



# THE JOURNEY TOWARD 'CASH LITE'

Addressing Poverty, Saving Money and Increasing Transparency  
by Accelerating the Shift to Electronic Payments



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# 1. INTRODUCTION

In developed countries today, and in pockets in developing countries, electronic payments are widely accepted. In most cases, consumers can choose how they make and receive payments, balancing a range of attributes such as convenience, security, speed as well as cost. People often still use cash for small transactions. But they could barely imagine the inconvenience and risk of paying large bills or buying large household items such as furniture, or even a vehicle, in cash. It is all too easy to overlook or underestimate the value that even poor and rural households may attach to the improved security, convenience and privacy electronic payments can bring compared to cash. While cash may seem a benevolent ruler in a land of choice, it can be a tyrant in a place with few or no other options.

Governments, the private sector and the development community distribute billions in cash payments worldwide in the form of benefits, pensions, social programs, humanitarian aid, or payroll. As bulk payers, these institutions have a unique role to play in initiating a deliberate, strategic shift toward electronic payment systems.

Evidence from a range of sources indicates that such a shift brings material benefits for governments, the private sector and the development community, as well as for individuals—in terms of reduced costs, improved transparency, enhanced security, and access to financial services. The level and nature of the benefits of electronic payments depend on the size, and type of the payment, and, importantly, on the starting position before the shift. And realizing these benefits is often dependent on wider changes than the means of payment alone.

In a world in which half of adults is now banked<sup>1</sup>, and the number of mobile subscriptions exceeds 86% of the world's population<sup>2</sup>, the potential for widespread electronic payments seems higher than ever. Even a basic mobile phone can now be used to initiate and confirm a payment, just like a personal computer with an internet connection. Although there is a prevailing drift toward more electronic payments, there are significant barriers that can lengthen the transition, increase the costs or reduce the benefits, and even stall wide-scale adoption. Realizing the full potential of electronic payments will require leadership, coordination and sustained effort from governments, the private sector, and the international development community, often in poor and remote places.

This study:

- Examines the three shifts to electronic payments;
- Aggregates the findings of a range of studies about the benefits of electronic payment adoption;
- Identifies barriers that need to be addressed in order to achieve a shift toward “cash lite”; and
- Concludes with a guide for governments, private sector businesses (as users of e-payments rather than as providers) and development organizations that wish to accelerate the shift to electronic payments.

“In predominantly cash-based economies where access to financial services is restricted, managing individual or family liquidity presents a number of challenges. In Haiti, one of the most pressing needs seems to be the storage and transport of cash. People we interviewed regularly expressed concerns about theft of household savings or being robbed en route to making purchases or payments.”

**MERCY CORPS REPORT**

## Pilots in Haiti and Niger Demonstrate Even the Poorest Countries Can Use and Benefit from Electronic Payments

Niger and Haiti are two of the poorest countries on earth. Less than half of adults are literate.<sup>3</sup> While only one in five Haitian adults has a bank account, in Niger the proportion is below one in fifty. These two countries are also among the most cash intensive: Almost everyone uses cash for all purposes and just a tiny proportion possesses debit cards, let alone credit cards.<sup>4</sup>

Yet in these places in the past few years, thousands of people in poor and remote communities have received access for the first time to their funds using a mobile phone — as part of cash transfer programs run by international NGOs. The early evidence suggests these recipients are now experiencing some of the benefits of electronic payments.

In Haiti, one recent pilot program moved workfare payments from cash to electronic transfers via mobile phone. More than three-quarters of recipients perceived electronic payments to be safer than cash, in large part because of improved confidentiality.<sup>5</sup> In another Haitian pilot, three-quarters of the recipients who received their transfer into an account, rather than directly in cash, said that the new electronic service had improved their financial management.<sup>6</sup>

In Niger, ten thousand households in 96 communities were randomly assigned to receive a monthly cash transfer for five months, either in cash directly or into a mobile wallet. Those paid into the mobile wallet saved time valued at the equivalent of a day's grain for a family of five. Researchers found evidence that they followed better financial practices compared to those paid in cash.<sup>7</sup>

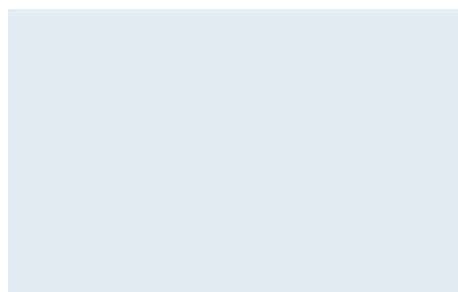
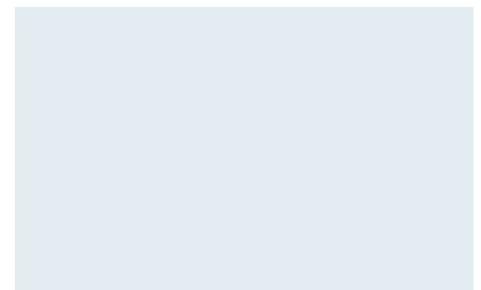
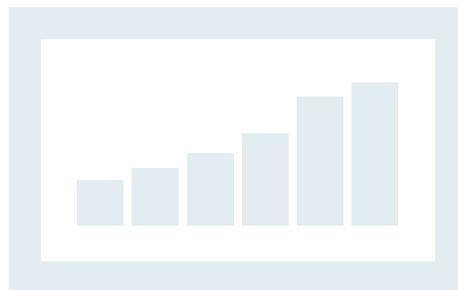
Electronic payments in these countries are nascent, with 99% of transactions likely conducted in cash.<sup>8</sup> But pilots like these are promising in that they show that even poor and remote communities can use and benefit from electronic payments.

## Kenya's Progress Raises the Question of a Cashless Society

The rapid adoption of M-Pesa, the mobile payment service in Kenya, is on a very different scale: A fifth of Kenya's GDP is now estimated to flow through this service alone<sup>9</sup> and close to two thirds of the adult population report using mobile payments. This exceeds the average of just over half of adults in high income countries who report using electronic payments.<sup>10</sup> The success of M-Pesa raises the question of whether countries like Kenya can leap-frog over the developed world and become a cashless society in which notes and coins become redundant. Indeed, the spread of mobile payments in general has led to increasing commentary about the advent of "cashlessness."

In reality, Kenya remains for now the exception which holds out the promise: M-Pesa's success is due precisely to the lack of electronic payment options available to most Kenyans. However, according to a study published in 2011, M-Pesa users conducted only 5% of their transactions this way; the rest were in cash leading to the conclusion "cash remains king in Kenya."<sup>11</sup> This finding comes as no surprise only five years after mobile payments were launched. But in middle income countries wealthier than Kenya, on average only one in twenty adults reports making electronic payments.<sup>12</sup> Only recently have even high income societies such as the U.S. and Canada turned the corner to become "cash lite": Consumers there now use cash less frequently than electronic payments for their transactions overall.<sup>13</sup> While an imminent cashless society is unrealistic to expect, most commentators believe a gradual drift toward cash lite is likely.

Much of the available evidence about the benefits offered by electronic payments over cash comes from developed countries, where central banks responsible for the issuance of cash and for the payment systems as a whole have paid close attention to this issue. A small, emerging body of research also documents the payment experience in developing countries. Combined with recent cross-country data sets measuring how governments and individuals pay, this evidence sheds light on the stages in the journey away from cash.



## 2. THREE SHIFTS TOWARD ELECTRONIC PAYMENTS

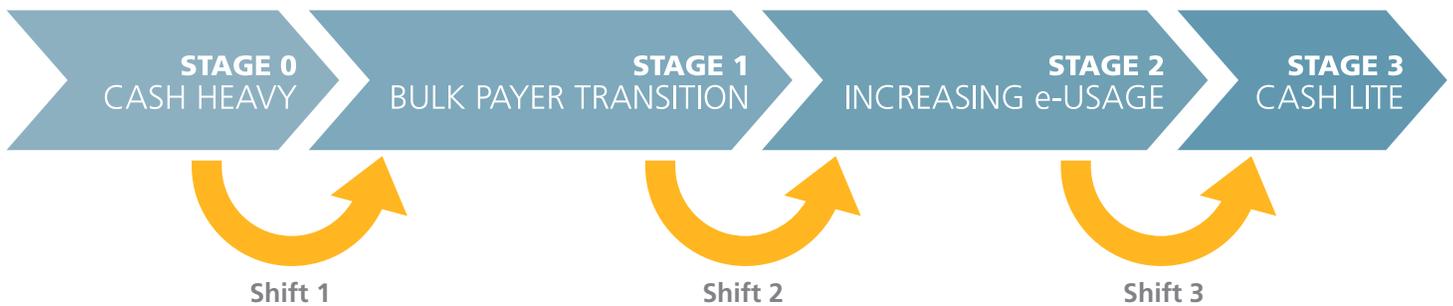
Advances in payments technology and a growing appreciation of some of the benefits have driven pockets of innovation and movement in electronic payments, often of the sort and scale experienced in the Haiti and Niger pilots. **However, a more purposeful, coordinated approach is needed to surmount the barriers that exist to reaching large scale. Otherwise, a prolonged drift is likely, in which not only may the benefits not be fully realized, but the costs of transition may be higher than necessary; and the needs of the mass market may not be neglected.**

Based on a review of countries at different stages of the transition, it is possible to define four stages on the path from a “cash heavy” society at one end, in which cash is by far the predominant payment instrument, toward a “cash lite” society at the other, in which cash is no longer the most common means of payment. Cashlessness would lie beyond this point, but it is not considered a practical or likely scenario here; rather,

it is likely that cash will co-exist with electronic payments increasingly in the margins of a cash lite society.

This view on the journey focuses on making *shifts* between stages: these are coordinated actions which cause large pools of transactions to go electronic. Figure 1 below shows a conventional progression of stages. The shifts may not be linear: Kenya, for example, is already experiencing aspects of Stage 2 (increasing electronic usage) while the Stage 1 bulk payer transition is not yet completed. What is important about the staging is that each shift requires different focus and action; and that the starting point of each shift affects the level and nature of benefits and costs: For example, in a country with a limited banking infrastructure, the costs and benefits of shifting bulk payments will differ from those in a society with extensive cash handling options. Equally, a shift in a society with high risk of cash theft will differ from one with a low threat and both may be impacted by the threat of electronic theft.

Figure 1: Stages and shifts



	STAGE 0 CASH HEAVY	STAGE 1 BULK PAYER TRANSITION	STAGE 2 INCREASING e-USAGE	STAGE 3 CASH LITE
Flow of Electronic Payments		Few to Many	Many to Few	Many to Many
Main Payment Instruments in Use	Mainly paper (typically cash; maybe some checks)	Mixture: paper and electronic (cards used at ATMs, some on-line banking)	Mainly electronic (mobile used for bill payments and remittances)	Almost all electronic (use of mobile and/or card at point of sale through inter-connected switches)
What Is Needed to Shift to This Level?		Sufficient cash-out points; B2P & G2P shifts	Ability of business and consumers to make cheap electronic payments via computer, standing order, ATM (P2P, P2B)	Pervasive acceptance of electronic payments at POS and mobile phone, compelling financial products
Examples	Haiti, Niger	Colombia	Kenya	U.S., Canada, Northern Europe

**The first shift happens when bulk payers in an economy, such as government, large employers or development aid distributors decide to pay electronically.**

This shift creates new opportunities and, typically, new needs for payment infrastructure. Typically, infrastructure at this stage does not extend to widespread acceptance of electronic payments for small purchases. Therefore, recipients will have to cash it out in order to do so. This shift therefore changes the geography and nature of cash flows—rather than cash accumulating at paypoints (such as government or employer offices), it now is shifted into the branches and ATMs of the financial sector. To handle the volume of withdrawals, banks find it economical to invest in new mini-branches or service points, ATMs and increasingly also use merchants as agents for cashing out. Many countries are now going through this first transition. However, a recent World Bank survey of payment regulators indicated that a third of governments still pay salaries using mainly cash or checks; and half of them pay cash transfers this way.<sup>14</sup> An example of this shift comes from Colombia, where the large scale social transfer program previously known as Accion Social reduced cash payments from three quarters of its transfers to less than 10% within two years, as the result of a shift to payment into a card-based account.<sup>15</sup>

**The second shift takes place as opportunities grow for recipients to spend or transfer money electronically.**

The transfers here would include options to send money to other people (P2P) and to pay loans and bills to businesses (P2B) and taxes and fees to governments and utilities (P2G) (whether by electronic transfer or direct debit). This shift involves the decisions of many independent persons and businesses who will evaluate how best to transfer or receive funds. The ability to make these payments is restricted mainly to those who have access to on-line banking through personal computers until mobile payments become available. The advent of mobile payments enables payers to make electronic transfers anywhere with connectivity, and at any time. This shift matters because it reduces the need for people first to withdraw cash before using

it; as a result, it makes electronic accounts more useful for their holders, and because of higher levels of activity, potentially more lucrative for the providers who offer them. The best example of this shift in the developing world is in Kenya, where the arrival of convenient, pervasive mobile payments essentially eliminated the previous cash-based alternatives (such as bus companies, informal couriers) for sending home to family and friends (P2P) since it offered faster, less risky options for moving value. Kenya is also an example which shows that the progression across the stages above may not be linear.

**Finally, the third shift comes when even the majority of small payments, which are usually between people and merchants (i.e., P2B) for everyday items like groceries, also become electronic.**

This happens when purchase at the point of sale using a card or even a mobile phone becomes easy, cheap and convenient for consumers and widely accepted by merchants. Importantly, in this stage, the consumer often has a wide choice of payment options, so a range of incentives different from those at earlier stages is required to promote further electronic usage over cash. At this stage, too, even smaller businesses are more likely to shift away from their existing methods of paying their suppliers (B2B): currently, checks still predominate even in developed countries with advanced electronic payment infrastructure such as Canada.<sup>16</sup>

Reaching the cash lite threshold where the majority of payments is electronic is not the end of the journey. As part of the recent review of Canadian payment systems, future scenarios indicated that between 60% and 80% of all payments in Canada would be electronic by 2020, up from 50% now (see Box A). Achieving the higher proportion was dependent on substantial shifts in government policy and individual and business payment behavior.



## BOX A: CANADA CONSULTS ON THE FUTURE OF ITS NATIONAL PAYMENT SYSTEM

Canada has a well-developed financial sector and national payment system in which half of all payments are estimated to be electronic. In order to assess how well the system served different stakeholders in the economy and to consider options for the future, the Minister of Finance in 2010 appointed a Task Force to undertake a comprehensive review.<sup>17</sup>

Faced with a task of great complexity with many diverse voices and competing interests, the Task Force structured an evidence-based, consultation-rich process. This process involved, first, analyzing the current landscape of Canadian payments, and then appointing specialized working groups to consider particular issues. Widespread consultation with a range of business users followed: “It was the first time that the views of such a range of stakeholders had ever been heard

in such depth on the subject of the Canadian payments system.”<sup>18</sup> Stakeholders developed four scenarios, and in each, the proportion of electronic payments to total payments increases by 2020, with estimates ranging from a level of 60% to over 80%.<sup>19</sup> The Task Force drafted a discussion paper called *The Way We Pay: Transforming the Canadian Payments System* which was first posted for a comment period. The final report was delivered in December 2011.

Recognizing the need to continue the process of consultation during the implementation of proposed changes, the Canadian Minister of Finance established a senior-level advisory committee made up of public and private sector stakeholders. This committee will meet regularly with Department of Finance officials to discuss emerging payments system issues.<sup>20</sup>

## 3. THE BENEFITS OF SHIFTING TO ELECTRONIC PAYMENTS

There is compelling evidence that electronic payments can bring substantial benefits at each shift. However, the nature and scale of benefits may change, as may the distribution of costs and benefits across different stakeholder groups. Table 2 below summarizes the main benefits according to the shift and stakeholder group, based on definitions provided in Table 3 below—hence transparency and security reduce risk of losses, while cost refers to savings in transaction costs. A discussion of the evidence supporting each benefit follows.

**Table 2: The main shifts and their benefits to stakeholders**

SHIFT TO:		(1) BULK PAYER TRANSITION	(2) INCREASING e-USAGE	(3) CASH LITE
STAKEHOLDERS	<b>BENEFITS</b>			
	<b>Governments</b>	Transparency Financial management Security	Cost Financial inclusion	Cost
	<b>Private sector</b>	Financial management security	New business models Financial management	Cost New business models
	<b>Development community</b>	Transparency Security	Cost	Cost
	<b>Individuals</b>	Security Privacy Speed & timeliness Cost (convenience)	Speed & timeliness Financial inclusion	Cost Financial inclusion

The benefits in Table 2 refer to discrete attributes and outcomes. Unfortunately, they are often conflated or described differently in different places. Surveys are not always consistent and the benefits are interrelated. Table 3 provides the definitions used for this paper. We first survey the attributes and then consider the evidence for the purported outcomes of widespread usage of electronic payments: financial inclusion, economic growth and new business models.

Table 3: Payment attributes and outcomes

ATTRIBUTES	
Transparency	The ability to track a payment from sources to destination accurately and easily.
Security	The risk of loss of funds due to theft or fraud.
Privacy	The ability to conceal the existence or usage of funds from parties with no legitimate right to know.
Speed & timeliness	The ability to make or receive payments at a speed proportionate to the underlying need for which payment is made; and the knowledge that they will be delivered in a dependable manner.
Cost savings	The savings in total transaction costs measured over a defined period as a result of using one instrument rather than another. These include imputed savings in time.
Better financial management	The ability to implement additional beneficial financial practices that enable better record keeping and control of finances.
OUTCOMES	
Financial inclusion	The result of a range of financial products being available to all segments of society, at a reasonable cost, and on a sustainable basis through a range of providers.
Macro-economic benefits	Benefits at the level of the economy as a whole, rather than to any one stakeholder —such as economic growth, efficiency.
Enabling new business models	The ability to start new businesses that were not possible in the absence of the enhanced payment approach.

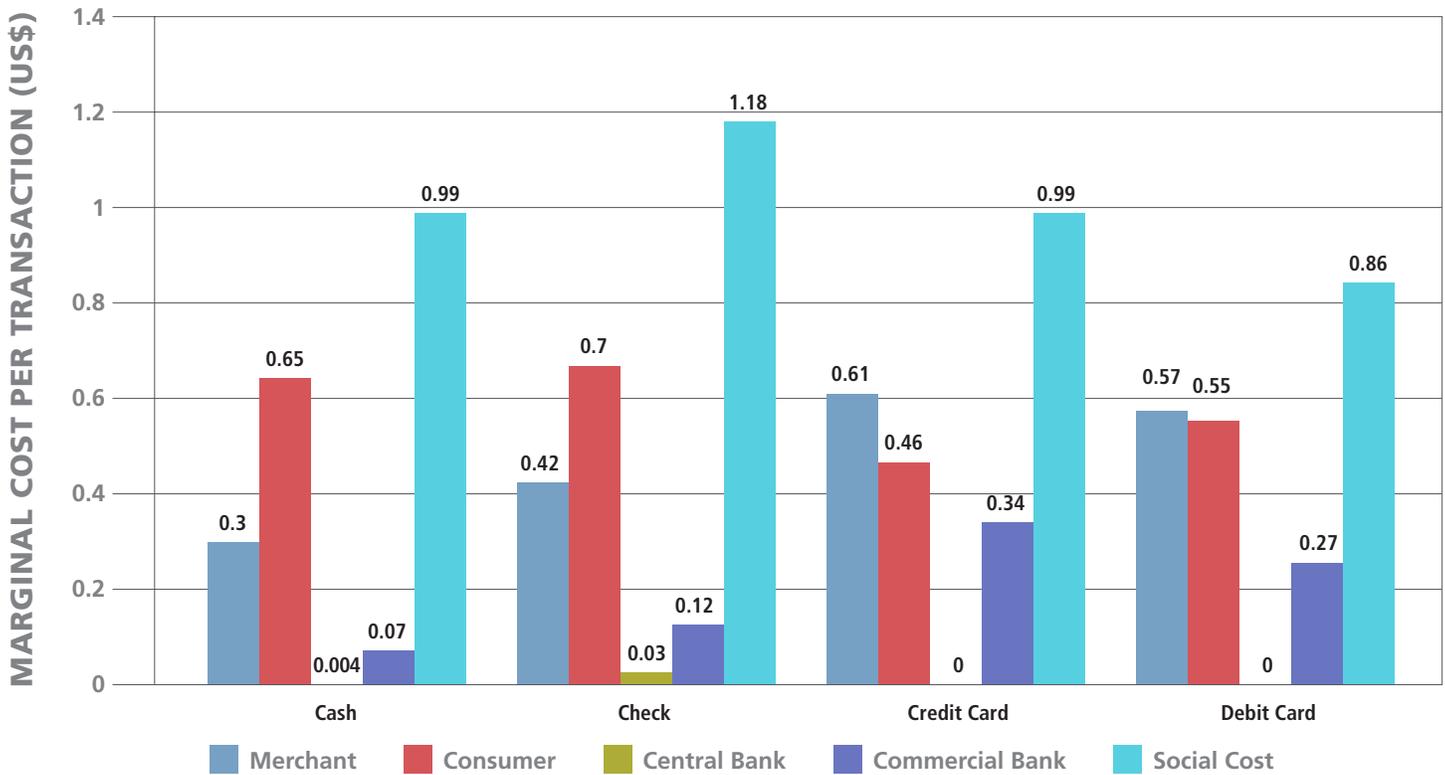
### BOX B: MEASURING THE COSTS OF CASH AND ELECTRONIC INSTRUMENTS

It is not easy to calculate the total costs of all payment instruments in a comparable manner. A number of methodological questions have to be addressed:

- Which measurement of cost: marginal or total?
- Whose costs to include: payer and payee as well as payment processor? And what about the social cost, taking out the fees that are costs to some parties and income to other parties in the payment chain?
- Which costs to include—for example, whether to consider opportunity costs of holding cash or the time costs of fetching cash or setting up the payment instrument to use? And is the risk of loss or theft to be factored in? And the cost of providing rewards on cards?
- On which type and sizes of transactions—for example, the cost of using cash for a typical grocery transaction (\$11.52 in the US in 2005, less than \$1 in Kenya in 2011) may be very different than the cost and risk of carrying large amounts of cash, for example, to buy a durable good such as a stove or television.

One study<sup>21</sup> used a marginal cost approach to consider the cost to each party for a typical grocery store purchase using four common payment instruments: cash, check, debit card and credit card. For this size transaction, the credit card is most expensive for the merchant, and cash is cheapest. For consumers, the credit card was the cheapest means of payment and cash and check most expensive. For the society overall, debit card was cheapest, followed by credit card, cash, then check. These cost rankings are highly sensitive not only to the value but also to the volumes processed in the country.<sup>22</sup> Figure 2 below, based on data from that study, shows how the estimated marginal cost varies for each party, and then the overall social cost (which does not double count the cost when it is revenue to another party) in the final column for each instrument.

Figure 2: Marginal cost of selected payment instruments for an average grocery store transaction



Note: 'Check' refers to Non-verified check; Credit card to 'Credit/charge' and 'Debit card' to PIN Debit  
 Source: Based on data in Table 3, Garcia-Swartz et al (2006a)

So far, we have considered evidence of benefits to individual stakeholder groups associated with the choice of electronic payment instruments over cash. There are also outcome-level benefits that arise in the aggregate from underlying individual choices.

### Financial Inclusion

Financial inclusion means a range of products is available to all segments of society at reasonable cost. A shift to electronic payment can increase the range of services available and may decrease costs over time, although this outcome will depend in part on the functionality of the bank account in use. For an unbanked person, receiving a payment into an account creates a point of entry into the financial system. General purpose or mainstream financial accounts, which allow consumers to store savings and to make and receive electronic payments (in the 'many to few' transition above), may serve as stepping stones to financial inclusion, if they reduce the cost of transactions so there is a business case for banks and account providers to offer these accounts.<sup>23</sup>

In reality, most bank accounts around the world are used simply to receive on average one deposit a month, usually at a bank branch, and to make 2-3 withdrawals, either at a branch or an ATM.<sup>24</sup> As such, most bank accounts play a limited role: They merely reroute access to cash so that after one electronic transfer in, and a few withdrawals out, cash is still used for most

payments. For most people, their bank account falls far short of being "daily relevant."<sup>25</sup> The biggest opportunities for financial inclusion arising from a shift to electronic payments have yet to be realized in most places: They come from financial service providers using the digital information generated by e-payments and receipts to form a profile of each individual customer. This digital profiling then enables providers to offer more appropriate and relevant products. Even beyond the use of e-payment records, businesses are starting to use other "digital footprints," such as mobile phone calling records and social network traffic, to offer credit to excluded groups.<sup>26</sup>

### Economic Growth and Development

A whole literature has explored the linkages between financial development and economic growth. Various studies have concluded that greater financial depth leads to faster economic growth.<sup>27</sup> Countries with greater financial depth also have lower levels of inequality.<sup>28</sup> While greater financial depth is not the same thing as more electronic payments, the two are related: Electronic payments depend on the payer having electronic value to transfer; a higher proportion of electronic payments in an economy would imply a higher proportion of deposits in the formal financial system, which would be measured as greater financial depth.

A cross-country study in 2003 found that a 10% increase in the share of electronic payments was correlated with an increase in

consumer spending of 0.5%.<sup>29</sup> As consumer expenditure is itself a common driver of economic growth, this raises the prospect of a virtuous cycle between electronic payments and economic growth.

### New Market Access

New payment methods open opportunities for new businesses to start up. One such opportunity is for local merchants to serve as an agent of financial providers, receiving a fee for offering a cash-in or cash-out service.<sup>30</sup> Kenya now has more than thirty thousand agents of mobile money services. In developed markets, the growth of online marketplaces such as eBay, supported by the rise of electronic payments, has led to the creation of thousands of new jobs.<sup>31</sup>

More significantly, by reducing the cost and risk of cash collection, electronic payments enable new fee-for-service business models. For example, pre-payment options for electricity or water may enable these utility services to be offered on a wider basis. Or poor communities could access and pay for mobile health services and even for private school education, which were previously unavailable due to the high transaction costs of cash.<sup>32</sup>

### Coordinated Shifts, Rather than Gradual Drifts, More Likely to Maximize Benefits and Consumer Adoption

Figure 1 summarized how the benefits may vary by stakeholder and shift. The first shift brings benefits primarily through increased transparency and better financial management across

the board. This shift also lowers transaction costs for recipients mainly in terms of time saved; but whether it also reduces costs for the payer depends on other considerations, such as whether there is infrastructure in place. **But the benefit of a coordinated shift is that the costs are more likely to be recovered sooner, and that the opportunities for the other benefits described here are more likely to be realized, compared with a gradual drift in which changes take a long time and costs may be duplicated. Recent research on consumer payment behavior has found considerable stickiness: Once consumers become familiar with a payment instrument, they are more likely to continue to use that instrument, even when the benefits are reduced.<sup>33</sup> Purposeful shifts are more likely to change persistent behavior patterns.**

While there is increasing research into the factors that drive consumer adoption of different payment types, there is still a shortage of credible independent and comprehensive cost-benefit studies in developing countries in particular. In many cases, the transitions that have been documented cover only the experience of particular user groups, and are in many cases too recent to judge the longer term impact on payers, payees and the societies as a whole. A systematic program of further research is therefore needed to monitor and measure benefits and costs of shifts in different societies on an ongoing basis.

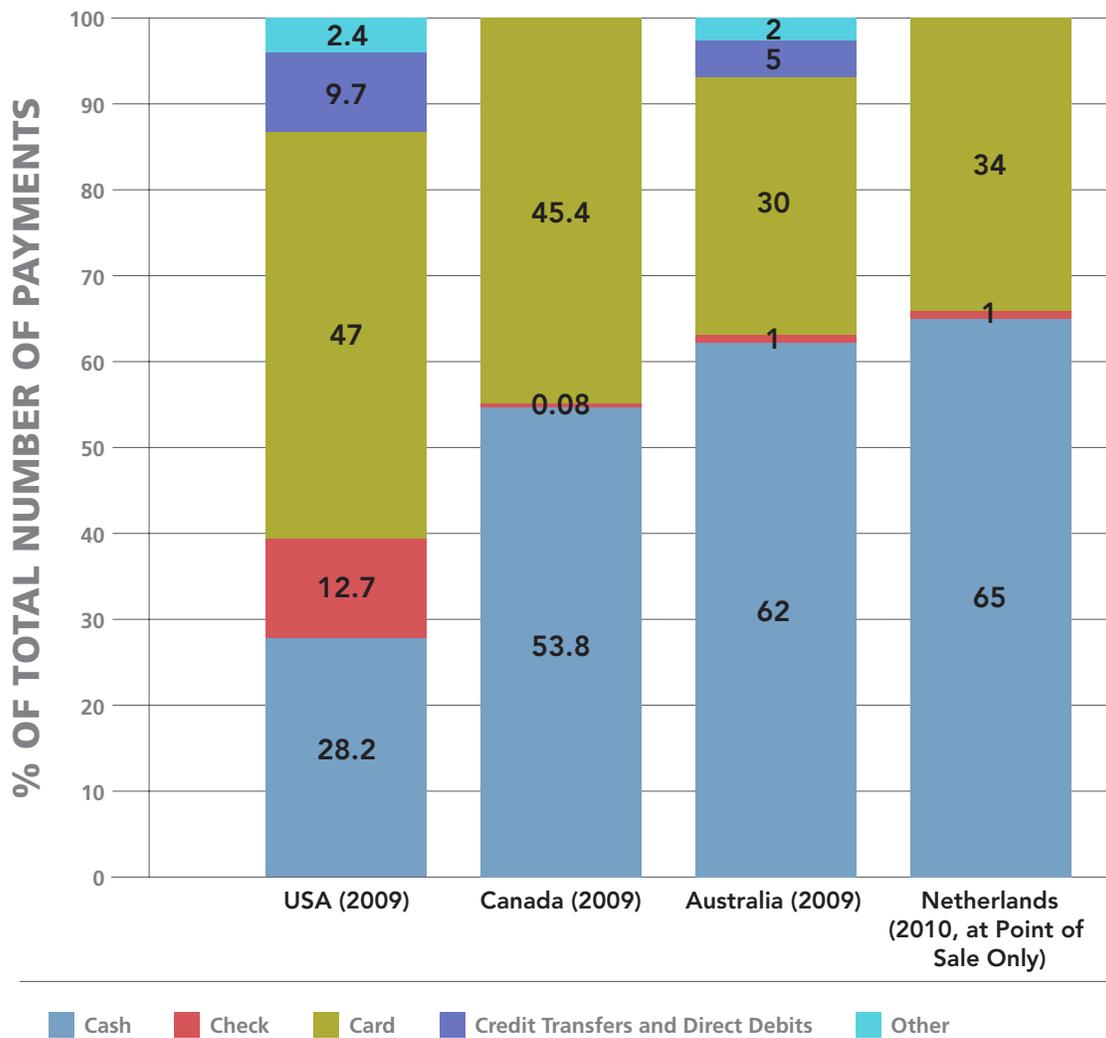
## BOX C: MEASURING PAYMENTS

While most central banks measure the use of non-cash instruments in their economies using statistics supplied by banks, payment providers or switches, it is much harder to measure the volume and value of cash transactions. One approach is to use household and business surveys and payment diaries that record the usage of different payment instruments. These tools are important in monitoring changes in payment patterns over time.

With a payment diary, consumers keep a paper or electronic record of all purchase amounts and instrument types over a given period of time (often one day to one week, sometimes longer). Figure 3 below shows the results from different surveys undertaken by or for regulators in a range of developed countries. These numbers suggest that the average U.S. consumer is now “cash lite,” since she uses electronic means for 57% of transactions by number.

Because it is costly to undertake accurate payment diaries, few developing countries have undertaken this research at any scale sufficient to generate a nationally representative profile, although more are starting to do so. For example, in Kenya, a recent diary-like exercise recorded all transaction types and amounts at 61 merchants over four days in two areas. P2B payments in these areas are still very cash heavy: In the rural market town of Kerugoya, in Central Kenya, there were 5 card and 4 mobile money transactions out of 6,382 total transactions recorded.<sup>34</sup>

Figure 3: Proportion of payments per month per consumer by payment instrument



Sources: Reserve Bank of Australia, 2010 Consumer Payments Use Study; Bank of Netherlands, Usage of Cash in the Netherlands; Federal Reserve Bank of Boston, Survey of Consumer Payment Choice 2009.<sup>35</sup>

## 4. BARRIERS TO SHIFTING

Even though there may be compelling reasons for different stakeholders to shift toward electronic payments, this does not mean that a shift is automatic: Barriers may impede or arrest a shift. **If these barriers are not understood and addressed, then a gradual drift toward electronic payments is more likely than a strategic shift.**

- As Table 3 shows, the barriers to shifting from stage to stage depend on the particular shift in question.
- A lack of cash-out infrastructure, together with a shortage of knowledge and information on the part of bulk payers about options and implications of making bulk payments, impedes the first shift.
- The second shift depends more on individual users being willing and able to initiate payments.
- Trust plays a large part at the second and third shifts, more so than in the first.
- At the second shift, a lack of knowledge and expertise about how to receive e-payments on the part of large recipients, including government, may be a barrier.
- The third and final shift is only possible when electronic payments become widely affordable and widely accepted for all types of payments.

**Table 3: The main barriers blocking each shift**

SHIFT TO:	(1) BULK PAYER TRANSITION	(2) INCREASING e-USAGE	(3) CASH LITE
	<p>Lack of infrastructure for payout in right places, leading to high setup costs</p> <p>Shortage of information, knowledge &amp; expertise of payers</p>	<p>Trust and understanding of users</p> <p>Lack of appropriate products to use</p> <p>Perceived and actual cost</p> <p>Shortage of information &amp; knowledge about how to receive</p>	<p>Pervasive acceptance of payments</p> <p>Perceived and actual cost</p>

**Barriers also differ by stakeholder group.**

**Barriers and Challenges for Governments Include:**

- Coordinating a shift across agencies (and even sometimes within agencies) with different objectives and mandates.
- In the absence of clear priorities, communicating their objectives to citizens. For example, a study of four middle income countries that were making large-scale shifts in government payments found that social agencies failed to send clear messages to recipients about whether they could leave money in their newly opened bank accounts or even add more.<sup>36</sup> This undermined the achievement of financial inclusion, an objective which was not necessarily shared across government agencies. Mixed messages to businesses about whether new payment approaches are simply a means of surveillance to enforce tax compliance may also deter their use of electronic means.
- Changing established regulations and procedures is hard in the face of competing priorities. For example, moves to relax know-your-customer rules for opening bank accounts have to comply with international standards.
- Clientelism: governments have to face those groups who lose through reduced corruption.
- Compounding these barriers, governments may be forced to confront a lack of skills in the agencies responsible for overseeing national payment systems.

**Barriers and Challenges for the Private Sector Include:**

- Businesses differ greatly in their size and complexity, and therefore also in the costs they face of transitioning from a manual process to an automated one. Many of the wider benefits to businesses come when they are able to automate accounting processes as a whole, rather than when they merely accept or initiate electronic payments. This level of change requires significant time and resources.<sup>37</sup>
- For small businesses, the lack of easy-to-use, standardized and inexpensive interfaces between payment solutions and accounting packages increases the costs of shifting.

- Businesses receiving electronic payments in exchange for goods and services will likely be deterred if there is any lack of legal certainty over when a payment is final, as opposed to when it may be reversed. Card payment schemes have developed detailed rules that increase certainty for both merchants and customers alike, but the present lack of credible rules around other types of electronic payments may limit acceptance by businesses and consumers.

**Barriers and Challenges for Donors and NGOs in the International Development Community May Already Be Decreasing:**

The recent survey for the Cash Learning Partnership<sup>38</sup> notes that barriers faced by donors using electronic payments may in fact be decreasing. The report cites changes in regulations to allow easier basic account opening for poor recipients of cash transfers, as well as new mechanisms (including CaLP itself) for sharing information that helps overcome information and knowledge barriers.

**Barriers and Challenges for the Individual:**

Unlike the stakeholder groups mentioned above, individuals are not typically bulk payers, they make on average only 60-70 payment transactions per month in developed countries—but they, too, experience barriers to the adoption and use of electronic payment instruments. Governments or employers may force individuals to make the first shift by paying their salaries or benefits only into a specified account. However, subsequent shifts depend crucially on individuals and businesses trusting the means of payment and being willing to change their behavior. **Trust is an outcome of many variables — most importantly, individuals’ experiences of a system over time. Trust is easy to lose; if it is not sustained by an enabling legal environment throughout the stages, it can be difficult and slow to rebuild. This highlights the need to consider future shifts when undertaking the first.** However, consumers may overlook even negative experiences of a particular instrument if there is support available to help them navigate early problems and questions (Box D).

## BOX D: ELECTRONIC PAYMENTS EXPERIENCE MORE IMPORTANT THAN EDUCATION IN INCREASING THE FINANCIAL CAPABILITIES OF THE POOR

One of the concerns about introducing electronic payment instruments is that they may exclude the poor and illiterate. However, there is increasing evidence that mobile money, in particular, does in fact reach poorer segments of the population. A recent survey in Uganda, for example, finds that, among the one in five households that now use mobile money, there are as many poor households (earning less than \$2.50 PPI) as higher income households.<sup>39</sup>

Even if electronic payment instruments reach vulnerable populations, these groups may have quite different take up and usage patterns than new users in developed countries. Research among new users of mobile money in poor communities in Kenya revealed that financial education did not necessarily recede uptake of financial services. “Experience, rather than education, is at the core of improvements in financial capability, and that experience includes actual usage of financial products, even before they are fully understood.”<sup>40</sup> Instead of pre-education, which may be costly, the study authors call for accessible redress mechanisms and for simple communication about the costs of using new services. These factors can build clients’ trust and retain it even if clients have negative experiences.

In addition to the barriers identified here, there are additional concerns that need to be addressed when designing an electronic payment shift:

- **The need for clarity around, and enforcement of, data privacy:** A lack of data privacy laws and rules raises the risk that individuals’ data may be used for reasons which they would not sanction. This concern goes well beyond electronic payments alone, although the abuse of payment data may be especially harmful. The strength of this concern will vary by market; but even in the absence of a general data privacy framework, it is possible for donors and governments to give attention to this issue in the design of new payment arrangements.
- **Reducing opportunities for e-fraud:** More electronic accounts and e-transactions are likely to attract more electronic theft and fraud, to which the vulnerable may be especially exposed; while this may be true, there are strategies to address and monitor this.
- **Ensuring poor and illiterate people understand how to use e-payments and to exercise their rights when needed:** While poor and semi-literate people are capable of and are in fact increasingly using electronic payments, these groups may be especially vulnerable to loss, whether through theft or simply error. This concern warrants close attention in the design and execution phases of any shift, with particular attention to the effectiveness of recourse mechanisms and of support for real-time queries (such as call centers).

- **Reducing costs which limit usage by poor people:** In many cases, governments or employers bear most of the costs of the first shift as bulk payers, but individuals usually bear the costs of making more electronic payments thereafter. There is a legitimate concern that if the costs of e-payments are not widely affordable, then the second shift, to more e-usage, is unlikely to happen. This concern can be addressed, at least in part, by ensuring the evolution of a competitive, efficient payment system.

In the final section of this paper, we will address measures that each stakeholder group may take to address barriers and enable a shift.

## 5. MAKING THE SHIFT

The journey from a cash heavy society to a cash lite one takes time: Consumer behavior adapts slowly to greater automation, as indeed do businesses and government. While the underlying drift toward electronic payments can be accelerated to become a shift, all parties need to have realistic timeframes and targets in mind as they embark on the journey.

Although the knowledge base around the full implications of the shifts toward electronic payments is still fragmented, a growing body of research is helping to place more milestones on the journey. For example, the World Bank's recent ***Guidelines for Development of Government Payment Programs***<sup>41</sup> provides a useful summary of experiences from a range of countries and sets out a framework for governments to follow. Work like this helps to demystify the choices and reduce the uncertainty and complexity that can lead to inertia, even where there is a sincere interest in making a shift. However, there remains an ongoing need for systematic and credible research to understand and better measure the costs and benefits of shifts across different societies. Governments, private businesses and donors can all contribute to this research effort. These groups can also take specific steps to shift their payment behavior.

### Governments

“Government must lead the change.”

**TASK FORCE FOR THE PAYMENT SYSTEM REVIEW,  
CANADA, 2011**

Governments can:

- ***Understand and monitor the payment patterns of recipients and payers before and during a shift to electronic:*** Designing appropriate survey and monitoring tools requires time and resources, but they are necessary to design appropriate payment approaches and make adjustments in how a service is rolled out. For example, the U.S. Treasury has undertaken regular surveys of the experience of recipients during its transition away from paper-based payment (Box E below). This need to understand the adoption patterns of payees is certainly not limited to government alone.
- ***Build a roadmap for development of the national payment system with stakeholder engagement:*** Government's choices and options regarding payment exist in the context of the national payment system as a whole, a system with many stakeholders with conflicting interests. Ministries of Finance or central banks have a key leadership role to play. The process followed by the task force appointed by the Minister of Finance to review the Canadian payment system provides a useful example (Box A).
- ***Support the transition to electronic payments through a range of associated measures, not just a legal mandate:*** No matter how well intentioned, a government push to electronic payments without ensuring that there is an adequate payment infrastructure and appropriate incentives for customer support is likely to founder, especially in the first shift. For example, in Colombia, a specialized government program provides additional support and incentives for beneficiaries of a cash transfer program run by another government agency (Box F). Support may include tax incentives to providers to deploy infrastructure.
- ***Coordinate policy messages and actions across government departments:*** Coordination is much more than a communication issue, although it is also that—clear, ongoing communication between government and all its payees is necessary to smooth a transition. But to be able to communicate clearly, governments at senior level must first resolve any apparent tensions in mandate between departments. For example, in some large cash transfer schemes in middle income countries that have become mainly electronically paid in recent years, transfer agencies have sent beneficiaries limited information and mixed messages about the functionality and desired usage of new bank accounts.<sup>42</sup> Governments should consider how to be strategic as buyers of e-payment services, aggregating requirements across departments to reduce costs per transaction.
- ***Assess the cost of cash properly and consider the wider developmental benefits of making changes:*** Cash distribution to government employees may appear “free” compared with the fees associated with an electronic transaction; however, proper costing of cash would include all hidden costs, and the cost-benefit assessment would also include wider benefits to society over time. For example, a Fijian study included staff costs allocated on an activity basis

as well as the direct and indirect costs of payment of a paper-based social program. Staff costs amounted to almost two thirds of total costs of the paper process, and meant that, properly costed, it was some 23% more expensive.<sup>43</sup>

- **Identify opportunities to implement innovative payment approaches and monitor the results carefully:** Piloting new approaches on a “test and learn” basis is consistent with Principle 7 of the G20 Principles for Innovative Financial Inclusion.<sup>44</sup> Donor agencies, which may have more

flexibility in experimenting, are leading the way — as shown in Haiti and Niger. However, supporting piloting with public money may require a review of regulations, such as those relating to paper record keeping. Identifying opportunities will mean a thorough analysis of costs and benefits — neither exaggerating the immediate costs of a transition nor undercounting the potential benefits in the medium term.

### **BOX E: U.S. TREASURY BACKS E-PAYMENT SHIFT WITH RECIPIENT RESEARCH AND SUPPORT**

Understanding, monitoring and supporting recipients is a vital part of a shift toward electronic payments. The Financial Management Service (FMS) is a specialized bureau of the US Treasury that supports the design and execution of payment approaches across the federal government. FMS has undertaken regular surveys of beneficiaries and piloted new payment approaches to lead the shift in government payments to electronic.

The initiative stems from the passage of a series of laws starting in 1996 that mandated a transition to electronic benefit transfers across broad categories of G2P, such as food stamps and, more recently, social security: All new beneficiaries from 2011 onwards must be paid electronically, and even existing check recipients must transition by 2013. However, the shift, which reached 86% of all government payments in 2012<sup>45</sup>, was not achieved by law alone: It has been accompanied since 2005 with considerable consumer education and support under the Go Direct program. FMS created and launched a pre-paid debit card brand for unbanked benefit recipients called Direct Express, which is owned by the U.S. government but operated by a bank. During the shift, numerous market research surveys were commissioned to understand the effects of the payment options on beneficiaries. A 2009 survey found higher satisfaction level among beneficiaries of food stamp programs with Direct Express than with physical stamps; ongoing surveys have confirmed this finding and pinpointed ways to communicate or adjust services.

### **BOX F: COLOMBIA COORDINATES ITS APPROACH TO FINANCIAL INCLUSION**

Colombia is a middle income country that has undergone a major shift in the way the government pays cash transfers, but this shift has not happened in isolation.

A large conditional cash transfer program, Familias en Accion, provides bimonthly transfers to more than 2.4 million households (11% of the population). The program has achieved a shift away from cash: 76% of its beneficiaries were paid in cash in 2009, compared with only 9% in 2011—by which time most had a card-linked bank account from which they could withdraw cash at ATMs or merchant stores with the necessary point of sale device. A survey of 658 beneficiaries found substantially reduced travel and waiting times as a result of the shift; 91% of beneficiaries felt that the new system was better suited to their needs than the previous cash system.<sup>46</sup>

Accion Social<sup>47</sup>, the government agency responsible for administering the program, was responsible for driving the shift. However, it was supported by Banca de las Oportunidades (BdO), the specialist program responsible for coordinating approaches to financial inclusion in the country. BdO supported research into how recipients used their accounts and funded incentive schemes encouraging them to use their accounts to save. One scheme, PPCA, offered a mix of incentives and education to selected beneficiaries to see whether this promoted wider inclusion. Early results from focus group research in 2011 found that members given these incentives were more likely to consider other financial services. Although Colombia’s integrated approach has allowed for a rapid transition to electronic receipt of funds by some of the poorest members of society, interviews with recipients in 2010 and 2011 found that more could still be done to encourage them to use their new accounts to access other financial services.<sup>48</sup>

“As our survey found, most businesses and consumers want to use MM [mobile money] more regularly. They find it to be safer, more efficient, and convenient than other payment channels.”

**MOBILE MONEY USAGE PATTERNS OF KENYAN SMEs, 2012**

Businesses can:

- **Participate in national payment forums:**

When governments convene national payment councils to enable consultation among providers, users and regulators of the payment system, businesses have an opportunity to add their voices to the discussions. This may best be done by industry bodies, which can collect information on payment patterns across their membership. This type of information can also enhance understanding of the national payments landscape. For example, the Canadian Federation of Independent Businesses participated actively in the Payment System Review process, even undertaking a survey of its members that provided useful perspectives on how small businesses pay and get paid.<sup>49</sup>

- **Invest in record-keeping systems with appropriate application programming interfaces (APIs):** Existing electronic payment solutions often do not integrate easily to business accounting systems. There is a business case for payment providers and vendors of accounting systems or services to make the process easier and cheaper, especially for small businesses, and for businesses to evaluate the expense taking into account the benefits of a more general shift.

- **Coordinate within sectors across value chains:** Supply chains differ in their propensity to automate and to accept electronic payment. For example, agro-industrial processors that buy inputs from many small-holder farmers in rural areas differ in their payment needs from an industry that sources raw materials from a few large suppliers. Leading firms in national supply chains can analyze the propensity of their own supply chains to “go electronic” and consult widely on the outcomes. This analysis may identify demand in particular sectors or under-served regions of a country in ways that could support the business case for a shift.

“This report makes the case for wider adoption of new technology in humanitarian cash and voucher programming... New technologies are tools with potential to serve humanitarian cash-based responses throughout the program cycle in order to detect needs earlier, enlarge capacity of and speed up response, enhance specificity of transfers to match needs and foster accountability while reducing opportunities for corruption and diversion.”

**CASH LEARNING PARTNERSHIP REPORT 2011**

The Cash Learning Project report quoted above identifies a number of actions for the development community to follow:

- **Improve donor agency capacity to understand and apply electronic payments:** This may involve increasing the familiarity of staff with the existing examples and providing training courses.
- **Improve recipient capacity, especially those with low literacy:** This involves experimenting with cost-effective ways of providing support to first-time users, as they encounter questions and difficulties. While many agencies speak of the need for client education, few have found effective or cost effective means of delivering this on large scale.
- **Improve processes and formalize new ways of working together and with providers:** This action would include clarifying roles and responsibilities of agencies in advance by, for example, undertaking joint readiness assessments in areas prone to disaster. In other environments, better coordination among development agencies helping to build the payment or distribution system and those in the business of paying out transfers would benefit both groups, as well as the country in question. Development agencies paying transfers would also benefit from engaging, harmonizing priorities, and standardizing systems with payment providers.

- **Develop codes of conduct for the management and sharing of electronic data:** Especially in countries with weak or non-existent laws, establishing codes of conduct would help address concerns about recipients' data privacy, and it may even encourage the wider financial sector to consider adopting similar standards.

### Conclusion

There are many barriers on the road to a cash lite society, but the benefits likely make the journey worthwhile. In a cash lite society, financially included individuals exercise real choices over how they pay, in the process unlocking new ways of delivering social and business services. The choices they make cause the usage of cash, with all its often poorly understood and usually misallocated costs and benefits, to dwindle. With that end goal in mind, governments, businesses and donors can focus their energy and resources in purposeful, coordinated actions which can shift the payment landscape, even in the most cash heavy societies today.

# APPENDIX A: UNDERSTANDING THE PAYMENT LANDSCAPE

The payment landscape can be distinguished according to the category of payment instruments, their size and frequency, and the identity of the payer/payee in each case.

## 1. Categories of Payment Instrument

Central banks usually recognize at least five main categories of payment instruments:

- I. Cash
- II. Checks
- III. Electronic transfers (known as ‘credit transfers’ where the account holder directly authorizes a payment to be pushed from his account another named account)
- IV. Direct debits (or ‘debit orders’, where an account holder authorizes another party to initiate a debit, or pull, on his account and a credit to theirs)
- V. Payment cards (whether credit, debit or pre-paid)

The categories are distinguished by the different rules around how they are authorized, cleared and settled. The first two on the list are considered ‘paper instruments.’ The remaining three above are called ‘electronic’ since they involve transfers to or from accounts that hold electronic value in some form — whether bank accounts or another store of value such as an

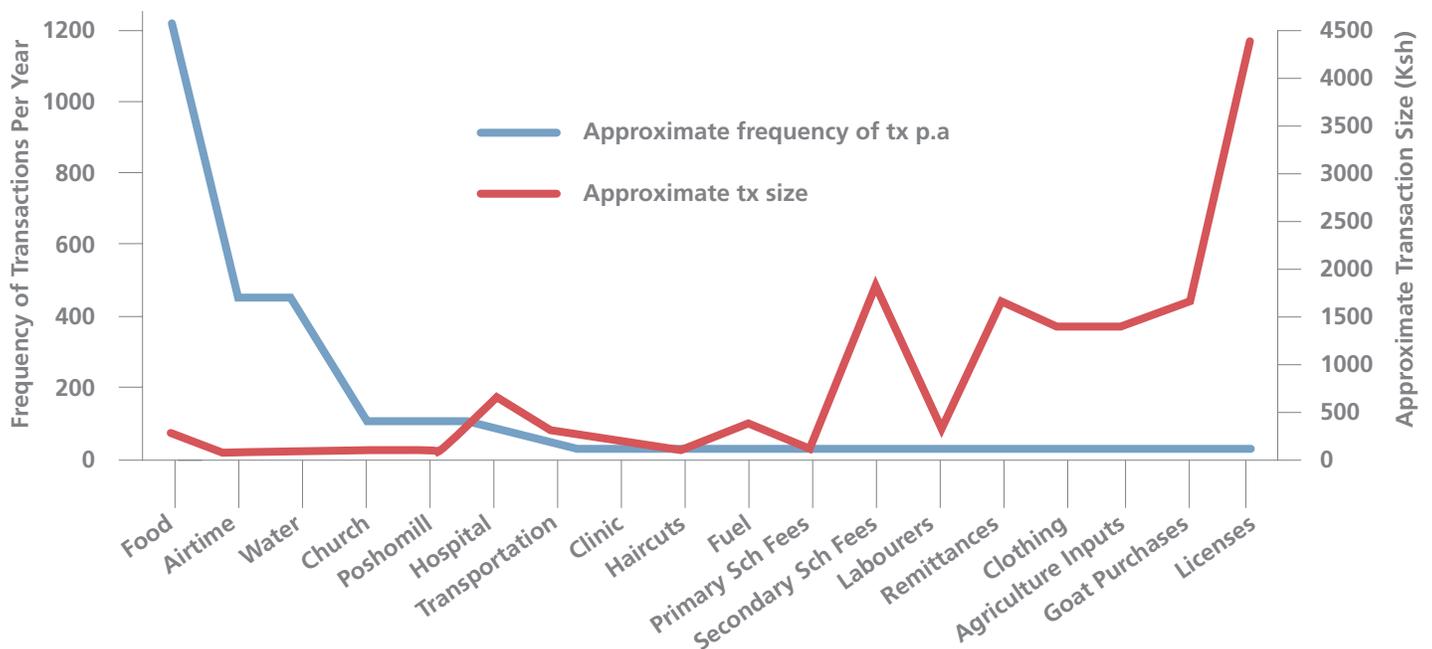
e-wallet or prepaid card. This is so even if the latter three may be initiated by the holder signing a paper form in the bank branch or at a merchant, or, in the case of cards, if they are mainly used to withdraw cash from an ATM, which is the single most common use in many developing countries.

## 2. Size and Frequency

Payments also differ in amount paid and in the frequency of payment, whether one-off or repeated regularly (and whether repeated for the same amount or not). These features of payments are key drivers of cost for both payers and payees.

- In the U.S., cash is most commonly used at merchants for purchase transactions less than \$10, but its use drops sharply to a quarter or less of transactions above \$20, where it is replaced by debit and credit cards and checks.<sup>50</sup>
- Figure A1 below plots the inverse relationship between payment size and frequency for a sample of residents in a small town in Kenya. Similarly, a 2011 survey of all transactions conducted by merchants in a Kenyan town during one week found very few transactions which were not in cash.<sup>51</sup>

Figure A1: Transaction frequency and size among selected rural households in Kenya



Source: Zollmann (2012) Figure 12

### 3. Identity of Payer and Payee

Payments also differ according to who is the payer and the payee in each case, forming the payment grid of combinations which are named in Figure A2 below.

Figure A2: The payment grid

		PAYEE		
		GOVERNMENT	PRIVATE SECTOR	PERSON (INDIVIDUAL)
GOVERNMENT		<b>G2G</b> Budgetary Allocations, Funding of Programs	<b>G2B</b> Grants, Payments for Goods and Services	<b>G2P</b> Welfare Programs, Salaries, Pensions
PRIVATE SECTOR		<b>B2G</b> Taxes, Fees for Licenses and Permits.	<b>B2B</b> Payments for Goods and Services in Value Chains	<b>B2P</b> Salaries and Benefits
DEVELOPMENT PARTNER		<b>D2G</b> Taxes	<b>D2B</b> Payment for Goods and Services	<b>D2P</b> Cash Transfers
PERSON (INDIVIDUAL)		<b>P2G</b> Taxes, Utilities	<b>P2B</b> Purchases	<b>P2P</b> Remittances, Gifts

In each cell, the number and value of payments and the mode of payments will differ. So, too, will the degree of choice of the payee: If a government or employer decides that it will pay salaries only into bank accounts, employees have no choice but to open accounts to receive the payment and may have limited choice as to which financial institution to use. However, a merchant who wishes to increase sales of goods may choose to accept a wide range of payment instruments, even if some bring increased costs; and a government which wishes to increase its tax collections is less likely to limit the means by which people can pay taxes.

Dimensioning the payments grid is important for understanding the nature of payment flows in an economy, yet it is not easy to do. In particular, it is hard to track the number of cash payments accurately: It requires the use of payment diaries in which a representative sample of people and businesses are required to record the size and means of payment of every transaction conducted during a defined period—ranging from a few days to a month or longer. The norms found in surveys like these can be grossed up to create a picture of payments in the economy as a whole. In Canada, for example, there were the equivalent of almost two payments for every adult every day of the year; and around half of all payment transactions in the Canadian economy are now electronic.<sup>52</sup>

Businesses, especially small businesses, depend heavily on check payments to other businesses (B2B), and even to employees (B2P). Asking “Why doesn’t every Kenyan business have a mobile money account?”, given how widespread mobile

payments are among individuals for P2P, Ignacio Mas & Amolo Ng’weno interviewed 75 Kenyan businesses of all sizes and found surprisingly low use of electronic payments, and a predominance of checks.<sup>53</sup> Tim Higgins and his co-authors a larger sample of surveyed 900 Kenyan SMEs and reported that while most used mobile money in some form, the usage was limited and relatively infrequent. These studies concluded that the popular mobile payment system widely used for remote P2P transactions in Kenya had yet to make inroads into business payments, in part because the interfaces to accounting systems were not customized and convenient.<sup>54</sup>

The picture is not that different for small businesses in developed countries. The survey of Canadian SMEs in the CFIB submission to the Canadian Payment System Review found that 66% of firms still paid employees by check and 61% of payments to suppliers were made by check, with credit card payments making up 22% and EFT 12%.<sup>55</sup> Checks predominated because they were relatively easy to use, but most importantly, aided record keeping for businesses.

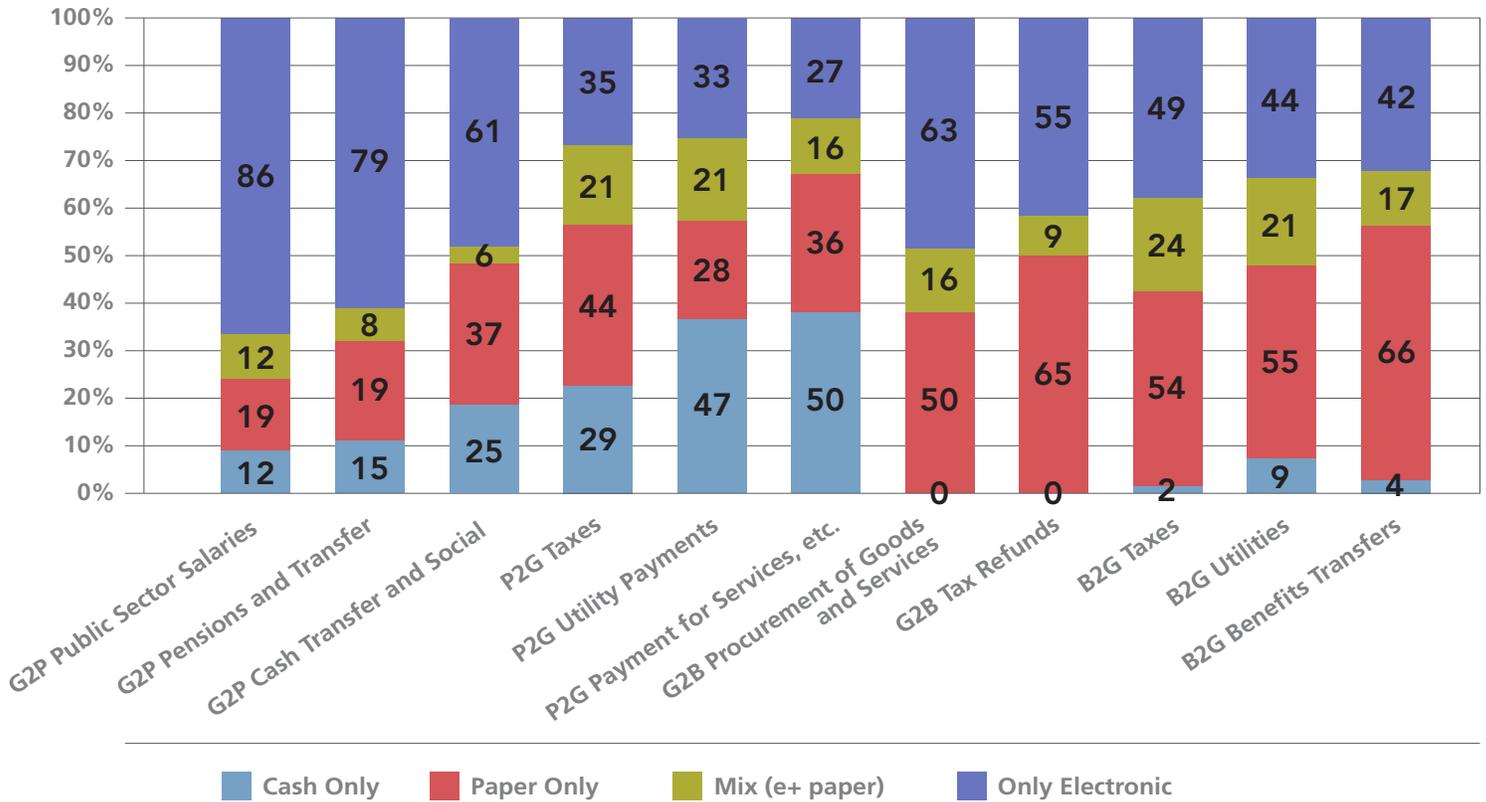
The ‘G’ row of the grid is easier to track, since there are far fewer payers involved than businesses or individuals—only different levels of government and government agencies and utilities. Nonetheless, few governments appear yet to track their means of payment and report on it consistently. The U.S. Treasury has a specialized bureau which is responsible for making and receiving payments across Federal government programs and agencies. That bureau reports that 86% of all payment transactions were electronic in 2011, up from 53%

fifteen years before—as described in Box E. The 2010 World Bank Payment Survey asked respondents to indicate the ways in which government payments were made and received in their country for each of 11 sub-categories. Figure A3 below summarizes the results: while a majority of the 129 respondent countries already pay public sector salaries only electronically (direct deposit into bank accounts), the proportion of welfare benefits or cash transfers paid only electronically drops off

to just under half. When it comes to receiving taxes or utility payments benefits from individuals or businesses (P2G, B2G), the proportion of governments which report receiving payments only electronically becomes a minority. Especially with government payments to and from businesses, the use of checks, or a mix of electronic and check, is in the majority.

**Figure A3: How governments pay and receive worldwide**

Legend numbers in each block are the number of countries which reported falling into each category



Source: World Bank Global Payment Survey 2010-data from Table III.22

Finally, members of the international development community have only recently started to pay more attention to their use of electronic payments. Apart from payments to individual cash transfer recipients, bilateral donors like USAID have started to assess how its implementing partners in country could become more electronic. The USAID GBI report Better than Cash: Kenyan Mobile Money Market assessment considered a range of implementing partners (an NGO, an MFI and a government established agency) across sectors and found that some of them were now using mobile money to make salary payments to remote and seasonal workers (D2P) and to provide cash advances for per diem, transport and petty cash (also D2P).<sup>56</sup>

- <sup>1</sup> Demirguc-Kunt, A., & Klapper, L. (2012). *Measuring Financial Inclusion: The Global Findex Database*. Washington, DC: World Bank.
- <sup>2</sup> J. Gillet. (2011, September). Analysis: Global mobile connections to surpass 6 billion by year-end. Wireless Intelligence. Retrieved September 5, 2012, from <https://wirelessintelligence.com/analysis/2011/09/global-mobile-connections-to-surpass-6-billion-by-year-end/>
- <sup>3</sup> 28.7% in Niger (2005), 48.7% in Haiti (2006). Source: World Bank, World Development Indicators.
- <sup>4</sup> According to the 2011 Global FINDEX Survey, only 0.2% and 2.9% of the adult population in Niger and Haiti used electronic payments, similar to the figure of 1.9% for low income countries in general.
- <sup>5</sup> B. MacDonald. (2012). *Banking with mobile phones in Haiti: a report on a T-Cash pilot project*. Baltimore: Catholic Relief Services
- <sup>6</sup> Mercy Corps. (2011). *Diary Of A Mobile Money Program: e-Book Two: Beneficiary Financial Diaries – In their Own Words*. Portland: Mercy Corps.
- <sup>7</sup> J.C. Aker, et al. (2011). *Zap It to Me: The Short-Term Impacts of a Mobile Cash Transfer Program (Working Paper 268)*. Washington DC: Center for Global Development.
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- <sup>9</sup> K. Rushton. (2011, December 10). Vodafone signs up mobile payment guru Joseph. *The Telegraph*.
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- <sup>13</sup> See references summarized in Box C.
- <sup>14</sup> The World Bank. (2010). *Payment Systems Worldwide: A Snapshot - Outcomes of the Global Payment Systems Survey*.
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- <sup>24</sup>  $\frac{3}{4}$  of adults globally make 1-2 deposits per month or fewer, 70% at a bank teller; while 66% report making 1-2 withdrawals or fewer, which are more or less evenly split between bank teller and ATM; Demirguc-Kunt, & Klapper.
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- <sup>27</sup> For a summary, see R. Cull, et al. (2012). *Financial Inclusion and Stability: What Does Research Show?* Washington DC: CGAP.
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- <sup>31</sup> See eBay. (2005, July 21). New Study Reveals 724,000 Americans Rely on eBay Sales for Income. San Jose, CA. Retrieved September 5, 2012, from <http://investor.ebay.com/releasedetail.cfm?releaseid=170073>
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- <sup>33</sup> See Humphrey on research from the Australian experience with credit cards, which suggests that even if rewards were reduced or eliminated, the effect on the share of payments made by credit card would be small: p.1732
- <sup>34</sup> Daily transactions at local stores in two communities: Collins, D., Fleming, P., & Zollman, J. (2011). Research on the Scope of Cash Versus Non-Cash Payment Methods in Kenya. Bankable Frontier Associates for the Bill & Melina Gates Foundation.
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- <sup>37</sup> See CFIB, p.2, for major obstacles reported by Canadian small business, which are topped by the cost.
- <sup>38</sup> Smith, et al.
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- <sup>42</sup> Bold, et al.
- <sup>43</sup> See Table 3, Leonard, Matt (2011) "G2P: Expanding Financial Inclusion in the Pacific: Fiji's Transfer of Social Welfare Recipients to a Savings-linked Electronic Payment System", Pacific Financial Inclusion Program, UNCDF
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