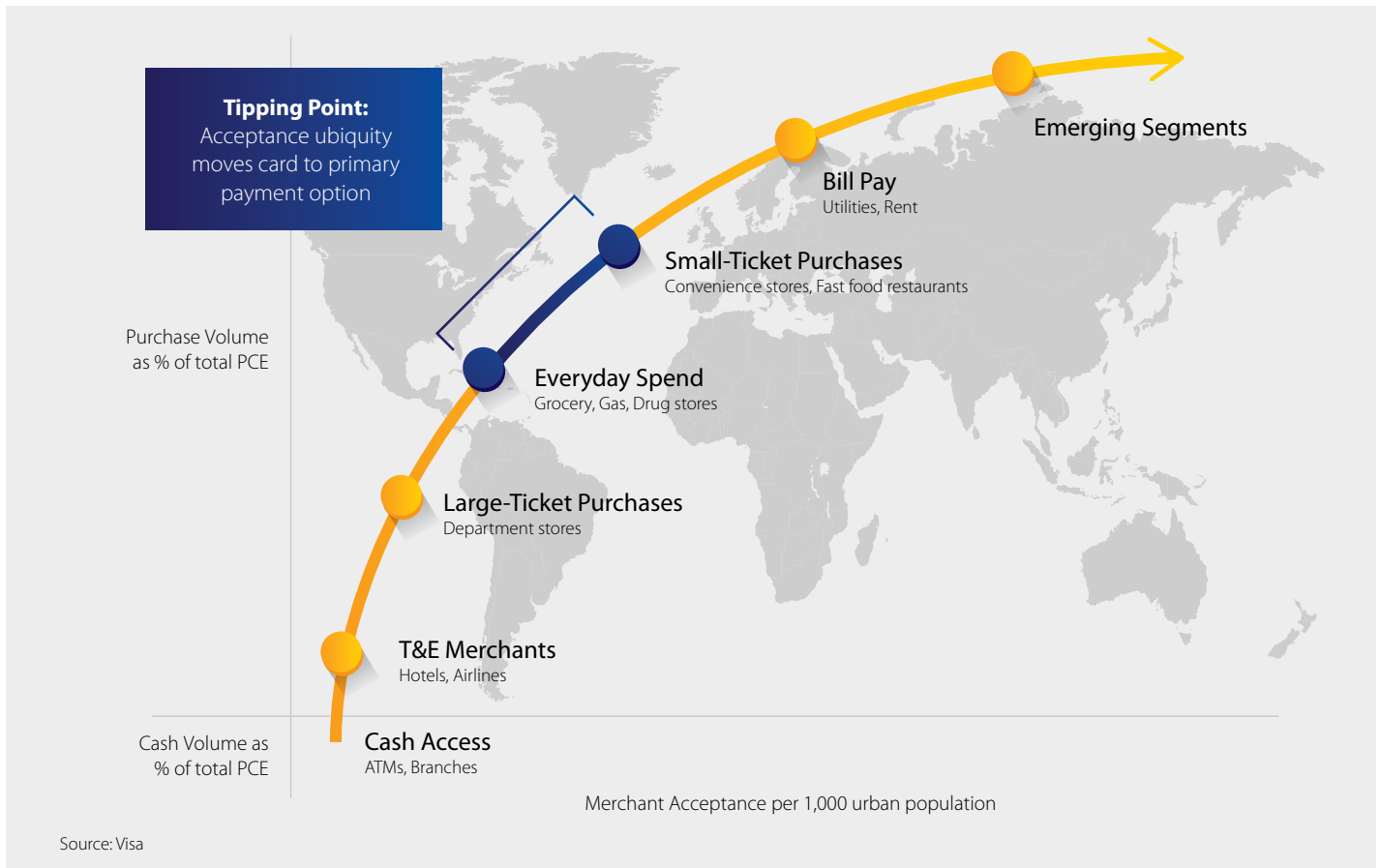
Traditionally, the acceptance of electronic payment has meant acceptance of cards, since the payment card was the first form of electronic payment that gained widespread acceptance in face-to-face environments. Only recently have other means of electronic payments, such as direct debits from bank accounts or other means of pushing payments to a merchant, become viable as payment methods at the POS. For the majority of markets, POS terminal penetration therefore provides a good measure of acceptance, and high levels of acceptance are absolutely critical to reducing the usage of cash. Figure 10 shows the correlation between the amount of cash used and the penetration of POS terminals in a variety of markets.

FIGURE 10

Countries with lower cash usage have higher penetration of POS terminals



In markets with high penetration, acceptance has been built up with significant effort over a period of time. This expansion typically follows a specific pattern, since merchants within a segment rush to offer the same convenience and service once electronic payments begin to make inroads in that segment. Thus, most markets follow what can be called the “Acceptance Development Lifecycle,” which traces the order of when merchant segments tend to adopt card payments. Over time, the expansion of acceptance across multiple segments builds sufficient scale to make card acceptance nearly ubiquitous at the point of sale, which is a key step toward reducing cash.



As illustrated in Figure 11, card payments first appear in a country in the travel and entertainment (T&E) sector, driven by overseas cardholders, before moving into large-ticket purchases, such as department stores. As domestic card issuance grows, consumers move into everyday-spend segments (grocery, gas, etc.) and then into lower-ticket transactions (convenience stores, quick-service restaurants, etc.), largely driven by debit cards. In some markets, government-sponsored salary cards or benefits cards act as the catalyst for acceptance in everyday-spend categories.

It is at this stage that card payments typically become the first-choice payment option and cash becomes relatively less popular. Finally, as markets mature, acceptance expands into bill pay (telecom, utilities, etc.) and into other emerging segments, such as healthcare.

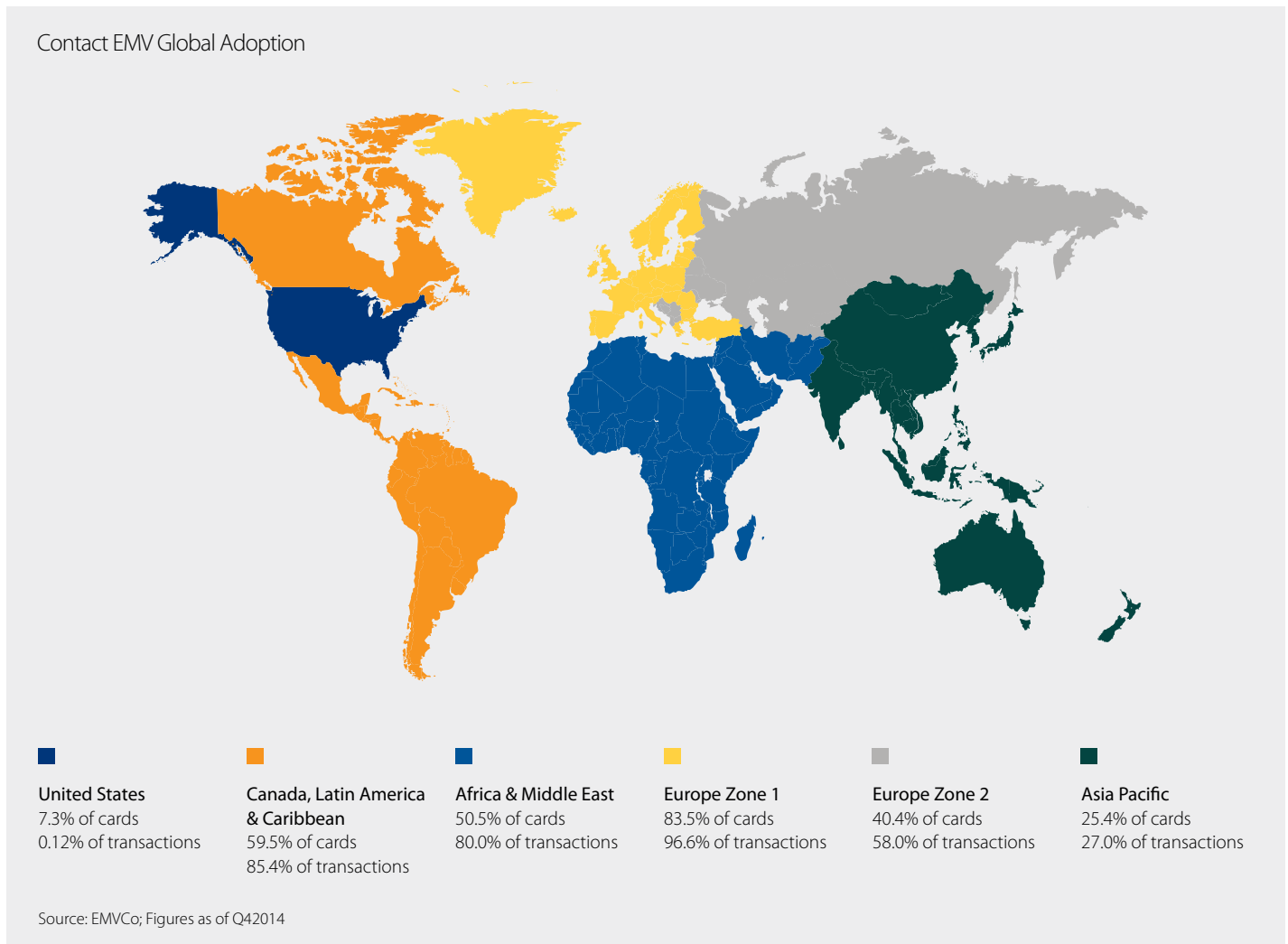
FIGURE 11
Acceptance Development Lifecycle

Throughout this cycle, the number of acceptance points steadily increases across a market, usually sparking a corresponding rise in the volume of electronic payments in those segments. It must be noted that most countries do not follow this Lifecycle consistently—a country may see acceptance grow in the healthcare segment before it expands into everyday spend, while another market may expand into bill pay driven by a new, innovative technology platform. Nevertheless, this represents a useful general framework to illustrate how card payments typically expand within a country.

Globally, card acceptance has been transitioning to an environment based upon a “smart” and secure chip card using EMV technology. Plastic cards equipped with a magnetic stripe and encoded with static payment account information have proven to be vulnerable to counterfeit fraud. The introduction of EMV cards has addressed this security problem for physical card acceptance. Figure 12 shows how EMV is becoming the global standard as the United States, the last major payment market to rely upon the magnetic stripe, is in the process of enabling ubiquitous EMV acceptance.

FIGURE 12

Adoption of EMV is spreading around the world



Recent Shifts in the Landscape

Recent developments in technology and the emerging business models may offer the potential to accelerate the penetration of acceptance, possibly even leapfrogging the traditional framework discussed above.

- **Transformation of the POS**

New POS commerce devices are increasingly IP-enabled terminals that connect to the Internet. This is ensuring that millions of “smart” devices now sit on merchant counters, opening the door for merchants to receive enhanced risk management, data analytics and new customer-friendly loyalty programs that help expand card usage.

- **Enhancement of the payment experience**

With tokenization, encryption and other technological advancements, merchants can securely store their customers’ electronic payment credentials, removing the need to present an account number in order to make a purchase. Card-on-file purchases and in-app payments are many of the trends to have emerged in recent years as merchants deploy checkout processes with lower friction, serving customers more easily across multiple channels. This trend will support the emergence of commerce via connected devices such as televisions and household appliances, which can take advantage of the growing Internet of Things. This trend also supports further growth in recurring payments and the bill payment sector, which are also heavily reliant upon stored payment credentials.

- **Contactless acceptance**

Supported by the growth of contactless payment cards and mobile phones equipped with Near Field Communication (NFC) technology, contactless acceptance points are increasing in many countries. This supports an expansion of electronic payments into small-ticket purchases, including vending machines and transit, and other areas of commerce that require speed and convenience as part of the payment process. In Canada, at least one-third of all POS terminals (including nearly all major retailers) support contactless, and between 10 and 20 percent of all transactions are contactless.¹⁹ Australia, meanwhile, has the highest usage of contactless payments in the world, with 53 percent of Australians having made a contactless purchase.²⁰

- **Mobile acceptance**

Combining payment acceptance and mobile technology allows terminals to reach merchant segments and geographies previously reliant on expensive or unavailable landlines for electronic payment acceptance. This acceptance model is changing how traditional merchant acquirers serve market segments that were traditionally hard to reach, and opening the door for new market entrants. For existing merchants, the mobile terminals allow greater flexibility in the checkout process, changing how merchants interact with their customers.

- **Payment facilitators**

These payment companies provide a way to extend the reach of the traditional acquiring model, often to specific merchant segments where specialized expertise or capability is required. These facilitators offer significant promise for expanding acceptance in developing countries, since they can provide physical, online and mobile acceptance.



¹⁹ BMO Bank of Montreal et al., 2015.
²⁰ RFI Group, 2015.

- **Improved risk management and compliance**

With greater flexibility comes greater risk, but the increase in data analytics capabilities and technological sophistication and computing power has greatly increased the ability to deliver real-time risk management and compliance solutions. Ultimately, merchants can better differentiate between known, low-risk customers and those that require higher scrutiny and may present a risk to the business. Additionally, these enhanced capabilities have enabled payment networks to successfully manage risk and compliance as new parties, including payment facilitators, have entered the system.

It is important to note that these innovations have gained traction in large part by leveraging the infrastructure and operational rules of existing payment networks, which supported the innovation while maintaining sufficient protections for all stakeholders, including consumers and merchants. This has enabled new technology and business models to progress without posing a significant risk to the safety or security of the overall payment system.



RECENT SHIFTS IN THE LANDSCAPE

HOW TECHNOLOGY IS CHANGING ACCEPTANCE IN BOTH DEVELOPED AND DEVELOPING MARKETS

M-PESA

A mobile money transfer service initially offered by the mobile telecom company Safaricom in Kenya, M-PESA has emerged as a major means of transferring money and increasingly paying for goods. Utilizing a network of agents for withdrawing and depositing money into phone-based accounts, consumers can send money or pay for goods and services directly from their phones. The service has greatly increased the number of people that can access the financial system and make electronic payments.

With nearly 14 million active customers, M-PESA's annual transaction volume reached US\$41 billion in 2015; its cashless merchant payment service was accepted at nearly 50,000 merchants.

Source: Safaricom Limited Annual Report 2015 and FY15 Results Presentation.

iDEAL

Developed in the Netherlands, iDEAL offers a way by which consumers can make eCommerce purchases on merchant websites using real-time, direct online transfers from their bank. At merchants that accept iDEAL, consumers are re-directed to their banking website, where they log into their account, review the transaction data and authorize the transaction. Merchants then receive real-time confirmation of the payment and can complete the transaction.

In 2015, approximately 18 million payments were made each month with iDEAL, which is accepted at over 100,000 websites and organizations.

Source: iDEAL Key Figures, <https://www.ideal.nl/en/payee/key-figures/>

Square

Launched in the U.S., Square pioneered the use of mobile POS (mPOS) devices, which are small card readers that attach to a mobile phone or tablet to support payment acceptance. Square was also an early example of a payment facilitator, which is a payment intermediary that is sponsored by a traditional acquirer, and provides customer service, risk management and value-added services to under-served merchant segments.

Through September 2015, Square processed more than \$32 billion in Gross Payment Volume annually on 638 million card payments, with more than 2 million merchants accepting at least 5 transactions.

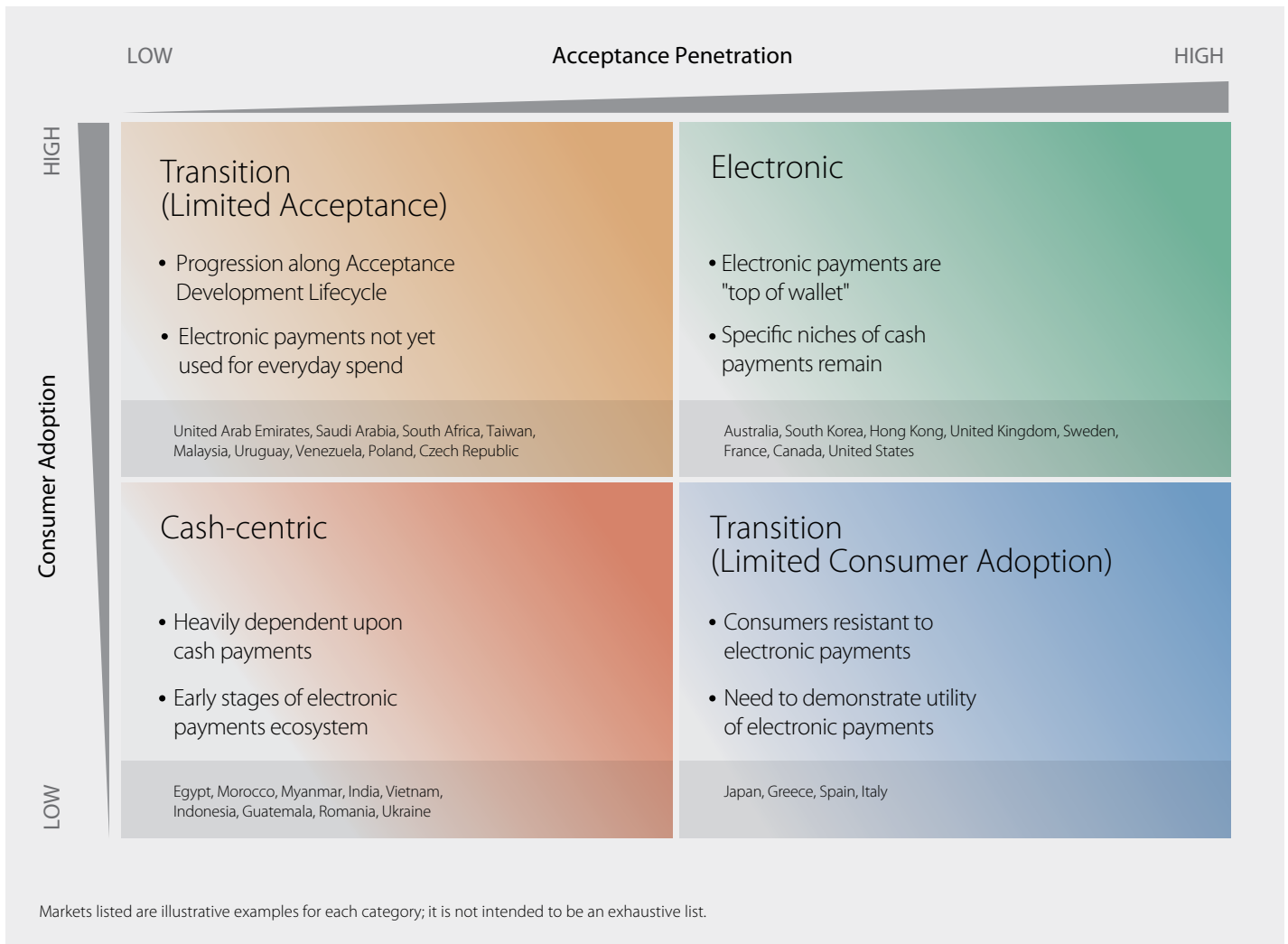
Source: Square S-1/A, 6 November 2015.

E. Framework for Categorizing Markets

Comparing a country's acceptance of electronic payments to consumer adoption, it is possible to classify markets in terms of their existing state of electronic payment "readiness." Figure 13 illustrates four different types of markets based on their differences in penetration across these two dimensions.

- **Cash-centric**
Low in card penetration and usage and limited in acceptance
- **Transition (Limited Acceptance)**
Relatively high card penetration but limited acceptance
- **Transition (Limited Consumer Adoption)**
High acceptance but limited card penetration or usage
- **Electronic**
High penetration and usage of cards, and merchant acceptance

FIGURE 13
Framework for Market Classification



This framework can help clarify which markets may be best suited for specific policies aimed at increasing acceptance, which is discussed later in the report. Overall, programs may have different goals when it comes to expanding electronic payments. For example, some may be aimed at growing overall private consumption while others target reduced shadow economies. In all cases, however, a few common metrics are generally used to measure a program’s progress and success:

1 Number and volume of electronic payments	2 Electronic payment volume as percentage of consumer spend	3 Average ticket value (ATV)	4 Number of merchants and acceptance points/ POS terminals
Measures overall size and growth of electronic payments	Evaluates penetration of electronic payments into consumer spend	Decreases as electronic payments are increasingly used for everyday spend	Tracks growth of acceptance versus potential penetration opportunity

This will be the guiding framework and success criteria as we assess appropriate policy levers for accelerating acceptance later in this report.

2

Electronic Payment Adoption is Slowed by Acceptance Challenges

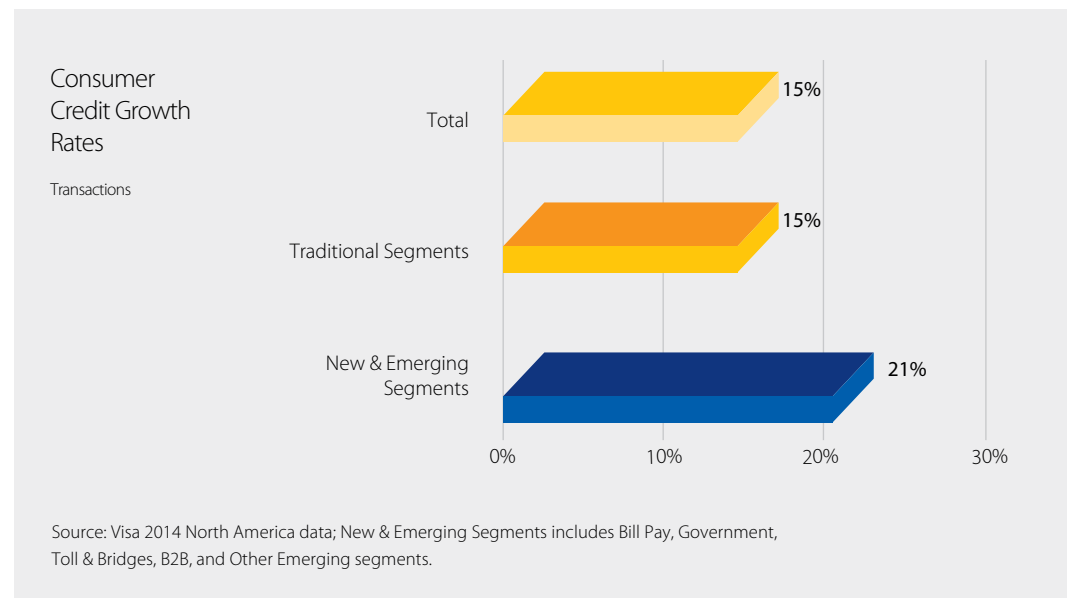
Explore the barriers that slow the growth of electronic payments acceptance.

There is widespread evidence to conclude that replacing cash with electronic consumer payments typically leads to faster economic growth and enhanced social welfare. In recognition of the shortcomings of cash, a growing number of international institutions, national governments and cities have embraced electronic payments as an enabler of growth and development. Despite these influences, many countries have yet to gain traction in electronic payments in any meaningful way.

One of the main reasons is the lack of adequate merchant payment acceptance. Increasing acceptance faces numerous barriers around the world, but it is critical to the growth of electronic payment volume. Concentrated efforts to increase acceptance in emerging merchant segments, balanced with issuer and cardholder usage programs, have resulted in faster growth than traditional card acceptance segments, such as T&E and grocery (see Figure 14). This confirms the catalyst effect of increasing acceptance locations and overcoming the barriers that have been slowing growth to date.

FIGURE 14

Growing electronic payments in underpenetrated segments accelerates overall adoption



It requires effort to educate customers about the benefits of electronic payments for common purchases, but enabling widespread merchant acceptance of these payments often involves daunting challenges as well. These broad merchant acceptance challenges can be grouped into three key types of barriers: infrastructure, economic and regulatory.

A. Infrastructure Barriers

Many markets suffer from inadequate infrastructure to support electronic payments at the merchant point of sale, particularly outside of a few key locations or merchant segments (e.g., T&E spending, large cities).

- **Telecommunications**

Inadequate and/or expensive telecommunications infrastructure can make it difficult for merchants to access the networks necessary to accept electronic payments and perform such routine payment functions as authorizing and clearing transactions and receiving settlement funds. Figure 15 shows how countries with low penetration of fixed telephone lines per inhabitant also tend to have low penetration of POS terminals.



FIGURE 15
Fixed line coverage correlates to POS terminal penetration

- **Banking networks**

Rudimentary or non-existent bank branch and ATM networks can limit banks' ability to serve businesses in remote areas, thereby limiting merchants to accepting cash and preventing acquirers from easily deploying and servicing POS terminals.

- **Data quality and availability**

Many countries lack sufficient and reliable information sources (such as credit bureaus) about merchants. This makes it challenging for acquirers to assess the potential credit and fraud risk of

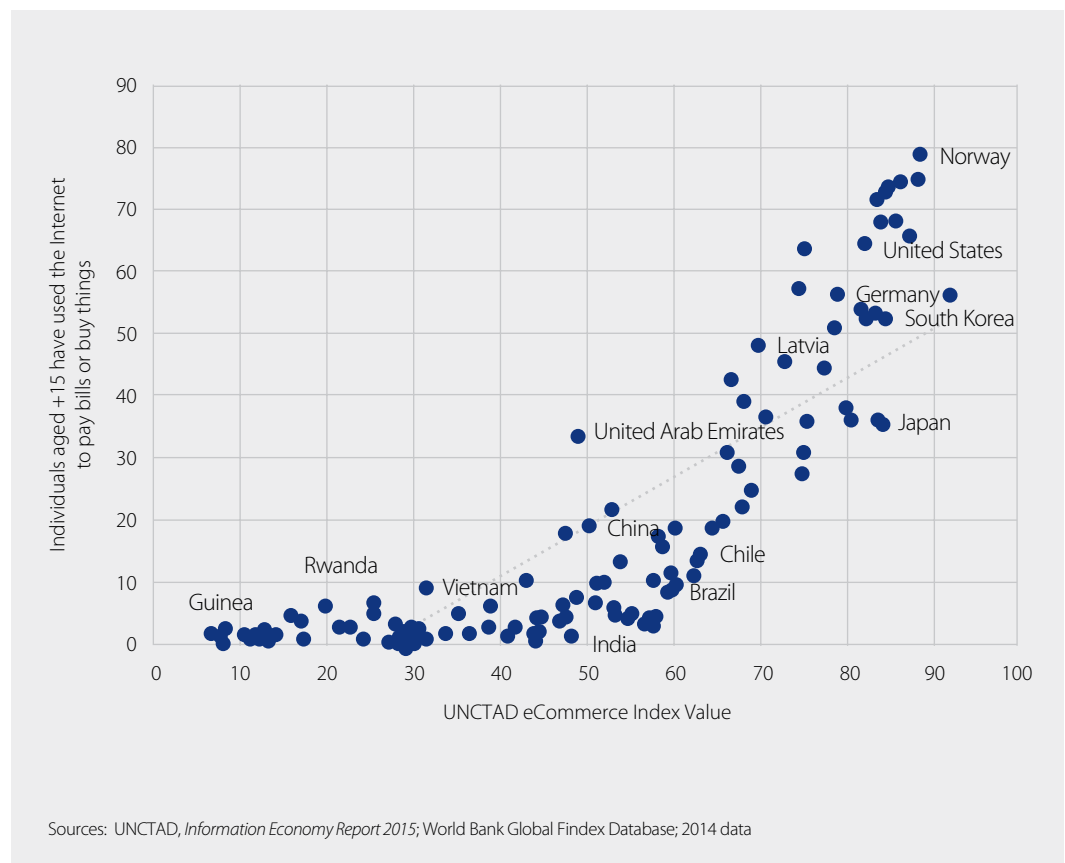
merchants, particularly in cases where the acquirer is unable or unwilling to visit and physically inspect the merchant premises. Merchants that work with multiple acquirers also create data quality and monitoring challenges.

- **Online and mobile access**

Emerging channels such as eCommerce and mCommerce require strong supporting infrastructure and fast, affordable access; otherwise, commerce in these channels will struggle to grow. Not surprisingly, as Figure 16 shows, there is a strong correlation of eCommerce usage to the state of a country's readiness for eCommerce.²¹

FIGURE 16

Online payment usage correlates to the level of eCommerce infrastructure



²¹ To measure an economy's readiness for eCommerce, and thereby its infrastructure, the UN Commission on Trade and Development (UNCTAD) has developed an Internet business-to-consumer (B2C) eCommerce index. This index consists of the following measures: mail delivery coverage (for receipt of goods purchased), possession of credit cards (for purchase), usage of the Internet, and number of secure servers. UNCTAD, 2015.

²² This ranking was calculated based upon four self-reported criteria: 1) ACH infrastructure and check clearinghouse features, 2) POS infrastructure, 3) interoperability of POS terminals, and 4) scope of payment system oversight. Cirasino and Garcia, 2008.

These issues hold back the development of the infrastructure to support POS terminals, which inhibits penetration of card payments. This can have a significant impact on a country's overall ability to operate a robust electronic payments infrastructure and thereby reduce cash usage. In addition to card payments, countries also require sufficient back-end payment infrastructure, such as Automated Clearing House (ACH) and Real-Time Gross Settlement (RTGS) systems, to comprehensively support electronic payments. A World Bank paper ranked countries' retail payment systems infrastructure and key policy decisions that impacted the safety, soundness and efficiency of the services provided.²² Not surprisingly, the results show that countries with well-developed retail payment system infrastructure have a significantly lower percentage of cash transactions than countries with less developed systems (see Figure 17).

2 Electronic Payment Adoption is Slowed by Acceptance Challenges

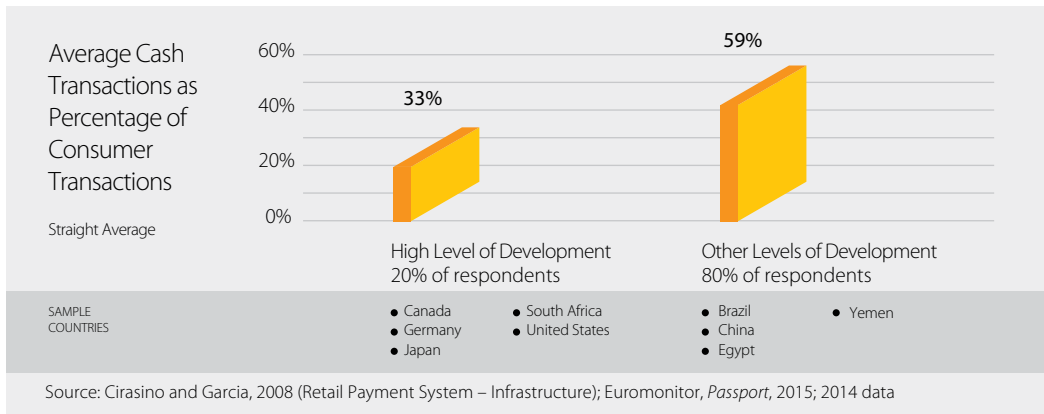


FIGURE 17

Countries with developed retail payment systems have fewer cash transactions in the economy

B. Economic Barriers

The acceptance of electronic payments involves both up-front investment and ongoing operating costs for both merchants and acquirers. In markets with a strong shadow economy, additional costs exist to bring merchants into the formal economy. Overall, a number of economic barriers in a market can prevent the realization of a positive economic return.

- **Low acquirer interest**

The costs of onboarding, underwriting and setting up a new merchant to accept electronic payments can be a significant investment for an acquirer. In markets where acquirer profit margins are low, even where merchant demand for electronic acceptance might otherwise be strong, acquirers can show little interest in pursuing additional acceptance. Often, these markets include smaller cities, rural and semi-rural geographies, or certain segments such as small merchants or eCommerce merchants. Merchants with limited payment volume, seasonal businesses or those with a higher than average failure rate, such as restaurants, often require high levels of customer service and make it difficult to justify the initial start-up and servicing costs. This can make it difficult for acquirers to service these types of merchants profitably. Additionally, the market structure may limit incentives to expand, for instance in cases where there is a single large acquirer.

- **Inability to compare costs**

Because the costs of accepting cards or other types of electronic payments are often explicitly charged by a bank or other third party, they are visible to a merchant. Cash acceptance costs (e.g., security, handling and transportation) are less transparent because they often involve lost opportunities (e.g., time spent sorting, protecting or transporting cash), which are more difficult to quantify. Comparing the costs and benefits of accepting cash versus electronic payments can be a difficult exercise for a merchant, particularly when accepting cash is often seen to be “costless”; this deters some merchants from accepting card payments.

- **Unique merchant segment economics**

The financial profile of some merchant segments can also represent a barrier to electronic payment acceptance. Some segments have thin margins or structural barriers that require receipt of the full transaction amount without the deduction of any fees—e.g., government tax

Cash payments facilitate the underreporting of sales and lower tax bills.

TABLE 1

In Europe, certain industries are more likely to underreport sales

payments. Merchants may then be unwilling or unable to accept electronic payments, since cost is often embedded into the transaction (unlike cash, where costs are typically absorbed elsewhere). As such, merchants may not perceive a viable business case for acceptance.

- **Strength of shadow economy**

In countries with a strong shadow economy, there is a significant desire to transact with cash. Cash payments facilitate the underreporting of sales and thus lower tax bills. As a result of the potential of having to pay the true amount of tax owed on sales, electronic payments present a significant cost to these merchants beyond the cost of the payment itself. As A.T. Kearney and Professor Friedrich Schneider found in Europe (see Table 1), the tendency to underreport sales and thus stay in the shadow economy tends to be more prevalent in certain sectors.²³

Sector	Estimated range of underreporting as percentage of total shadow economy
Wholesale and retail	86% - 93%
Transport and communication	68% - 82%
Hotels and restaurants	54% – 81%

Source: A.T. Kearney, Visa Europe, and Friedrich Schneider, *The Shadow Economy in Europe*, 2013; 2013 data

- **Resource requirements**

Adopting electronic payments requires an investment in equipment and human resources to make the systems adjustments (if required), to change internal accounting processes and to train cashier staff, among other needs. As such, inertia can be just as large a factor as the financial cost. Any change requires resources that the merchant may not allocate until they see a clear benefit from adopting new forms of acceptance or a demonstrated demand from their customers.

C. Regulatory Barriers and Lack of Government Policy Support

Government and regulatory bodies are key stakeholders in the development and evolution of electronic payments since they play important roles as stewards of their country's monetary and economic systems. In their capacity to make laws and regulate commerce, these institutions can have a profound influence over the pace and overall success of electronic payment acceptance. The circumstances under which these various forms of regulatory involvement or policy measures are likely to be successful are discussed in more detail later. Here we briefly describe some of the regulatory actions and government policies that can serve as barriers to increasing acceptance of electronic payments.

- **Pricing intervention**

Some regulators have sought to expand electronic payment acceptance by regulating the pricing of electronic payments, hoping to lower the cost to encourage more acceptance. This usually takes the form of capping or otherwise limiting the IRF or MDR (or MSF) level in the

²³ A.T. Kearney, Visa Europe, and Friedrich Schneider, 2013.

2 Electronic Payment Adoption is Slowed by Acceptance Challenges

market, thereby regulating what acquirers or merchants, respectively, pay for accepting payment cards. Governments can also intervene with regard to how merchants price for specific payment methods, known as surcharging or payment-method-based discounts.

However, pricing in payments serves as an economic mechanism to appropriately balance the costs and benefits of electronic acceptance. Limiting interchange or MDR/MSF often has the unintended effect of reducing profitability for issuers to issue cards (IRF regulation) or acquirers to sign up and acquire transactions at new merchants (MDR/MSF regulation). If the regulations end up making parts of the payments ecosystem less profitable, new investment will decline, stifling market growth and expansion. Price regulation is also typically “one size fits all,” with one price or pricing mechanism for all types of transactions, which typically has a dampening impact on underpenetrated categories. Additionally, limits on revenue impact issuer investment in usage programs, and in most markets it has proven effective to incent cardholders to use their cards in order to grow electronic payments. In some cases, reduced incentives may even cause issuers to impose new categories of fees on cardholders to make the products profitable, further deterring electronic payments usage.

- **Regulatory involvement**

While regulations are necessary to ensure the security and soundness of the financial system and any payment system, certain types of regulations can also deter investment and innovation in electronic payments.

- ***Outdated regulations***

Technological change can frequently outpace government’s ability to regulate it, leading to delays in markets where participants are unwilling to invest as a result of the uncertainty. For instance, requirements for enhanced customer authentication for eCommerce need to be aligned to emerging business-to-business use cases, and thus governments need to consider the full market impact in developing regulations.

- ***Overly restrictive regulations***

Regulations that are overly restrictive or disproportionate also slow growth by raising the bar too high to attract interested parties. For instance, the E-Money Directive adopted by the European Union in 2000 established particular legislative hurdles, but the market for e-money remained underdeveloped. The directive was revised subsequently as part of the Payment Services Directive, and in the ensuing years, e-money institutions have started to spread throughout Europe. Other common barriers are one-size-fits-all Anti-Money Laundering (AML) and Know Your Customer (KYC) requirements, which can make it unduly cumbersome for some merchants to open accounts for settlement. Finally, regulations that control merchant pricing or profit margins, such as those often found in fuel retailing, can also inhibit expansion of acceptance.

- ***Technology mandates***

Regulations that dictate the use of a specific technology in a payment transaction may end up slowing acceptance by limiting innovation. It can also create a barrier to growing acceptance by requiring significant investment in a certain type of technology that may become outdated due to continuing product development.

- **Imbalanced policies focused on the shadow economy**

In an effort to shrink the shadow economy, governments have often deployed regulations without pairing them with consumer incentives, resulting in disincentives to use electronic payments.

- ***Transaction information requirements***

Some countries require transactions above a certain threshold to be reported, which can misalign incentives. For instance, some markets require reporting from both issuers and acquirers on specific transactions but have not implemented corresponding policies to incent consumer use.

- ***VAT withholding***

This policy requires acquirers to withhold a certain percentage of a merchant's value-added tax (or VAT) on electronic transactions, which in some countries is not paired with corresponding incentives to consumers. While such policies do help to increase revenue collection, they also directly impact a merchant's cash flow—which creates an incentive for the merchant to steer transactions to cash, particularly when there is no strong consumer demand to use electronic payment methods.

- ***Taxes on electronic payments***

Governments have also attempted to raise revenue in the face of a significant shadow economy via a tax or levy on certain or on all electronic payment transactions. The tax aims to capitalize upon electronic payments' ability to make transactions visible to government authorities. However, on its own, it creates strong disincentives to use electronic payments, since it can lead to a price differential in the market, either encouraging the merchant to push cash acceptance or a consumer to use cash (if the cost is borne by consumers).

- **Limited government support for electronic payments**

As both a significant recipient and initiator of payments, governments have a considerable ability to demonstrate commitment (or lack thereof) to electronic payment through their actions.

- ***Government as payer***

Many governments still distribute money via check or cash for tax refunds and paper-based vouchers for social benefits or emergency funds. These types of payments often remain in paper form, as checks are cashed or paper vouchers exchanged for goods or services at a limited set of merchants. As a result, merchants have little incentive to adopt electronic payments if significant portions of their business come from these programs.

- ***Government as payee***

Governments receive a wide range of payments, including taxes and service fees (e.g., vehicle license fees, passport fees, etc.). These fees may extend into utilities, transit systems and parking services (meters, garages, etc.). Governments that do not accept electronic payments for these services or have substantive surcharging or convenience fees may be sending a negative signal to the marketplace about their commitment to electronic payments.

3

Opportunities to Accelerate Electronic Payments Acceptance

Explore the programs and initiatives that have been successful in expanding payment acceptance.

There are a number of challenges to increase penetration of electronic payment acceptance in many countries. This section looks at three broad categories of tools or “levers” that can help to overcome these barriers:

A	B	C
Regulatory & Market Support	Increased Investment Opportunities	New Technologies & Channels

It should be noted that these categories are not necessarily mutually exclusive, and elements from each have been combined in many programs. This section is meant to underscore the strengths and weaknesses of each of the key levers and the market conditions under which they have been most successful.

A. Regulatory & Market Support

Governments around the world increasingly understand the value of electronic payments when compared to cash across a number of dimensions. For instance, some countries are focused on greater financial inclusion and thus are seeking to broaden participation of their population in basic banking products and services. Others are concerned about the size and scope of their shadow economies. Still others wish to pursue the general economic benefits of electronic payments that flow from reduced friction in payments and more efficient commerce conducted using digital marketplaces.

As a result, more countries are beginning to actively explore ways they can promote the adoption and usage of electronic payments, deploying levers to influence both demand and supply.²⁴

1. Merchant incentives

One of the most straight-forward of all regulatory policies to promote electronic payment acceptance has been the provision of direct incentives to merchants. These incentives have taken a variety of different forms.

- **Subsidized POS terminals**

One key obstacle that a merchant faces in accepting electronic payments is the cost of buying or leasing a POS terminal. Some governments have therefore chosen to offer financial subsidies to merchants to help offset their POS terminal investment costs.

For instance, Argentina has offered a tax credit of up to 30 percent of a terminal cost since 2001, and Uruguay launched a program in 2011 that provides up to 70 percent of the cost of the terminal as a tax credit for small merchants with annual sales up to US\$462,000. Mexico now provides financial support to merchants for the deployment of tablets that can serve as mPOS terminals.

²⁴ Although focused primarily on increasing acceptance, this section will look at supply-side initiatives to the extent that they are designed to drive increased usage of cards and thus heighten demand for greater acceptance infrastructure. Pure supply-side initiatives focused on increasing cards in market are not covered.

3 Opportunities to Accelerate Electronic Payments Acceptance

In Uruguay, the government has worked since 2006 to increase electronic payments, with terminal subsidies a key part of the program. POS terminals grew by nearly 50 percent in this time period, with 2011 marking an acceleration of the growth rate (Figure 18). The growth has been concentrated among smaller merchants (measured as taxpayers in Uruguay) and the proportion of small enterprises and single taxpayers as a portion of total POS terminal ownership increased from below 10 percent to more than 25 percent during this period, which is one clear indicator of the success of the POS subsidies targeted at smaller merchants (Figure 19).

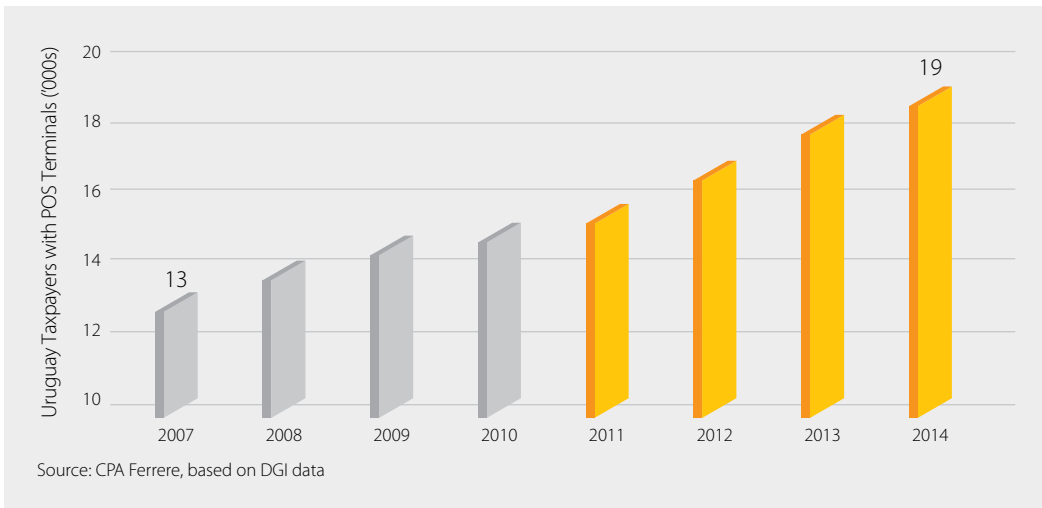


FIGURE 18: Terminal growth accelerated in Uruguay after the launch of the terminal tax credit in 2011

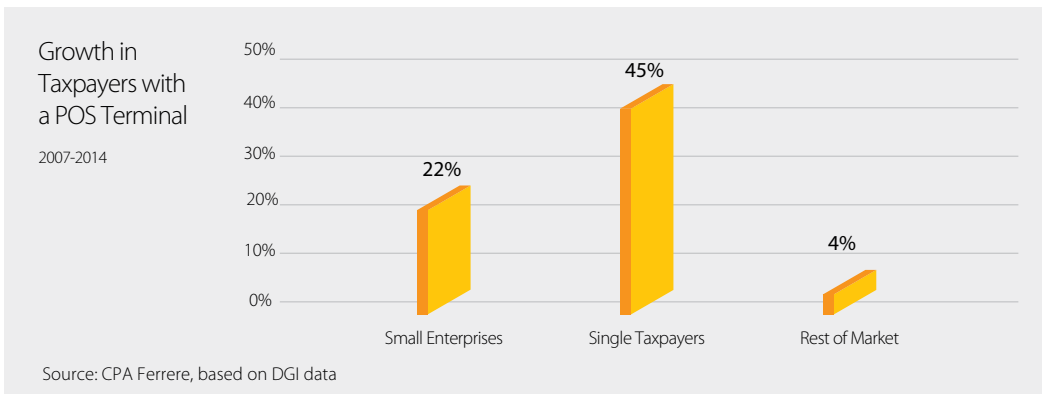


FIGURE 19 SME merchants led the growth in POS terminals in Uruguay

- **Merchant tax breaks**

This policy lever provides direct tax breaks to merchants based upon their total volume of electronic payments. Rather than targeting only expansion of the acceptance footprint, as terminal subsidies do, this lever rewards merchants based on the volume of electronic payments they generate, the goal being to provide the merchant with an incentive to shift more purchases out of the shadow economy. As an illustration, since 1994, South Korea has allowed small business owners to claim a VAT credit for credit and debit card transactions. Table 2 shows how the rate of the VAT credit has varied over time, along with the cap on the maximum amount that could be claimed, which was introduced in 1999.²⁵

²⁵ This policy also covered merchants that used 'cash receipts', whereby cash payments are tracked via electronic receipts that facilitates the government's ability to track total revenue.

	'94-'95	'96-'98	'99	'00-'03	'04-'08	'09-'10	'11
Rate of VAT Credit	0.5%	1.0%	1.0%	2.0%	1.0%	1.3%	1.0%
Maximum Annual Amount	-	-	3M won	5M won	5M won	7M won	5M won
Payment Card Purchase Volume	14.6T won (1994)	← CAGR: 21% →					631.5 T won (2014)

Source: Jeon, 2013; Bank of Korea ECOS.

TABLE 2
VAT credits in South Korea were adjusted based on market conditions

Other policies that have been actively considered (though not yet implemented) by governments include providing a tax rebate if electronic payments exceeded a certain threshold of total sales (such as 50 percent) or a percentage reduction in VAT on all electronic transactions.

POLICY IMPLICATIONS: MERCHANT INCENTIVES

- May be best for markets with limited payment acceptance infrastructure, but also work when the card-issuing base has sufficient scale to promote a “virtuous” network effect
- Straight-forward way to lower costs of electronic payment acceptance and are most effective when combined with consumer incentives, but using caps is important to limit fiscal impact
- Broad policies are best to build strong base of acceptance—focus on general segments like small merchants or specific geographies
- Countries with sufficient terminals but low usage can consider these incentives but should focus on volume-based incentives, such as tax credits
- **Target markets:** Cash-centric, Transition (Limited Acceptance)

2. Regulation of market economics







Some governments have tried to reduce the merchant cost of electronic payments acceptance by directly regulating market pricing and policies. This often takes the form of either imposing limits on the amount that merchants or acquirers must pay to accept electronic payments or allowing merchants the opportunity to offset acceptance costs with fees assessed to consumers at the time of transaction. Each of these approaches is discussed in more detail in this section.

- **Merchant Discount Rate Caps and Regulation**

Intending to control acceptance costs, governments have directly intervened in the marketplace and regulated the amount that merchants must pay for electronic payment services. For card payments, the MDR/MSF is the fee assessed to merchants by acquirers and includes the acquirer’s overall costs of processing the payment and the IRF that is paid by the acquirer to the card issuer. The MDR/MSF is typically assessed against each card transaction and may include both an ad valorem (i.e., percentage of the transaction amount) as well as a per-item fee. In some countries, governments have established regulations that specify a ceiling on the level of the MDR or MSF that acquirers can charge. These ceilings, or “caps,” have in some cases

3 Opportunities to Accelerate Electronic Payments Acceptance

been implemented broadly across all merchant segments while in other cases they have been targeted at specific segments. Examples of these regulatory interventions include:

 Argentina	In 2005, capped MDRs at 3 percent for credit cards and 1.5 percent for debit cards; also required acquirers to charge the same MDR to companies within the same merchant segment.
 China	Capped MDR since 2002 and restricted how that amount can be divided among different fees, including interchange, switch fees and acquirer fees. In 2012, implemented a change to merchant fees that reduced most fees by at least 25 percent.
 Denmark	A cap has been in place since 1990 on domestic transactions, with differentiation between face-to-face and Internet transactions; additionally, since 2005, the domestic debit scheme has had an annual fee per merchant instead of an MDR.
 India	Capped debit card MDR in 2012, introducing two levels of fees—0.75 percent for values at or below Rs 2000 and at 1 percent for values above Rs 2000.
 South Korea	A law went into effect in 2013 that regulated MDR for merchants with an annual revenue below a specific level, with a review every three years to determine the appropriate rate.
 Venezuela	Limit on MDR since 2008 for debit and credit cards, for each merchant segment.

Merchant Discount Rate regulation can stifle innovation and the ability to expand geographically.

Source: Federal Reserve Bank of Kansas City, August 2015 Update.

These types of regulations are usually instituted for specific and unique domestic purposes, but often they do not achieve their desired goal or they have unintended consequences with regard to payments acceptance and usage. In most cases, it can be assumed that the regulated MDR or MSF has been set at a level below that already existing in the marketplace and therefore would result in a reduced cost of acceptance for at least a segment of merchants. However, this pricing intervention and regulation can also lead to market distortions. MDR/MSF caps may prevent acquirers from fully recovering their costs, such as those related to merchant underwriting or the provision of acceptance in remote areas or for smaller merchants. Moreover, by restricting the ability of acquirers to compete for merchants based upon pricing for value, these policies are likely to stifle innovation and ability to expand access geographically. Acquirers may also lack incentives to invest in sub-scale markets and new value-added products and features.

- **Interchange Reimbursement Fee Caps and Regulation**

Some governments have implemented specific pricing caps or controls on IRFs, either for specific segments or market-wide, in order to regulate how much acquirers reimburse issuers for each payment card transaction. These may be either separate from or in addition to MDR/MSF caps. As explained above, domestic IRFs are designed and set to meet local market needs,

since they incent continued investment and development in new technologies and services to improve the customer experience, such as mobile and contactless.

The idea behind this regulation is that with such caps in place, the acquirers would subsequently modify their own merchant pricing accordingly, thereby encouraging more merchants to accept and promote electronic payments.

Where price controls or caps on interchange have been introduced, they have been controversial—and in some cases, they have not worked as originally intended:

- **Australia**

In one of the earliest adoptions of such a cap, unintended consequences of the regulation included a reduction in cardholder benefits, increased cardholder fees and excessive merchant surcharging—all of which have decreased the utility of the product to cardholders.

- **United States**

The Dodd-Frank legislation limiting debit interchange resulted in the introduction of new consumer fees and no demonstrated incremental benefits for consumers, while also leading to distorted pricing for small-ticket merchants.

Studies from the Reserve Bank of Australia²⁶ and the Federal Reserve Bank of Richmond²⁷ in their respective countries have not found evidence of lower consumer prices as a result of these policies.

Even undue pressure on pricing in a market can have adverse impacts. Although interchange has not been formally regulated in Mexico, significant government pressure in 2005 led to agreement with the Mexican Bankers Association to reduce interchange fees, leading credit to have a relatively low rate compared to other markets. Despite these actions in the market, overall acceptance remains low and electronic payments remain underpenetrated. Merchants were also allowed to only accept debit products—few have done so.

Overall, creating pricing inflexibility, as many of these caps and regulations do, means that acquirers might be unable to profitably service certain merchants, which keeps those merchants excluded from the benefits of electronic payments. Other merchants might find the established price too expensive, which thereby stifles electronic acceptance growth. Additionally, limiting the return available to issuers limits innovation in the market and reduces investment in cardholder usage programs for electronic payments. Some regulators have attempted to resolve pricing inflexibility—such as the “one size fits all” issue, whereby the pricing mechanism creates transactions that are improperly priced for certain merchant segments—by imposing blended averages that permit IRF that can be above or below the regulated rate, so long as the overall rate in the market averages to the regulated rate. A good example is Canada, which gives payment networks the ability to balance different types of transactions to maximize the incentives for electronic payment usage.

- **Regulation of Payment Network Pricing Policies and Rules**

One of the key drivers of growth of major electronic payment schemes, such as Visa, MasterCard

²⁶ Reserve Bank of Australia, 2008.
²⁷ Wang, 2014.

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and American Express, has been their ability to provide a consistent payment experience to their cardholders globally. To accomplish this they have put in place rules that assure customers that their cards will be accepted without any unnecessary fees, surcharges or penalties imposed by merchants. These rules also seek to prevent merchants who agree to accept a payment brand from using acceptance fees to discriminate against one brand in favor of another.

One of the regulatory mechanisms that some governments have chosen is to restrict card schemes from enforcing these types of rules. By providing merchants with the ability to assess a separate fee for accepting certain forms of electronic payments, these governments seek to allow the merchant the opportunity to recover some of the costs of acceptance from the consumers who prefer to pay using that method. In some markets, such as Australia, the government has viewed surcharging as a way to provide better price signals for electronic payment to the market and address the perception that cash payers were subsidizing the cost of acceptance via higher prices overall.

Where it has been allowed, surcharging has taken several different forms. Some regulators have required merchants to allow cardholders to pay with at least one surcharge-free electronic payment method, while others impose no restrictions. In a few cases, governments (e.g., Australia) have had to further step in to mandate a “reasonable” level of surcharging—directly tied to the actual cost of acceptance—as some merchants were implementing additional fees that were disconnected from the actual cost of accepting the payment method, turning the surcharge into another revenue source. Table 3 provides examples of countries where the government has intervened regarding surcharging and/or discounts.

Surcharges may allow merchants to offset some of the costs associated with accepting electronic payments. However, government support for surcharging risks devaluing the benefits of card acceptance to merchants, since it considers the cost without accounting for any of the associated benefits to merchants. In many markets, surcharges often work against growing electronic payments, since the fees can act as a clear deterrent to electronic payment usage, as many consumers tend to revert to cash or non-electronic means of payment. As a result, even if acceptance increases, there may not be an accompanying increase in electronic payment volume.

Surcharges & Discounts	Surcharges
<p>United States (surcharging on credit only; also controlled by state laws).</p>	<p>Australia Israel New Zealand Switzerland</p>
<p>European Union: Per the Payment Service Directive, payment service providers in Europe are not allowed to prevent merchants from surcharging or offering discounts; however, Member States in the EU can limit these. As a result, countries in Europe typically either allow surcharging or allow discounts while banning surcharges. In 2015, revisions to PSD were agreed upon to ban surcharging on interchange-fee-regulated payment instruments but allow surcharging on non-interchange-fee-regulated instruments.</p> <p>Source: Federal Reserve Bank of Kansas City, August 2015 Update.</p>	

TABLE 3
Government actions on surcharging and discounts

POLICY IMPLICATIONS: REGULATION OF MARKET ECONOMICS

- May lower cost to merchants in short term, but these types of policies stifle expansion of electronic payments in long run due to reduced incentives for investment
- Allowing surcharges often incents consumers to prefer cash, which is usually not surcharged. There must be surcharge-free options in the market to promote reduced cash usage
- Intervention frequently requires significant, ongoing government role in the market, including regulation, caps, etc.
- If deployed in a mature market, risks creating imbalance in an otherwise functioning market, such as excessive surcharging

3. Consumer incentives

Another means of expanding electronic payment acceptance is by increasing the number of consumers with payment cards and/or inciting more consumer usage of cards, thereby motivating merchants to expand acceptance in order to meet the payment needs of their customers. Since under-reporting sales (a key component of the shadow economy) is typically a practice that only benefits merchants, regulators recognize that increasing demand for electronic payments can be a means to “push” greater merchant acceptance.

- **VAT reductions**

One approach to consumer incentives taken by some countries in Latin America has been a reduction in the VAT paid at the point of sale for transactions completed using payment cards. Table 4 shows how these VAT reductions have been implemented across different markets in this region.

At the same time, or sometimes independently, governments in Latin America have also instituted onerous VAT withholding requirements, whereby acquirers must withhold a

TABLE 4
Latin American markets use VAT rebates as incentives

Country	VAT Rate	Rebates Offered ²⁸ (years in force)
Argentina	21%	<ul style="list-style-type: none"> • 5% on debit (2001-) • 3% on credit (2003-7) • 15% for purchases on social benefit card (2004-)
Colombia	16%	<ul style="list-style-type: none"> • 2% on debit or credit (2003-2014)
Uruguay	22%	<ul style="list-style-type: none"> • 9% on debit or credit in restaurants (2006-) • Tax reduction for fuel purchases at border crossing points (2007-) • Full rebate for purchases using social benefit card (2012-) • 4% on debit and 2% on credit (2014), reduced to 3% on debit and 1% on credit in 2015 (debit to reduce to 2% and credit to phase out in 2016)

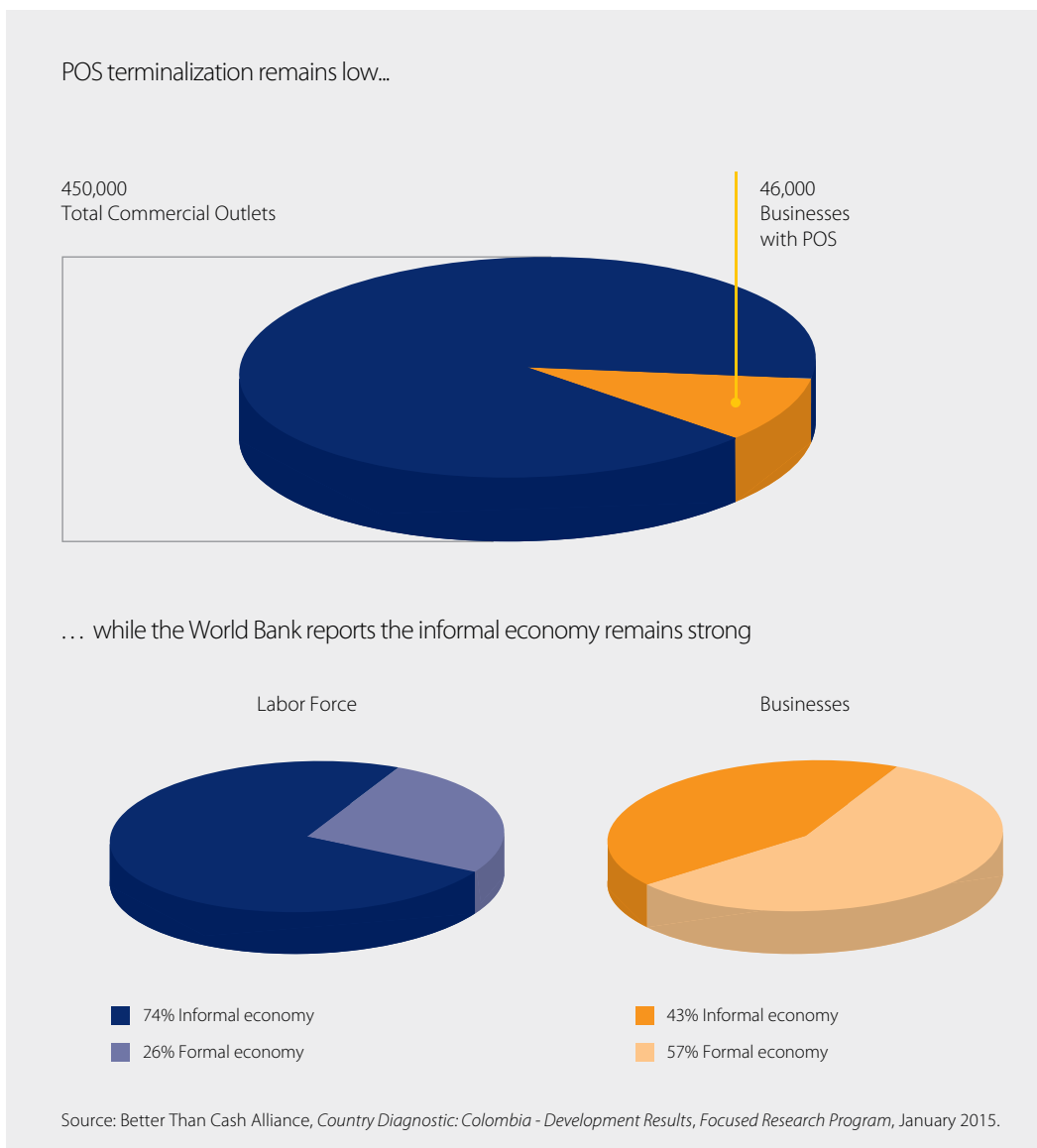
²⁸ Rebates are shown as percentage points of VAT.

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percentage of VAT for all transactions conducted with payment cards. For some markets and segments, acquirers must withhold as much as 25 percent of the VAT owed by the merchant.

Not all of the VAT rebate programs are successful at increasing adoption of electronic payments. Colombia's policies had limited success in providing sufficient incentive to consumers. A cumbersome administrative process requiring validation by the tax authority existed to reimburse the VAT rebate to the cardholder, as contrasted with markets such as Uruguay that applied the rebate automatically at the POS. On the merchant side, the acquirers were required to withhold VAT from the merchant (10 percent of VAT, or 1.6 percent of the transaction value), providing them with little incentive to promote electronic payments. This was compounded by burdensome application, underwriting and onboarding processes from acquirers (Figure 20).

FIGURE 20
Colombia's POS terminal program had mixed success in reducing the informal economy



In recent years, Uruguay has made a concerted effort to promote financial inclusion and increase economic formalization by promoting the usage of electronic financial services. These actions did show benefits in specific areas.

For instance, credit card transactions on fuel purchases near the Argentina border increased fivefold after the 2007 policy, representing the re-capture of transactions that had previously occurred in Argentina.

More recently, in 2014 Uruguay passed the Financial Inclusion Act (LIF), which contained numerous provisions relating to payment card use. The primary component was a reduction in VAT (standard rate of 22 percent) for purchases via debit card and credit card. The reduction was tiered by product and scheduled to decrease over time.

Initial analysis one year into the program indicates that the debit card market share more than doubled. Nearly 90 percent of this increase was assessed to have come from an increased number of cards in use, which matches a survey that found that more than 80 percent of credit and debit cardholders who increased their card use since the LIF was enacted claimed to have done so as a substitution for cash. A key element of the program's success has been the expansion of the POS network that has increased the network.

The program's first year appears to have been a success, and an initial analysis estimates that the program will achieve breakeven in three years (2017), meaning the incremental VAT generated through economic formalization will make up the loss in tax revenues associated with the VAT rebates.

Results Summary

- POS terminals increased by more than 50 percent from 2007 until 2014
- Debit market share more than doubled to 15%

Source: CPA Ferrere, based on data from Central Bank of Uruguay and DGI.

Year	Policy enacted
2006	<ul style="list-style-type: none"> • Reduced VAT by 9 points for purchases with cards at restaurants and other tourist locations
2007	<ul style="list-style-type: none"> • Reduced tax on fuel purchased at border with Argentina (expanded to Brazilian border in 2014)
2011	<ul style="list-style-type: none"> • Implemented tax incentives for deploying POS terminals
2012	<ul style="list-style-type: none"> • Social benefit card purchases exempted from VAT • Foreign cards exempted from VAT at restaurants and other special segments

VAT Reduction Schedule			
	AUG 2014	AUG 2015	AUG 2016
Credit Cards	2%	1%	-
Debit Cards	4%	3%	2%

Debit's market share in Uruguay more than doubled to 15 percent in second half 2014.

Source: CPA Ferrere, based on data from Central Bank of Uruguay

• **Income tax reductions**

Another variation of the consumer tax incentive programs is to offer income tax reductions based upon electronic payment usage. For instance, South Korea launched a policy in 1999 whereby individuals were eligible for an income tax deduction on the amount of spend on payment cards that exceeded a certain threshold of their personal income, with a cap of three million won (approximately US\$2,750). When first enacted, the deductible level was 10 percent of the eligible spend, with eligible spend encompassing all spend on cards that exceeded 10 percent of personal income. More recently, the government has prioritized debit—deductible levels are currently 15 percent of eligible spend for credit and 40 percent for debit (with eligible spend being that greater than 25% of personal income), and the credit deduction will phase out in 2016.

CASE STUDY

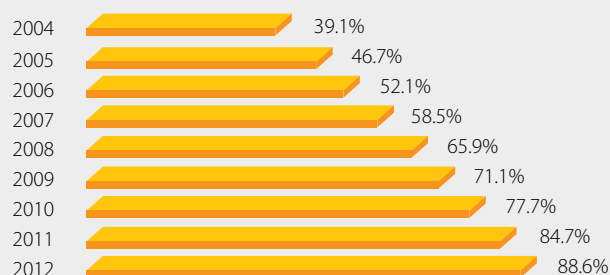
SOUTH KOREA TAX POLICY

South Korea has undertaken a concerted, multi-year effort aimed at reducing the country's shadow economy by promoting the usage of electronic payments—even developing a formalized electronic receipt system to have a central database for reporting and tracking cash payments. Among policies deployed, there were three key initiatives:

1. Income tax reductions, dependent upon using electronic payments
2. VAT credits for merchants based upon electronic payments
3. Mandatory card acceptance for merchants with more than \$20,000 in sales (this threshold has decreased over time)

The results show a significant increase in the economy's formalization in the past 10 years in terms of income "visible" to tax authorities.

Proportion of Taxable Income Visible to Tax Authorities through electronic payments and tracking



Source: National Tax Authority of Korea, *Annual Report 2015*

South Korea's increase in visible income has led to an increase in reported income and thus higher tax revenue

In 2005, gas stations in Mexico did not accept electronic payments. The government then required corporations and individuals to use electronic payments in order to deduct fuel consumption on income taxes. As a result, acceptance increased to nearly 100 percent of fuel merchants, while approximately 13 percent of consumer expenditures on fuel were paid with cards in 2013. Mexico has also put in place a similar program for doctors and schools, though with limited success in encouraging merchant acceptance.

• **Lotteries**

Another consumer-oriented measure meant to promote greater electronic payment acceptance has been government-sponsored lotteries. Consumers are entered into regular drawings every time they complete a purchase using an eligible electronic payment method. Governments anticipate that the funds invested in lottery payouts from these programs will be more than offset by higher tax receipts from merchants drawn out of the informal economy. Three countries provide examples of various lottery implementations:

• **South Korea**

Implemented in 2000 to incent low-income consumers who did not meet the requirements for the tax reduction incentive (discussed above). It consisted of monthly drawings on national TV with prizes up to 100 million won (approximately \$85,000). Lotteries were discontinued once card use became more common.

• **Mexico**

Lottery provides refunds of the purchase up to a certain amount, when cards are used during a certain time of the year. During the 2014 lottery, debit card purchases were 12 percent higher versus prior year.²⁹

- **Costa Rica**

Although acceptance is generally good, it has used lotteries to drive payments in targeted segments. For every purchase above \$5 made via electronic payments, the consumer receives one ticket; in health care, consumers receive two tickets per transaction. There was a quarterly lottery draw, with winnings deposited in a bank account.

POLICY IMPLICATIONS: CONSUMER INCENTIVES

- May be best suited for markets or segments where consumers are accustomed to paying in cash and/or a large shadow economy exists that reinforces the merchant preference for cash
- Broad programs such as lotteries are more effective in incenting wide usage and are best suited for countries in early stages of electronic payments
- Adjusting programs over time is critical—important to outline clear metrics to define success and program sunset
- Ought to be combined with merchant incentives to lower cost of acceptance and create consumer “pull”

Target markets: All markets

4. Disincentives for cash

Disincentives for cash usage have been used to promote greater electronic payment usage and acceptance, including taxes and legally imposed limits on cash, and mandates for electronic payments.

In Mexico, the government implemented a tax on cash deposits in 2008, whereby account holders would have to pay a two-percent tax on deposits over US\$2,500 per month. In 2010, the tax was raised to three percent while the ceiling on deposits was lowered to US\$1,200 per month. The tax was eliminated in 2013, with no conclusive results as to its impact on the amount of cash in circulation. In Uruguay, cash transactions above \$5,000 in local currency equivalent were prohibited by law in 2014. In Europe, more than 10 countries have also introduced limits with fines for violators and these limits have decreased over time. Italy reduced its limit three times between 2010 and 2011, and France dropped its limits from €3,000 to €1,000 in September 2015.³⁰

However, the effectiveness of these limits has been questioned, since they can actually serve as an incentive to keep cash outside of the banking system in order to avoid triggering the limits.

Another option is to mandate the usage of electronic payments for certain transactions, thereby forcing the adoption of electronic payments and pushing merchants out of the shadow economy. South Korea mandated card acceptance for merchants with sales above a specified threshold, currently \$20,000—this was a key initiative in their multi-pronged strategy to increase electronic payment volumes. In 2014, Italy required merchants and professionals to accept debit cards for transactions above €30, thereby ensuring consumers could use at least one form of electronic payment for larger transactions. However, to be effective, these measures require strong enforcement mechanisms to overcome the inherent resistance of some consumers and merchants to changing their behavior.

²⁹ Mexican Bankers Association, 2014.
³⁰ European Consumer Centre France.

POLICY IMPLICATIONS: DISINCENTIVES FOR CASH

- May be best suited for markets or segments where a large shadow economy exists that reinforces the merchant preference for cash
- Taxes or bans on cash have proven difficult to enforce, in particular on POS transactions—markets must have effective levers to enforce regulations if programs are to succeed
- Restrictions on ATM or bank transactions easier to enforce but create incentives to retain cash outside of banking system
- Best deployed in conjunction with other policies to incent electronic payments—on their own, will not change underlying preference for cash

Target markets: Cash-centric, Transition (Limited Consumer Adoption)

5. Government adoption of electronic payments

Another lever that has been used is increasing use of electronic payments by governments. Such policies include disbursing funds electronically from government programs, enabling acceptance for payments to the government, and increasing the usage of products such as purchasing cards and T&E cards by government employees. By “setting an example,” governments can be leaders in the adoption of electronic payments and further reinforce a shift away from cash and other paper-based forms of payment in the country.

- **Acceptance of electronic payments**

By increasing acceptance of electronic payments for government services, governments are able to both take advantage of the efficiencies and accountability of electronic payments and providing a forum for consumers to become accustomed to using cards in trusted environments. Additionally, electronic payments also facilitate remote payments more readily than cash or check, thereby opening the door to e-government services.

For markets in which transportation is under government control, introducing electronic payments for transit purchases is another way to expand acceptance. Frequent transit payments, often daily, can help consumers become acquainted with and see the benefit in using electronic payments. In addition, new technologies such as contactless and mobile can improve the customer experience by making transit fare purchases speedier and seamless. Electronic payments can also have a positive operational impact on transit, since they can facilitate the integration between different modes of transport (via integrated ticketing and payment) and even allow system operators to obtain insights into their customer base that would otherwise be difficult in a predominantly cash-based system.

Tax collection is another area of opportunity, particularly for payments that occur on a regular basis. Not only does electronic payment acceptance help taxpayers transition away from large cash or check payments, but it also helps to increase the transparency and accountability of the tax system. Furthermore, it provides governments with the opportunity to deploy enhanced financial controls and more robust accounting, while decreasing paperwork and simplifying processes.

As an example, Romania established a national system for POS and online tax payments via payment card; and subsequently tax payments by card increased 34 percent year-over-year.³¹ Figure 21 shows how markets that have significantly reduced paper-based payments for tax payments over the last five years have also seen a reduction in paper-based payments for overall consumer transactions.

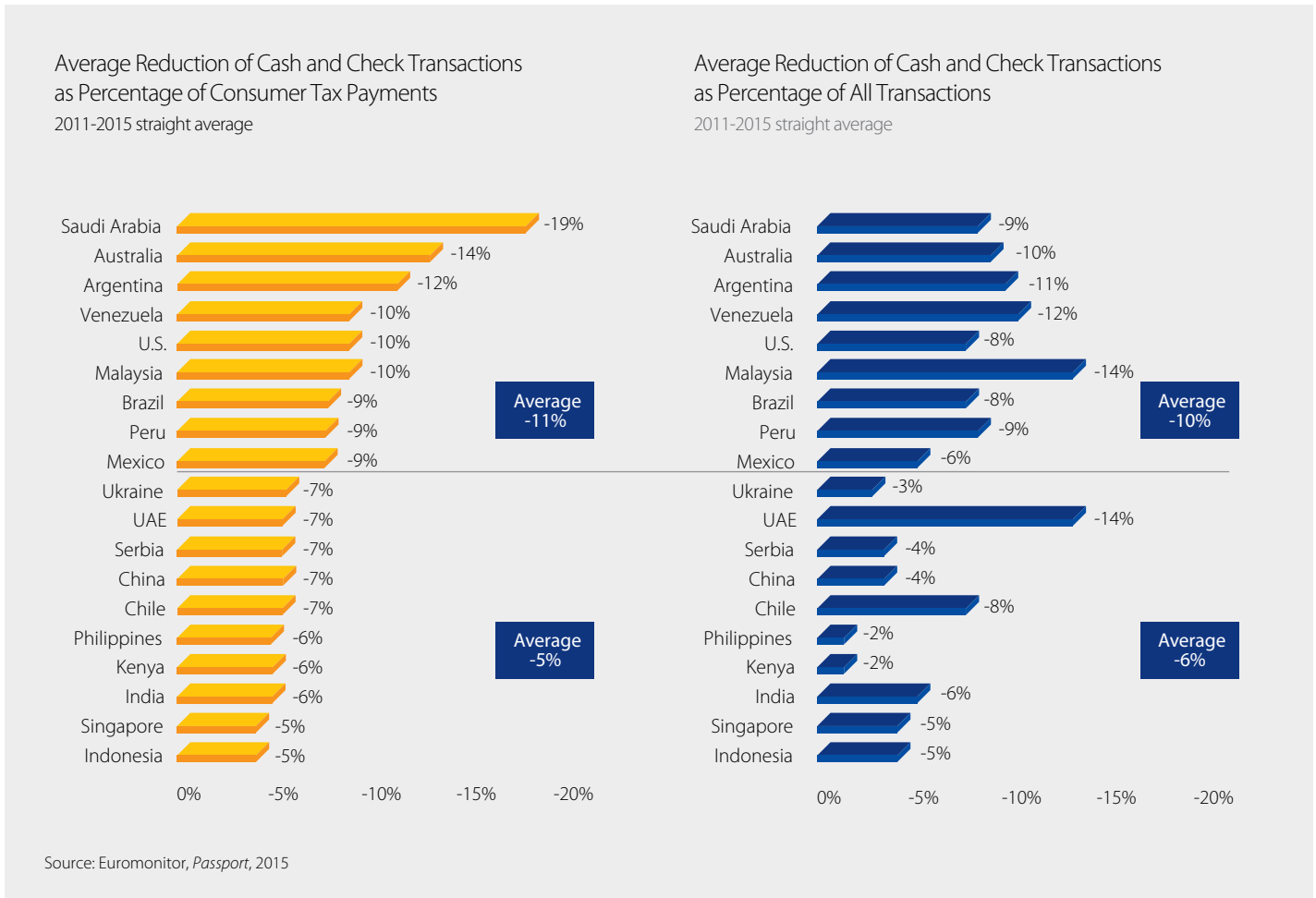


FIGURE 21
Countries with increased electronic tax payments show greater electronic payments penetration

- **Electronic distribution of social benefits**

Governments can also directly incent consumers by distributing social benefits such as food or medical expense vouchers onto payment cards or other means of payment which then must be used at the POS to redeem the benefits. Moving away from cash payments or paper vouchers also has the benefit of increasing efficiency and reducing program costs while providing the government with tangible data about how beneficiaries use their cards. Simultaneously, the distribution of cards helps to address financial inclusion by introducing recipients to electronic financial services.

This mass distribution of cards also encourages the build-out of a merchant acceptance network. For merchants to accept payment from these programs, they must acquire a POS terminal.

³¹ A.T. Kearney, Visa Europe, and Friedrich Schneider, 2013.

3 Opportunities to Accelerate Electronic Payments Acceptance

In Brazil, by law, employers have to provide food assistance to employees, and it was mandated that these payments had to be electronic. The Visa Vale prepaid card was introduced as the mechanism for payment, and the widespread distribution of these cards spurred an increase in electronic POS terminals as merchants rushed to accept these cards.

Similarly, in the Dominican Republic, the government introduced the Solidarity Card. This program provides a single distribution mechanism for up to 10 different social benefit programs. Acquirers had to invest in developing acceptance to support the many small merchants that were certified to participate in the programs. More than 4,800 terminals were installed, each of which was capable of accepting the Solidarity Card along with most other types of card payments.

FIGURE 22
The Solidarity Card helped transition the Dominican Republic's social benefits to electronic access



These types of programs can work in conjunction with other government programs aimed at increasing financial inclusion. Examples of programs that initially focused on increasing access include Colombia's use of a mobile wallet to support distribution of payments under its social transfer programs and Mexico's introduction of bank accounts in 2011 with tiered Know Your Customer (KYC) requirements, which allowed consumers to sign up for limited, low-value bank accounts with fewer onboarding requirements. Including incentives that help increase acceptance is one way to leverage existing programs in order to increase merchant acceptance, thereby adding value to the overall program and increasing chances of success.

POLICY IMPLICATIONS: GOVERNMENT ADOPTION OF ELECTRONIC PAYMENTS

- Assists in providing increased government transparency and aids in reducing corruption, all while lowering the cost of acceptance and distribution of funds
- Allows governments to lead by example in adopting electronic payments
- Avoid explicit fees for electronic payments, since they may create dissonance due to the extra cost
- Prioritizing acceptance in public transit systems helps consumers get used to electronic payments and adjust daily habits—make electronic payments a “way of life”

Target markets: Cash-centric, Transition (Limited Acceptance)

B. Increased Investment Opportunities

In order for electronic payments to succeed in a market, there needs to be a critical mass of both issuance and acceptance. In some markets, banks are quite successful in distributing payment cards to many of their customers, but these efforts are frequently met by a lack of merchant locations where the cards can be used. In these cases, the issuing banks (and sometimes the network schemes) find themselves motivated to further the usage of their cards by providing investments and incentives to merchants to accept electronic payments. These market-driven programs can take the form of either direct investments into acceptance development funds or through promotional pricing designed to temporarily lower the cost of card acceptance in targeted segments.

1. Issuer-funded investments for acceptance

An approach that has been used in some markets to incent increased merchant acceptance is driven by a coalition of issuers and industry partners. This Acceptance Development Fund program typically involves:

- Investing a percentage of issuer transaction revenue (e.g., IRF) into a fund managed by a third party that drives new initiatives to grow acceptance
- Requiring all issuers within a specific network scheme to participate since all issuers stand to benefit from the increase in payment acceptance
- Establishing a framework for funds management and program administration

Typical investment outlays include subsidies for terminal installations, new technologies to help grow specific channels and specific programs targeted at new segments. Investment also typically goes toward marketing and education aimed at improving card acceptance practices (for instance, training on best practices for risk management to aid with expanding into eCommerce acquiring).

Acceptance Development Funds have been successfully deployed in several countries, including Indonesia (see case study) and Poland. In Poland, the Acceptance Development Fund was established in 2009 and focused on the deployment of new POS terminals in the market, primarily in new merchant segments and markets outside of Tier 1 cities. The program funded 20,000 terminal deployments in the first year, and eventually funded more than 200,000 terminals overall, in a market with 450,000 total terminals.

The program is seen as helping to contribute to the more than 100-percent growth in the value of consumer payment card transactions from 2009 to 2014, during which time the value of consumer cash payments grew just five percent.³² Much of this growth came in merchant segments known for underreporting sales, such as food and beverage retailing, restaurants and hotels.

The Acceptance Development Fund in Poland deployed 20,000 terminals in the first year, eventually funding over 200,000.

Source: Visa Europe.

³² Euromonitor, *Passport*, 2015.



ACCEPTANCE DEVELOPMENT FUND

Indonesia

In 2010, the Indonesian market was one of the world's 20 largest economies with more than US\$700 billion in GDP but still had more than 85 percent of personal consumer expenditure made by cash. Despite its growing middle class and relatively strong cardholder base, less than four percent of Indonesia's estimated 15 million businesses had a POS terminal. The acceptance and volume that existed was concentrated in Indonesia's seven main cities, which accounted for an estimated 80 percent of the terminals and spend. Jakarta alone contributed more than 50 percent of the volume despite having less than 10 percent of the country's population. As a result, there was a significant

opportunity to increase acceptance, particularly in Tier 2 cities.

With issuing institutions in agreement, the program was launched in April 2011 for an initial run of five years. Contributions to the fund came from both the issuers and Visa in a manner designed to scale with payment volumes. A team was established to manage the fund, with a governance structure and reporting to ensure proper oversight.

Investment was directed into four pillars, creating over 20 distinct programs.

Geographic Expansion

POS incentives for acquirers to deploy terminals at new merchants in Tier 2 cities

New Acceptance Channels

Promote emerging channels, including eCommerce, mCommerce, mPOS and contactless

Segment Development

Broaden acceptance, including fuel, public transport, Quick Service Restaurants (QSRs), convenience stores and healthcare

Quality Assurance

Improve acquiring industry practices and sophistication (risk, business and technical skills)

The fund has achieved its goals to date. The additional volume has provided a positive return on investment to the issuers, and Visa data reveals that usage of cards increased even at existing merchants, indicating there was a broader impact. There is good momentum and interest on all sides to extend the program for an additional five years until 2020.

Malaysia

In late 2014, the Central Bank of Malaysia enacted a payment card framework, one tenet of which is to promote greater usage and acceptance. One of the key targets for the framework is the achievement of 800,000 POS terminals by 2020. Under this framework, the payments industry has set up a Market Development Fund (MDF) whereby 0.10 percent of credit card transaction value can be diverted from issuers in order to fund the deploy-

ment of POS terminals. Funds will be collected on a quarterly basis, with POS targets and distribution to be determined by the industry, within the guidelines of the government's objectives. The Malaysian government will provide oversight to the industry and approve the program constructs, but the programs themselves will be managed by a third party selected through open tender.

Sources for Indonesia: World Bank (GDP); Euromonitor (cash volume); Visa (acceptance and spend); Badan Putan Statistik (population). Estimates on terminal and spend concentration based on industry feedback to Visa.

In Indonesia, the deployment of 88,000 new POS terminals and expansion in new channels spurred a 30-percent acceleration in payment volume growth.

Source: Visa

To create an additional incentive, in markets where banks face priority lending quotas, the ability to classify acceptance investments as contributions to fulfill these targets would provide an additional incentive to actively accelerate such investments. By decreasing the cost of acceptance in the short run, banks receive tangible payback in the form of a sharp increase in transaction volume over subsequent years.

POLICY IMPLICATIONS: ISSUER-FUNDED INVESTMENTS FOR ACCEPTANCE

- Market-based approach (instead of regulatory-led) best for ensuring private sector market cooperation and alignment
- Works best in markets with sufficiently large, proactive and innovative issuance base to ensure attractive return to issuers and—where clear gaps in acceptance exist—to provide specific targets
- Successful, market-based approach to balancing economics when supported by stakeholders—these investments can help fund the next stage of market development
- Programs can develop a “virtuous cycle” with investment growth driven by initial success
- Creates broader cooperation and alignment among competitors to grow the underlying infrastructure

Target markets: Transition (Limited Acceptance), Electronic

2. Specific merchant segment initiatives

A second approach to issuer-funded card acceptance is through targeted initiatives, including adjustments to IRF, made as part of programs that are tailored to the needs of the merchant segment. As discussed in more detail above, the IRF constitutes a portion of a merchant’s cost of acceptance and typically flows directly to an issuer, helping balance the relative benefits and costs that issuers and acquirers incur in supporting a shared payment transaction.

By temporarily reducing interchange, issuers are in effect helping to subsidize a lower cost of acceptance; and when a critical scale of acceptance develops, the need for such incentives is reduced or eliminated. These programs have been deployed in numerous markets around the world to assist with penetrating new segments, and they often require merchants to meet certain performance levels, such as fraud and chargeback ratios. In markets where this approach has been taken, however, it has often been found to be successful only when used alongside other initiatives, such as rule changes or new technologies.

Segments that have been slow to adopt electronic payments, including Quick Service Restaurants (QSRs), utilities, insurance and bill payments, are common targets for interchange incentive programs. As one example, interchange was rationalized for the insurance and telecom bill pay segments in India in 2009, based on extensive research and impact analysis, and it resulted in a significant increase in debit card usage in those segments.

Debit volume increased by more than 300 percent in the insurance sector and more than 1,000 percent in telecoms in India between 2009 and 2011.

Source: Visa

3 Opportunities to Accelerate Electronic Payments Acceptance

In many cases, interchange relief has not been the sole or even primary motivator for merchant adoption. Contactless is one example of how technology that improves the customer experience has motivated merchants to accept electronic payments. In other cases, rule changes have been crucial to the program's success, such as the "No Signature Required" (VEPS) program to facilitate a seamless customer experience for low-value transactions.

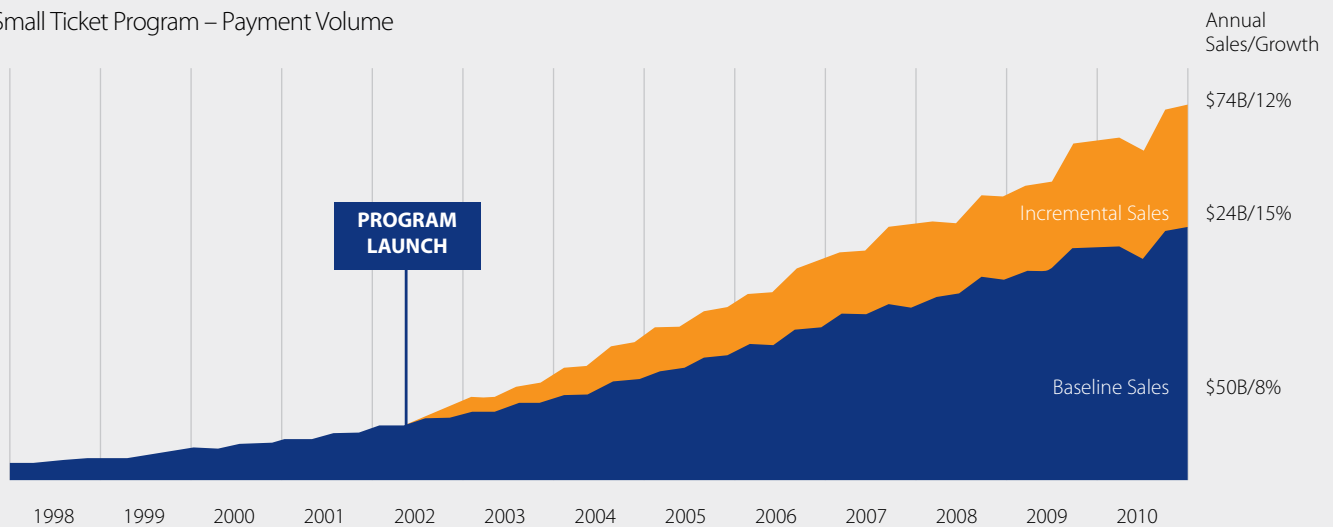
CASE STUDY

UNITED STATES SMALL-TICKET TRANSACTIONS

In 2003, electronic payments had only made a limited penetration into the total amount spent at fast food merchants (QSRs). At the time, Visa transactions only accounted for approximately five percent of the total market spend, and the vast majority of spend remained cash based. This was true for numerous other merchant segments that constituted everyday spend, such as drugstores and parking lots. To better support electronic payments in these small-ticket segments, Visa implemented the following policies:

- Introduced the "No Signature Required" program, removing the requirement for customer signatures for transactions under US\$25
- Deployed targeted interchange adjustments to rebalance the economics for small-ticket merchants
- Supported the merchants with marketing to promote the ability to use electronic payments at the POS

Small Ticket Program – Payment Volume



Source: Visa

The rule change was a key driver, since it maintained a checkout experience similar to cash and actually helped to increase customer throughput. As a result of these changes, the incremental growth in small-ticket volume outpaced growth of the overall market for more than eight years. For QSR merchants, Visa's penetration alone soon accounted for at least 25 percent of the total spend in the market; other segments saw similar increases in penetration.



CASE
STUDY

SEGMENT INCENTIVE RATES IN RUSSIA

In Russia, Visa introduced a program in the high-volume grocery sector to encourage acceptance in the segment. The rate was tiered according to volume of payments, and effective in 2013, merchants had to accept contactless cards at all terminals and participate in the Visa Easy Payment Service, which waives consumer authentication (e.g., signature or PIN) for low-risk

transactions below a certain threshold transaction size.

The program has been a success—volume has grown at a significantly higher rate than overall Visa volume in Russia, particularly since the program changes were made in 2013.

The High Volume Grocery segment in Russia has grown nearly 4x faster than the overall market since the program's launch.

Source: Visa

POLICY IMPLICATIONS: SPECIFIC MERCHANT SEGMENT INITIATIVES

- May be best suited to markets where clear gaps in acceptance exist and there is issuer support to growing market and increasing acceptance
- Specific, targeted programs have highest likelihood of success
- Should be paired with operational or technological changes that provide added value to merchants and improve user experience—creates value for and ensures program support by all stakeholders
- Broad policies are not as successful in long term because they usually limit long-term market development

Target markets: Transition (Limited Acceptance), Electronic

C. New Technologies & Channels

Technological innovations are offering new ways to pay and to accept payment. This offers the potential to accelerate the development of acceptance infrastructure while also enhancing the payment experience, making electronic payments more compelling for both merchants and consumers. These developments provide opportunities to overcome many of the barriers that have slowed acceptance growth to date.

An early example of how technology helped overcome a widespread problem slowing the growth of acceptance was the emergence of EMV chip cards in the 1990s. The EMV technology helped to surmount problems related to the high cost of online authorizations that existed in many countries while still providing an enhanced level of security and risk management. This allowed more merchants to accept electronic payments even when telecommunications were costly or unavailable.

Another recent innovation has been the emergence of payment facilitators, who have both increased market services available to small merchants and introduced new technology and new payment channels to the

market. Marketplaces such as eBay and payment companies such as PayPal were early examples, allowing small and micro-merchants the ability to sell products online and receive payment in a secure and easy manner.

1. New platforms for payment and acceptance

Electronic payments have long relied on the use of plastic cards for completing transactions at a physical point of sale. For other channels, such as eCommerce and bill payment, a card is not necessarily required, as a customer only needs to provide relevant account and security information. These traditional methods of conducting transactions are now starting to give way to new forms of payment that greatly enable electronic payments to expand more rapidly.

- **New modes of access**

Although the plastic card remains the primary form factor for conducting consumer payment transactions in most markets today, new modes of accessing financial accounts are becoming more widespread. The original plastic cards equipped with a magnetic stripe have already widely given way to EMV technology; and contactless issuance is gaining traction in many markets, opening up new channels of acceptance at segments concerned with speed and convenience.

Mobile phones now provide another means by which consumers can access their financial accounts and initiate payments. From SMS messages to payments via Quick Response (QR) codes to “in-app” payments to NFC-enabled phones used at a contactless POS terminals, consumers increasingly have multiple means by which to conduct payment transactions using their phones. In many markets, the phone is on track to be the consumer’s central hub for managing access to payment credentials.

Blockchain technology, which has its most prominent deployment in the virtual currency Bitcoin, is emerging as another means of making payment by enabling direct exchange of value between two parties.

Acceptance is also becoming more deeply integrated into the commerce experience. Merchants are increasingly keeping their customers’ cards on file, meaning they are storing the payment credentials and allowing access to them to initiate payment through multiple channels (online, mobile, mobile apps, face-to-face, etc.). This practice, which is supported by technological advancements and operational changes by payment networks and others, can drastically reduce friction in commerce and support new business models and practices. A prime example of this is the “on demand” economy. Companies such as Uber and Instacart are built upon the ability to charge a customer’s stored payment credential upon the completion of the transaction, without the customer actively having to initiate payment.

Furthermore, there is significant investment being put into the Internet of Things (IoT) to link a variety of objects to the internet with each connected object potentially serving as a POS terminal. Examples include smart refrigerators that automatically order groceries when food runs low and cars that automatically pay for gas or tolls as required. While the mobile phone stands to be the most widespread access device in the near term, additional form factors, aided by mobile and wireless technologies, are likely to emerge as payment platforms in the coming years.

FIGURE 23

NFC-equipped phones are increasingly being used as payment devices

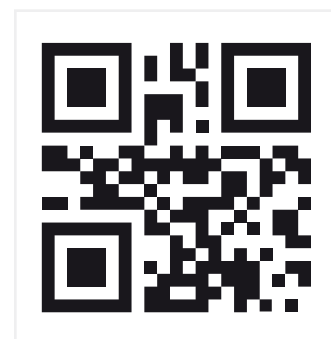


FIGURE 24

QR codes can be scanned to transmit information as part of the checkout or payment process



FIGURE 25

Bitcoin is the most prominent virtual currency using blockchain technology, which represents an emerging way of enabling commerce

Payments providers and card networks support this innovation by testing and supporting different technologies, all of which are designed to securely provide access to the underlying financial account and support transactions that travel over their networks and systems. The mVisa initiative (see case study) provides one example of innovation designed to allow new form factors that can potentially open up new avenues of acceptance.



CASE STUDY

CANADA QUICK SERVICE RESTAURANTS

In 2010, cash still accounted for two-thirds of the payments volume at fast food restaurants in Canada. Some major merchants did not accept electronic payments or only accepted one type or brand, remaining steadfastly attached to cash due to perceived benefits around speed and customer experience.

To increase acceptance, Visa entered into a custom incentive arrangement with a large merchant that also supported the deployment of contactless acceptance infrastructure, which Visa was promoting with other merchants in the market as well.

Benefits of electronic payments to this market included:

- **“Tap and go” user experience** Helped the merchants improve

the customer experience and ensure high throughput, increasing revenue.

- **Reduced cash handling** Decreased amount of contact with unhygienic cash, which is a burden for staff that also handle food.

The shift to contactless was a big hit—already high in card penetration, Canada soon became one of the world’s largest markets of contactless issuance. Within the segment, annual growth rates of electronic payments volume above 30 percent have been seen at many merchants. Overall, cash penetration in the QSR space has decreased more than four percentage points since the introduction of contactless, representing an acceleration of the penetration of electronic payments in a growing market segment.

Contactless transactions in Canada grew to more than 50 percent of total Visa transactions at QSRs within three years of Visa’s program launch.

Source: Visa



CASE STUDY

mVISA

In 2015, Visa announced mVisa, a mobile-to-mobile network solution that is a push payment over the existing Visa network, whereby consumers will be able to push a payment from their own account at a financial institution to an accepting merchant or individual.

It will work on both smartphones as well as feature phones, and support a wide array of POS technologies, including NFC, Quick Response (QR) codes and Bluetooth Low Energy (BLE). For feature

phones, the user will be able to input a unique code in order to facilitate the payment.

mVisa represents a new set of tools to help support new merchants and greater acceptance.

In August 2015, Visa launched an initial trial of mVisa in Bangalore, India, with testing at a significant number of accepting merchants beginning shortly thereafter.

3 Opportunities to Accelerate Electronic Payments Acceptance

- **Low-cost acceptance technology and servicing**

Another important trend driving acceleration of electronic payments has been the greater availability of low-cost acceptance technology. The primary driver of this trend has been the spread of mobile phones, which allows merchants to access telecommunications networks without requiring fixed-line connectivity. With an mPOS device, any phone can become a POS terminal. In addition to the phone and the mPOS device, the only other requirements are usually an application and an account with an acquirer or other provider, such as a payment facilitator.

One of the early pioneers of mPOS, Square, promoted quick onboarding for acceptance of card payments. Acceptance suddenly expanded into areas where, even in developed markets, it had been rare, such as farm stands, plumbers and delivery agents. The company soon moved into larger merchants, rolling out tablet-based POS terminals and penetrating into physical stores, some of which had not previously accepted payment cards. Companies in other markets launched similar programs, such as iZettle in Europe. In response, more established acquirers and payment technology providers introduced their own mPOS products or acquired smaller companies focused on providing solutions to this market. Suddenly, the small merchant was the focus of much activity around expanding acceptance of electronic payments.

The emergence of payment facilitators has been critical to augmenting and facilitating the spread of low-cost acceptance technology. Primarily seen today in emerging markets, they offer a proven model for how small businesses can be brought into the electronic payment ecosystem in emerging markets.



FIGURE 26
mPOS has enabled new consumer payment options

POLICY IMPLICATIONS: NEW PLATFORMS FOR PAYMENT AND ACCEPTANCE

- Programs with significant potential to disrupt are most successful in markets with limited payment acceptance infrastructure and/or cardholder base—will gain momentum earlier and faster
- Market participants must be sufficiently incented to support new and innovative payment form factors
- Regulatory bodies must be proactive in providing a rules and governance framework to manage emerging technologies and channels
- In markets where acquirers cannot support smaller merchants, payment facilitators are key to market expansion
- Limited deployments in specific segments may work best for new platforms, since it takes time to build broad ubiquity

Target markets: All markets

2. Enhancing and securing the customer experience

Advances in technology are increasing the ability to enhance the customer experience by delivering value-added services in addition to payments, while also enhancing the security of the transaction, which is critical for maintaining trust in an electronic payments system.

The migration of transactions to phones and other devices, which support more robust communication mechanisms and enhanced data, now make it possible for loyalty programs to be integrated into the payment experience, as an example. The customer can automatically be recognized and



rewarded as a loyal customer without having to pull out a separate card. The greater security that biometric authorization provides, such as the fingerprint readers on iPhones and other phones, may entice more customers into the world of mobile payments. Continued innovation and product development is important to enhance risk management and security, and it is critical to ensure that they are deployed in markets within a sustainable commercial framework.

- **Focus on commerce enablement**

Many of the technological enhancements discussed above relate to enabling consumers to have a better payment experience. Contactless is one example, since it speeds up the checkout process—this was a significant appeal to merchants in Canada that deployed the technology. It is important, though, not to overlook system innovations and developments that enable the experience. Contactless was enabled by the expansion of the “No Signature Required” program, which in turn was facilitated by improvements in back-end transaction monitoring by networks and issuers alike.

Technology and subsequent changes in consumer behavior are also ensuring that different merchant sales channels, such as in-store and online, are converging as customers demand a commerce experience that spans multiple channels. Known as omnichannel, the idea that the shopping experience can begin in-store, continue on a mobile device and finish online, or vice versa, is an emerging approach to commerce and one that may attract more merchants to digital commerce and electronic payments. As one example of this model, the South Korean store Homeplus created a virtual store, initially in a subway station, by putting up posters that looked like store shelves, allowing customers to shop right from the station platform. Commuters could scan a QR code to build a shopping list and then pay for their order, with the products delivered to their homes.

To support these trends, it is imperative that the payment industry continue to innovate in order to deliver higher levels of security and convenience to new channels.

The recent spread of NFC-enabled wallets, namely Apple Pay, Samsung Pay and Android Pay, is one prominent example. These payment form factors leverage existing payment networks while bringing a higher level of security to transactions. Unique payment tokens are stored in secure elements located on the phone or in the cloud, which ensures sensitive information is not available on the phone or used during a transaction made with the device. Biometric authentication via a fingerprint scanner brings a higher level of security to the authentication process, creating a more secure transaction for both consumers and merchants while also improving the customer experience.

Beyond the mobile wallet, paying through mobile browsers or applications remains a challenging and cumbersome process. One primary driver is the difficulty of filling in the information needed to complete the transaction (e.g., billing address, shipping address, payment information, etc.) on a mobile device. This translates into fewer completed sales—conversion rates have been significantly lower on mobile.

3

Opportunities to Accelerate Electronic Payments Acceptance

Not surprisingly, significant effort is being made to facilitate mobile commerce, particularly in trying to develop ways to pre-fill information or minimize the amount of information entered. Visa Checkout is one such example—it reduces the amount of information a consumer must enter on a mobile phone, allowing customers to check out and purchase with a username and password. Other companies have built tools that rely upon information from the mobile network operator or the phone itself to prefill information or link a customer across multiple merchant websites.

- **Enhancing merchant security**

Significant technological advancements are also occurring on the back-end of a payment transaction, both to enhance the customer experience as well as to ensure payment transactions remain reliable and secure.

One example of such a development is tokenization, which occurs when the sensitive payment account information from a payment device gets replaced with a unique digital token. Two main instances of tokenization are when merchants tokenize payment credentials that they receive and when mobile wallets store payment tokens that are provided by a secure token vault upon approval of the issuer of that payment credential.

A key benefit of tokenization is that it renders the payment information useless if it were to fall into the wrong hands or is stolen in a data breach. As eCommerce and mCommerce grow, stored payment credentials and card-on-file transactions have become increasingly popular due to the convenience they offer customers. However, the information also is valuable to thieves, who have increasingly targeted corporate data systems to steal vast numbers of payment credentials. Tokenization helps render that stored information useless as payment data to all but the secure token vault that has the underlying account information.

As such, tokenization has supported the development of additional services and more efficient purchase experiences—and it has made those models more secure. One example is the “on demand” economy, wherein merchants typically store customer payment information to easily charge the customer upon completion of the transaction. Tokenization is a critical component of this process, since it removes significant risk from the process of storing the payment credentials. Merchants are also increasingly looking at mobile wallets as an efficient means of distributing specific, customized offers to consumers, which provides significant value-added benefits to consumers and merchants alike.

Similarly, improvements to customer authentication and back-end fraud management can support commerce in new and emerging sales channels. Mobile geolocation IDs, which leverage location information on a mobile phone, allow greater certainty that a customer is in the same location as the merchant requesting the authorization. With this ID, financial institutions receive additional data in real time, helping to reduce risk in the system while providing increased mobility to merchants and consumers.



As an example in markets with more limited acceptance of electronic payments, low-cost airlines need low-cost sales channels to reach their customer base as part of their business model. Online and mobile commerce enables such opportunities by removing the need to open and staff physical offices, but they are heavily dependent upon electronic payment methods. By adopting tools such as 3D Secure and fraud scoring, which are becoming standard in markets around the world, these airlines and other merchants are able to utilize these new sales channels without opening their business to undue risk.

POLICY IMPLICATIONS: ENHANCING AND SECURING THE CUSTOMER EXPERIENCE

- Needs to be prioritized in markets with gaps in acceptance due to inferior customer experiences or perceptions of higher risk
- All stakeholders must have the ability to commit funds to investments in security
- For new form factors to be successful, market participants must be sufficiently incented
- Regulatory bodies must ensure flexible and evolving rules and regulations to promote innovation
- Hard to pick winning technology in advance—markets need flexibility to pilot a variety of different approaches; clear industry standards can help technology gain widespread adoption
- Markets earlier in the payments cycle benefit most from basic, customer-facing programs that increase confidence in payment system
- More advanced markets may benefit most from back-end enhancements that support more advanced payment applications

Target markets: All markets

3 Opportunities to Accelerate Electronic Payments Acceptance

Summary of Recommended Policy
Lever Applicability by Market Type

		Cash-centric	Transition		Electronic
			Limited Acceptance	Limited Consumer Adoption	
Illustrative Markets		Egypt Myanmar Guatemala	UAE Indonesia Uruguay	Greece Japan	Israel Hong Kong Canada
Policy Levers	A. Regulatory and Market Support				
	Merchant incentives • Straightforward way to lower cost of electronic payment acceptance • Most effective when combined with consumer incentives	●	●		
	Consumer incentives • May be best suited to counter strong cash preference or shadow economy • Critical to fine-tune programs & use clear success metrics	●	●	●	●
	Disincentives for cash • Proven difficult to enforce due to ability to evade regulation • Best deployed paired with electronic payments incentives	●		●	
	Government adoption of electronic payments • Supports increased government transparency • Opportunity to lead by example, serve as catalyst for other segments	●	●		
	B. Increased Investment Opportunities				
	Issuer-funded investments for acceptance • Successful, market-based approach to balancing economics • Creates broader private sector cooperation to grow infrastructure		●		●
	Specific merchant segment initiatives • May be best suited to close clear gaps in acceptance • Should be paired with operational or technological changes		●		●
	C. New Technologies & Channels				
	New platforms for payment and acceptance • Regulatory bodies must provide supportive rules & governance framework • Market participants must be sufficiently incented	●	●	●	●
	Enhancing and securing the customer experience • Hard to pick winning technology in advance—markets need flexibility • All stakeholders must be able to commit funds to investments	●	●	●	●

Acquirer / Bank Acquirer / Merchant Acquirer

The entity that provides services to merchants or payment facilitators related to clearing and settlement of accepted transactions. In general, the services include receiving and processing the data relating to the transaction for authorization, clearing and settlement.

Authorization

A process for payment cards where an issuer or authorized processor approves a transaction.

Automated Clearing House (ACH)

A network of financial institutions that facilitate electronic transfers, including processing automated electronic deposits into and withdrawals from bank accounts.

Business-to-Business (B2B)

In reference to payments, the exchange of money between businesses (contrasted with exchanges between business and consumers, or governments and consumers).

Consumer Payment Transactions

The sum of card payment transactions (excluding commercial), cash transactions, other paper payment transactions and electronic transactions. Also referred to as *Consumer Transactions*.

Contactless

In reference to the payment industry, a wireless interface used to exchange information between a payment card or other method and an acceptance device such as a POS terminal.

eCommerce

Activities that relate to the buying and selling of goods and services over the Internet.

Electronic payment

A payment made via the electronic exchange

of information and without any exchange of physical documentation such as cash or a personal check. This includes payments made with payment cards (e.g., credit, debit, prepaid) and electronic bank transfers.

EMV technology

Technical specifications developed (jointly by Europay International, MasterCard International, and Visa International - EMV) to provide standards for processing debit and credit transactions and ensure global interoperability for the use of chip technology in the payment industry.

In-Application Payments

Payments made within an application on a mobile phone (as opposed to payments made through the browser program resident on the mobile phone). Typically, the mobile platform provider (either the mobile network operator or the operating system company) facilitates the payment and takes a share of the money spent. Also referred to as *In-app payment*.

Interchange reimbursement fee (IRF)

A transfer fee between acquirers and issuers in the clearing and settlement of an interchange transaction. Typically set by the provider of the payment scheme, the fee helps to achieve the appropriate economic balance between issuers and acquirers by ensuring that the party who receives a higher net benefit from the system relative to their costs reimburse some of the costs of the other party. This fee is normally imposed on each transaction.

Issuer

A member of a payment network (typically a bank or financial institution) that enters into a contractual relationship with a cardholder for the issuance of one or more cards products.

Annex 1

mCommerce

Activities that relate to the buying and selling of goods and services using a mobile electronic device, such as a mobile phone or tablet.

Merchant

An entity that accepts payment for the sale of goods or services. For payment cards, a merchant also must submit the resulting transaction to an acquirer for interchange, directly or via a payment facilitator.

A merchant may be a single merchant outlet or represent multiple merchant outlets. Also known as a *Retailer*.

Merchant Discount Rate (MDR)

The fee, expressed as a percentage of the total transaction amount, that a merchant pays to its acquirer for transacting on a payment card brand. Usually, the IRF is one component of this fee, along with other fees imposed by the acquirer. Also known as *Merchant Service Fee*.

Mobile Point-of-Sale (mPOS) Terminal

A payment acceptance application that uses a portable electronic device such as a smartphone, tablet, or dedicated wireless device. The portable electronic device typically is not solely dedicated to point-of-sale functions and has the ability to wirelessly communicate across open networks.

Near Field Communication (NFC)

A short-range wireless connectivity standard that uses magnetic field induction to enable communication between devices when they're touched together, or brought within a few centimeters of each other.

No Signature Required (NSR)

Card network program that removes the need for merchants to capture the cardholder's signature as part of the cardholder verification and the need to provide customers with a receipt. It is designed for certain merchants in a face-to-face environment for transactions under a specific threshold in order to

speed up the checkout process. In markets with PIN verification, this program could remove the need for cardholders to enter their PINs.

Payment Facilitator

A third party or processor that is not a member of a network that deposits transactions, receives settlement from or contracts with an acquirer on behalf of a merchant.

Point-of-Sale (POS) Terminal

The electronic device used for authorizing and processing payment card transactions at the point of sale.

Quick Response (QR) Code

A machine-readable code consisting of an array of black and white squares, typically containing information about the item to which it is attached. It can be optically read, for instance by the camera on a smartphone or a merchant's POS system.

Real-Time Gross Settlement (RTGS)

A funds transfer system where transfer of money or securities takes place from one bank to another on a "real time" and "gross" basis. Settlement in "real time" means the payment transaction is not subjected to any waiting period, and the settlements occur on an individual order basis without netting debits with credits across the books of a central bank.

Surcharge

A fee assessed to a customer by a merchant that is added to the transaction amount for the acceptance of a particular payment method.

Token

A numeric identifier issued under specific guidelines that can be used in place of an account number to initiate a transaction or can be stored by a merchant, payment processor, or other stakeholder in place of an account number. It is linked to the account number by the token provider but by itself

cannot initiate a payment transaction if the information is compromised. To replace the account number with the token is called *tokenization*.

Total Consumer Expenditure / Personal Consumption Expenditure (PCE)

Consumer expenditure comprises personal expenditure on goods - durable, semi-durable and non-durable - and on services in the domestic market, including the imputed rent of owner-occupied dwellings, the administrative costs of general insurance and of life insurance and superannuation schemes. Consumption expenditure in the domestic market is equal to consumer expenditure by resident households plus direct purchases in the domestic market by non-resident households and minus direct purchases abroad by resident households.

Transaction Account

Accounts held with banks and/or other authorized or regulated payment service providers that can be used to make and receive payment and to store value.

Value-Added Tax (VAT)

A type of consumption tax that is placed on a product whenever value is added at a stage of production and at final sale. The amount of value-added tax that the user pays is the cost of the product, less any of the costs of materials used in the product that have already been taxed.

Papers and Articles

Agbaje, Opeyemi and Kehinde Ayanbadejo (2013), *Electronic Payments and Economic Growth in Nigeria*, RTC Advisory Services Ltd, available at <http://www.proshareng.com/reports/5834/Electronic-Payments-and-Economic-Growth-in-NigeriaIndependent--RTC>

A.T. Kearney, Visa Europe, and Friedrich Schneider (2013), *The Shadow Economy in Europe*, 2013, available at <https://www.atkearney.com/documents/10192/1743816/The+Shadow+Economy+in+Europe+2013.pdf>

Bank of International Settlement Committee on Payments and Market Infrastructures and World Bank Group (2015), *Consultative report – Payment aspects of financial inclusion*, available at <http://www.bis.org/cpmi/publ/d133.pdf>

Better than Cash Alliance (2015), *Country Diagnostic: Colombia – Development Results, Focused Research Program*, January 2015, available at https://btca-prod.s3.amazonaws.com/documents/1110/english_attachments/Colombia-Diagnostic-Long-ENG-Jan-2015.pdf?1442819373

BMO Bank of Montreal, CIBC, National Bank of Canada, RBC Royal Bank, Scotiabank and TD Bank Group, *Payments Security White Paper*, 13 July 2015, available at <http://www.cba.ca/contents/files/submissions/misc-2015-paymentssecurity-whitepaper-en.pdf>

Brits, Hans, and Carlo Winder (2005), "Payments are No Free Lunch," *De Nederlandsche Bank Occasional Studies*, 3(2), available http://www.dnb.nl/en/binaries/Occstud32%20web_tcm47-146645.pdf

Cirasino, Massimo and Jose Antonio Garcia (2008), "Measuring Payment System Development – Working Paper," *Financial Infrastructure Series, Payment Systems Policy and Research*, World Bank, available at <http://documents.worldbank.org/curated/en/2008/01/10709895/measuring-payment-system-development>

CPA Ferrere, "Electronic Payments, Economic Formalization and Financial Inclusion: The Uruguayan Case – Preliminary Impact of the Financial Inclusion Act [LIF] on Economic Formalization and Payment Card Use," 28 July 2015.

Denecker, Olivier, Florent Istace and Marc Niederkorn (2013), "Forging a path to payments digitization," *McKinsey on Payments, Number 16*, McKinsey, available at http://www.mckinsey.com/~media/mckinsey_dotcom/client_service/financial%20services/latest%20thinking/payments/mop16_forging_a_path_to_payments_digitization.ashx

Federal Reserve Bank of Kansas City (2015), "Public Authority Involvement in Payment Card Markets: Various Countries, August 2015 Update," available at https://www.kansascityfed.org/publicat/psr/dataset/pub-auth_payments_var_countries_August2015.pdf

Hayashi, Fumiko and William R. Keeton (2012), "Measuring the Costs of Retail Payment Methods," *Federal Reserve Bank of Kansas City, Economic Review*, Second Quarter 2012, available at <https://www.kansascityfed.org/publicat/econrev/pdf/12q2Hayashi-Keeton.pdf>

Annex 2

Jeon, Byung Mok (2013), "Fight against Underground Economy: Credit card and cash receipt income deduction policy," *Paper prepared for KWE 12th conference at Tehran (Isfahan) from June 25 to June 27, 2013*, Korea Institute of Public Finance, available at <http://www.akes.or.kr/eng/papers%282013%29/25.full.pdf>

Moody's Analytics (2016), *The Impact of Electronic Payments on Economic Growth*, available at <https://usa.visa.com/dam/VCOM/download/visa-everywhere/global-impact/impact-of-electronic-payments-on-economic-growth.pdf>

National Bank of Belgium (2006), "Costs, Advantages and Drawbacks of the Various Means of Payment," *Economic Review*, June: 41-47, available at https://www.nbb.be/doc/ts/publications/economicreview/2006/ecorevi2006_h3.pdf

Reserve Bank of Australia (RBA) (2008), *Reform of Australia's Payments System: Preliminary Conclusions of the 2007/08 Review*, April 2008, available at <http://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/regulatory-reviews/review-of-card-payment-systems-reforms/pdf/review-0708-pre-conclusions.pdf>

Schmiedel, Heiko, Gergana Kostova and Wiebe Ruttenberg (2012), "The Social and Private Costs of Retail Payment Instruments: A European Perspective," *Occasional Paper Series, No. 137*, The European Central Bank, available at <https://www.ecb.europa.eu/pub/pdf/scpops/ecbocp137.pdf>

United Nations Conference on Trade and Development (UNCTAD) (2015), *Information Economy Report 2015: Unlocking the Potential of E-commerce for Developing Countries*, available at http://unctad.org/en/PublicationsLibrary/ier2015_en.pdf

Wang, Zhu, Scarlett Schwartz, and Neil Mitchell (2014), "The Impact of the Durbin Amendment on Merchants: A Survey Study," *Federal Reserve Bank of Richmond Economic Quarterly, Volume 100*, Number 3, Third Quarter 2014, Pages 183-208, available at https://www.richmondfed.org/-/media/richmondfedorg/publications/research/economic_quarterly/2014/q3/pdf/wang.pdf

Data Sources and Statistics

Badan Putan Statistik, available at <http://www.bps.go.id/>

Bank of England, *Quarterly Bulletin*, 2015 Q3, volume 55, number 3, accessed at <http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2015/q3.pdf>

Bank of Korea, Economic Statistics Systems (ECOS), accessed at <http://ecos.bok.or.kr/>

Board of Governors of the Federal Reserve System, "Currency in Circulation: Volume," accessed at http://www.federalreserve.gov/paymentsystems/coin_currircvolume.htm

Central Intelligence Agency (CIA), *The World Factbook*, accessed at <https://www.cia.gov/library/publications/the-world-factbook/index.html>

EMVCo, "Worldwide EMV Deployment Statistics," available at http://www.emvco.com/about_emvco.aspx?id=202

Euromonitor, *Merchant Segment Study (9th Edition)*, 2015. Data compiled by Euromonitor for Visa International.

Euromonitor, *Passport*, 2015.

European Consumer Centre France, "Cash payment limitations," accessed at <http://www.europe-consommateurs.eu/en/consumer-topics/buying-of-goods-and-services/cash-payment-limitations/>

Federal Reserve System, *The 2013 Federal Reserve Payments Study: Recent and Long-Term Trends in the United States: 2000-2012*, July 2014, available at https://www.frb.services.org/files/communications/pdf/general/2013_fed_res_paymt_study_detailed_rpt.pdf

Giesecke & Devrient, "The Life of a Banknote", available at http://www.gi-de.com/en/trends_and_insights/banknote_circulation/life_of_a_banknote/life-of-a-banknote.jsp

IAMA, March 2015, as cited in yStats.com, *Global Online Payment Methods: First Half 2015*, July 2015.

Lafferty, various "Card industry trends and market data" reports, 2015 versions.

Mexican Bankers Association, as cited in *El Universal*, "Aumentan 13.7% ventas en Buen Fin 2014," 2 December 2014, available at <http://archivo.eluniversal.com.mx/finanzas-cartera/2014/ventas-buen-fin-1058906.html>

Morgan Stanley, "The Next India: Internet—Opening Up New Opportunities" (Feb 2, 2015), as cited in Digbijay Mishra, "Snapdeal to cut cash-on-delivery by 20% in 6 months," *Business Standard*, 28 April 2015, available at http://www.business-standard.com/article/companies/snapdeal-to-cut-cash-on-delivery-by-20-in-6-months-115042800902_1.html

Motilal Oswal, as cited in Business Insider India, "eTailers in trouble as COD gaining pace in Indian markets," 23 July 2015, available at <http://www.businessinsider.in/eTailers-in-trouble-as-COD-gaining-pace-in-Indian-markets/articleshow/48186583.cms>.

National Tax Authority of Korea, *Annual Report 2015*, available at https://www.nts.go.kr/eng/resources/resour_21.asp?minfoKey=MINF7420080211223143&type=V

RFI Group, "Global Payments Evaluation Study," as cited in Rian Boden, "Australia leads the way for contactless ownership and usage," *NFC World*, 13 May 2015, available at <http://www.nfcworld.com/2015/05/13/335191/australia-leads-the-way-for-contactless-ownership-and-usage>

Timetric, various "Cards and Payments Industry" country reports, 2015 versions.

World Bank, "Global Findex Database," available at <http://datatopics.worldbank.org/financialinclusion>

World Bank, "World Bank Open data," accessed at <http://data.worldbank.org>

Worldpay, *Your Global Guide to Alternative Payments, 2nd Edition*, 2014, available at <http://www.worldpay.com/global/alternative-payments-2nd-edition>

yStats.com, *Global Online Payment Methods: First Half 2015*, July 2015.

