FIGI

FINANCIAL INCLUSION
GLOBAL INITIATIVE

Electronic Payment Acceptance Assessment Guide

ELECTRONIC PAYMENT ACCEPTANCE PACKAGE

WORLD BANK GROUP

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Acronyms and Abbreviations

ACH	Automated clearing house
ATM	Automated teller machine
CDD	Customer due diligence
EPA	Electronic payments acceptance
EMV	Europay, Mastercard and Visa
FAS	Financial Access Survey
FICP	Financial Inclusion and Consumer Protection Survey
FIGI	Financial Inclusion Global Initiative
FPS	Fast payment system
GPSS	Global Payment Systems Survey
ICT	Information and Communication Technology
IF	Interchange Fee
IMF	International Monetary Fund
ITU	International Telecommunication Union
KYC	Know Your Customer
MDD	Merchant due diligence
MDR	Merchant discount rate
MSME	Micro, small and medium enterprises
MSMR	Micro, small and medium retailers
NBEI	Nonbank e-money issuer
NFC	Near-field communication
NFIS	National Financial Inclusion Strategy
P2B	Person-to-business
POS	Point-of-sale
PSP	Payment service provider
PSO	Payment system operator
QR	Quick response
RBA	Risk-based approach
RTGS	Real-time gross settlement system
SDD	Simplified Due Diligence
STK	SIM toolkit
UNCTAD	United Nations Conference on Trade and Development
USSD	Unstructured supplementary service data
WBG	World Bank Group

I. Introduction and Background

Financial inclusion has been in the forefront of the international development agenda in the last couple of decades as a means to reducing poverty and increasing shared prosperity. In this regard, having access to a transaction account which enables safe storage of value and allows for making payments, is considered a first step to further financial inclusion. This underpins the World Bank Group's *Universal Financial Access* goal and the framework for the Committee for Payments and Market Infrastructures (CPMI) and the World Bank's (2016) *Payment Aspects of Financial Inclusion*.

Yet, transaction accounts are not always used for making payments. For example, according to the World Bank Global Findex database, 68.5 percent of adults have a transaction account, but only 52 percent of adults made or received at least one payment with the account owned. In addition, Global Findex also that a significant proportion of accounts remain inactive for at least 12 months. Moreover, according to a study by the World Economic Forum (WEF) and the World Bank Group (2016), only 37 percent of payments made or received by small merchants are made electronically.

As such, as part of its activities under FIGI, the World Bank established the FIGI Electronic Payments Acceptance (EPA) Working Group to foster effective practices for enabling and encouraging acceptance and use of electronic payments, with an emphasis on person-to-business (P2B) payments, both for proximity payments at the point of interaction and e-commerce, and on unserved and underserved groups.

As part of its work on the EPA Working Group, the World Bank has developed the *EPA Package*, a package of guidance notes and technical notes that is intended to guide public and private sector stakeholders in the design and implementation of reforms and programs to increase electronic payments acceptance.[1] This Assessment Guide is a part of the *EPA Package*, intended to assist public and private sector electronic payment ecosystem stakeholders (collectively, "EPA stakeholders") in comprehensively evaluating EPA development and identifying barriers that are stifling EPA uptake.

The *EPA Package* proposes the readers to conduct an EPA assessment to derive key insights for selecting, designing and implementing high-impact EPA reforms, to understand key strengths and weaknesses, and to develop a baseline against which to measure future EPA enhancement reforms and programs.

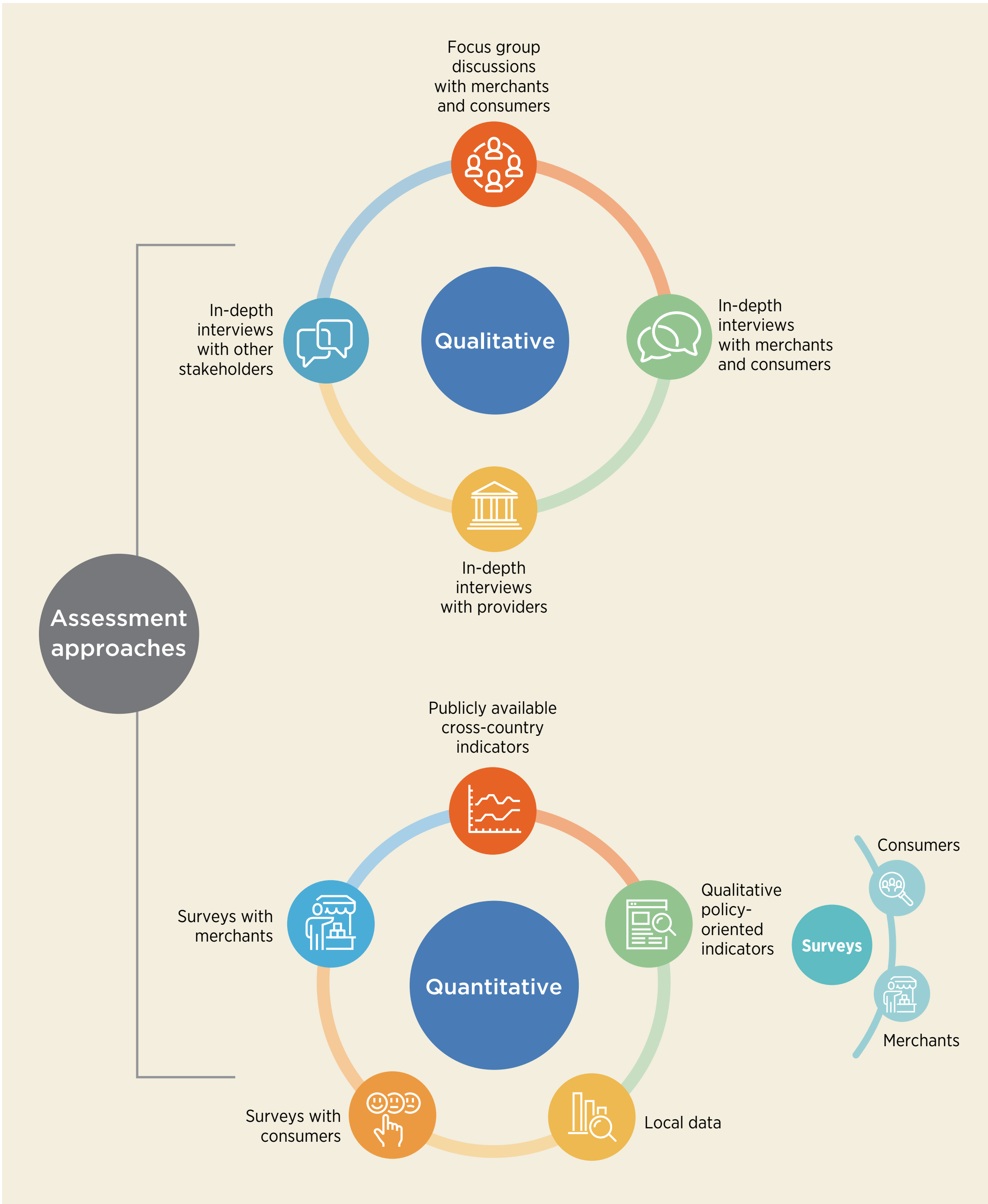
The methodology detailed in this Guide includes two components: (1) qualitative analysis and (2) quantitative analysis (Figure 1). There are advantages and disadvantages of these two approaches. For example, qualitative analysis is usually faster and cheaper, even when consumer and merchant focus group discussions are conducted. However, it usually does not allow for comparisons and benchmarking. Quantitative analysis, on the other hand, allows for comparisons and benchmarking, however if survey data needs to be collected, e.g. household or merchant surveys, then it can be costly and long. At the same time, there are usually several data gaps which may not allow for a thorough analysis. The Guide, therefore, recommends a combination of these two approaches for the assessment whenever possible.

The qualitative analysis proposes several discussions with participants of the EPA ecosystem in a country, including discussions with different types of payment service providers, payment system operators and intermediaries as well as focus group discussions with merchants and consumers. This analysis would focus on the perceptions of the market participants in terms of barriers impeding EPA and potential reforms and programs that could improve EPA. The quantitative analysis proposes an analysis of several existing indicators relevant for the EPA ecosystem as well as collection of new quantitative data in the form of merchant surveys if feasible. This analysis would support the qualitative analysis in analyzing the barriers for EPA.

The rest of this Guide is, therefore, dedicated to explaining these two components. Section 2 focuses on the qualitative analysis while Section 3 focuses on the quantitative approach. Annexes to this Guide include several questionnaires to help readers in pursuing either approach.

- **Annexes A–C: Interview Guides**—Instrument-neutral[2] sample interview guides that stakeholders can leverage to better understand EPA challenges and opportunities for merchants, providers, and households. The sample interview guides are meant to fill gaps in assessment elements for which indicators are not usually available or are insufficient.
- **Annex D: Local Data Collection Summary**—Summarizes the proposed indicators that need to be collected locally (Type 3, Table 2) to conduct aspects of the EPA assessment. In most cases, these will need to be collected by national authorities.
- **Annex E: Qualitative Policy Indicators Construction Methods**—Details the methods used to generate the qualitative policy-oriented indicators, which are derived from World Bank surveys administered to national authorities.
- **Annex F: Recommended Quantitative Measures for EPA Assessment and Quantitative Assessment Summary**—Presents the recommended list of indicators for the quantitative assessment approach.

FIGURE 1: Summary of Assessment Approaches



2. Qualitative Analysis

For the purpose of qualitative assessment, the Guide proposes the EPA stakeholders to conduct several interviews with different types of providers and focus group discussions and key informant interviews with merchants and consumers. Annexes A-C include interview guides for merchants, households and key providers of electronic payment services. For each interview guide, the emphasis is on collecting user-centric feedback on the level of financial access and usage, drivers and barriers to adoption of electronic payments including their attitudes and perceptions towards different types of payment mechanisms, and the role played by incentives and financial literacy campaigns in promoting adoption. The suggested format for conducting the qualitative analysis for merchants and households is by using focus groups or in-depth interviews (IDIs). Depending on the type of the interview, the user is recommended to structure a set of questions following the Annexes as a guidance. The suggested format for obtaining feedback from service providers is through individual interviews/meetings with issuing and acquiring banks, payment service providers, e-money issuers, international and domestic payment schemes.

2.1 MERCHANT QUALITATIVE ASSESSMENT

To facilitate the merchant qualitative survey, EPA stakeholders are recommended to collect information on the following categories: merchant background and demographics; merchant education and perceptions (regarding the financial sector in general and payment options in particular), merchant acceptance of person-to-business payments, merchant payments of salaries to employees, supplier payments. The suggested format for merchant qualitative analysis is focus groups or IDIs.

For the purposes of the qualitative assessment, EPA stakeholders are recommended to interview different types of merchants, by splitting merchants into micro, small, medium and large-sized merchants based on local guidance, and by splitting merchants into grocery and non-grocery. Additional splits for urban/rural can also be useful depending on the local context.

The following is an overview the recommended information to be collected. Detailed questions are provided in Annex A.

- Merchant background and demographics
  - Merchant size, location and type of merchant
  - Merchant registration status

- Ownership status (including whether male/female owner)
- Number of employees
- Income profile of consumers shopping at merchant location

- Merchant financial access
  - Access to a business account, a merchant account
- Merchant education and perceptions
  - Awareness of merchant for different payment types
  - Merchant's level of comfort using different payment options
  - Awareness on merchant account opening process
  - Financial and digital literacy
  - Attitude toward financial incentives and promotions
- Merchant payment behavior
  - Merchant acceptance of person-to-business payments
    - Use of different payment options offered to customers
    - Relationship with bank, PSP, etc. for access to merchant account
    - Drivers/barriers for using or not using electronic payments
    - Use of incentives to promote acceptance of electronic payments
    - Use of value-added services (e.g., short term credit) to promote acceptance
    - Preferences for how they receive educational materials from service providers, governments
  - Payment of salaries to employees
    - Current use of payment instrument for payment of merchant's employees
    - Openness to electronic payment alternatives
  - Supplier payments
    - Types of suppliers used by the merchants
    - Current use of payment method with suppliers
    - Access to credit through suppliers

In addition, merchant business model, financial management, accounting and inventory management models can also be useful to understand, especially for considerations related to value-added services as incentives.

2.2 CONSUMER QUALITATIVE ASSESSMENT

To facilitate the household (consumer) qualitative survey, the EPA stakeholders are recommended to consider the following categories: household background and demographics, financial access and literacy, payment behavior, and perceptive for incentives. The suggested format for consumer qualitative analysis is focus groups or IDIs.

For the purposes of the qualitative assessment, the Guide recommends interviewing different types of consumers. For example, consumers can be split into urban/rural, by age group, by gender, by income group, by profession, depending on the local context.

The following summarizes broad categories of points to be considered in interviews with the consumers. Further details are provided in Annex C.

- Consumer background and demographics
  - Education, profession, employment status
  - Management of finances, household budgeting
  - Household spending patterns
- Consumer financial access
  - Access to a transaction account
  - Types of financial services used by the household (including transaction accounts, savings, credit, insurance, investments)
  - Access to regulated financial service providers vs. the use of informal channels
- Consumer education and perceptions
  - Overall experience with different types of financial services and what are these used for
  - Awareness of and willingness to use electronic payment alternatives
  - Financial and digital literacy
  - Attitude towards financial incentives and promotions
- Consumer Payment behavior
  - Perceptions towards different payment types
  - Barriers to switch from cash for different payment needs
  - Use of payment instrument for bills, utilities and government payments

2.3 PAYMENT SERVICE PROVIDERS

The feedback obtained from service providers is useful to understand the current opportunities and challenges in the development of the EPA ecosystem including the effectiveness of the legal and regulatory frameworks. The suggested format for obtaining feedback from service providers is through individual interviews/meetings with issuing and acquiring banks, payment service providers, e-money issuers, international and domestic payment schemes. The key categories include:

- Issuance of payment cards and digital wallets
  - Market development
    - Competitive landscape and profitability
    - Types of financial products offered
    - Consumer spending patterns
  - Marketing, incentives and promotions
    - Customer segmentation strategies
    - Customer onboarding process
    - Use of incentives and promotions
  - Regulatory/policy barriers to adoption of electronic payments
- Acquiring of payment cards and digital wallets
  - Market development
    - Competitive landscape and profitability
    - Economics of acceptance
  - Acquiring process
    - Merchant acquisition and onboarding processes
    - Level of specialization in acquiring activities
    - Use of intermediaries in acquiring activities
  - Marketing, incentives and promotions
    - Merchant segmentation strategies
    - Use of innovative merchant acceptance solutions (e.g., QR Code, NFC, etc.)
    - Use of incentives and promotions
  - Regulatory/policy barriers to growing EPA

The Guide recommends interviewing several different provider types, including banks and non-bank PSPs, intermediaries, international and domestic card schemes, and switches. Annex B provides more detailed questions for different types of providers.

3. Quantitative Analysis

For the purposes of the quantitative analysis, the Guide provides an approach for evaluating a range of ecosystem, economic, and legal and regulatory issues that affect EPA.[3]

To facilitate the analysis, three thematic policy categories are used in what follows: (1) retail payments ecosystem, (2) economics of EPA, and (2) legal, regulatory and oversight. Each of these policy categories is broken down into a series of sub-categories, which are presented in Table 1. Grouping assessment elements into policy categories and sub-categories is meant to help users assess related EPA policy areas.

The rest of this section identifies and discusses the nature of the assessment elements within each policy category and how they affect EPA. Further, it proposes country-level quantitative indicators for measuring EPA barriers and development issues. These indicators constitute one of three types, which are described in Table 2.

Type 2 and Type 3 indicators can be sourced from the interviews and focus group discussions described in section 2 as well as quantitative surveys with households and merchants.[4] In addition, some aspects of the EPA landscape may not merit a quantitative analysis. This is when combining the qualitative approach outlined in section 2 can be combined with the quantitative approach outlined in this section for additional depth.

TABLE 1. EPA policy categories and sub-categories

Categories	Sub-categories
Retail Payments Ecosystem	Financial access Market development Payment infrastructures Other financial and ICT infrastructures Education and perceptions
Economics of EPA	Acceptance benefits and costs Provider costs and risks Consumer behavior
Legal, Regulatory, and Oversight	Legal and regulatory (general) Legal and regulatory (financial) Payment system oversight

This section, therefore, enables users to evaluate a comprehensive range of EPA assessment elements using quantitative indicators from several sources. EPA stakeholders are recommended to use qualitative assessment elements from section 2 and local knowledge to judge whether some policy categories, sub-categories, or assessment elements are more relevant for EPA in their economies than others.

TABLE 2. Assessment Guide indicator types

Indicator Type	Indicator Description
TYPE 1: Publicly available cross-country metrics	These indicators can be obtained from publicly available cross-country databases maintained by international organizations, such as the World Bank and the International Monetary Fund (IMF). The World Bank will make available an excel-based database containing the most recent publicly available data on a country-by-country basis for Type 1 indicators.
TYPE 2: Qualitative policy-oriented indicators	For a number of qualitative policy-oriented topics that do not have associated publicly available indicators, the Assessment Guide proposes some basic scoring approaches, which are derived from questions contained in the World Bank Global Payment Systems Survey (GPSS) and Financial Inclusion and Consumer Protection (FICP) survey. Even if data from these surveys are not available or local authorities have not responded to these surveys, EPA stakeholders can leverage the questions to construct indicators that capture a wide range of EPA-relevant national payment system characteristics and regulatory approaches.
TYPE 3: Local data	The majority of proposed indicators will need to be collected locally, either through existing national data or through survey approaches, primarily with merchants and payment service providers.

3.1 RETAIL PAYMENTS ECOSYSTEM

The EPA Assessment focuses on a range of factors that contribute to the relative efficiency and convenience of EPA under the retail payments ecosystem category. The category comprises five policy sub-categories: (1) financial access, (2) market development, (3) payment infrastructures, (4) other financial and information and communication technology (ICT) infrastructures, and (5) education and perceptions. Table 3 presents the EPA assessment elements associated with each of the retail payments ecosystem policy sub-categories.

It is important to note that many elements addressed in this section affect merchants indirectly. However, the retail payments ecosystem serves as the foundation for EPA. Countries in which the ecosystem is lagging may find it difficult to generate sustainable EPA advancement. A further benefit of improvements to the retail payments ecosystem is they may contribute to the development of the broader digital economy.

3.1.1 Financial Access

The financial access sub-category focuses on access to the financial accounts and instruments that are necessary for merchants' ability to accept and consumers' ability to make electronic payments. The Guide proposes that EPA stakeholders first take stock of the electronic payment instruments and acceptance channels that are available in the country that is being assessed. Then, stakeholders could assess merchant financial access, consumer financial access, and the country's financial inclusion commitment.

TABLE 3. Retail payments ecosystem assessment elements

Policy sub-category	Assessment elements
Financial access	Instruments and acceptance channels Merchant financial access Consumer financial access Financial inclusion commitment
Market development	Scale Structure
Payment infrastructures	Interoperability and standardization Fast payment system Real time gross settlement Automated clearing house
Other financial and ICT infrastructures	Telecommunications Identification systems Credit reporting systems Access points E-commerce readiness
Education and perceptions	Financial capability Cash culture

3.1.1.1 Electronic Payment Instruments and Acceptance Channels

Electronic payment instruments broadly include three categories (CPMI and WBG 2016):

- Payment card-based instruments
- Electronic money (e-money)-based instruments[5]
- Electronic funds transfer (EFT)-based instruments[6]

Historically, payment cards and e-money have been more common than EFT instruments for making person-to-business (P2B) merchant payments, but the latter are becoming more popular for making such payments.

EPA stakeholders would need to evaluate which payment instruments are available in the country for making in-person and e-commerce P2B merchant payments.

There are a wide variety of channels that enable acceptance of these payment instruments, and innovation in the acceptance channel space is rapid. This section focuses on the channels that are presently most accessible for MSMRs in developing economies. These broadly include: point-of-sale (POS) terminal; mobile POS (mPOS); mobile-to-mobile; quick response (QR) code; and Internet. EPA stakeholders would need to take stock of which EPA channels are available for MSMRs in their country.

Different technologies govern how payments are executed through these channels. For example, payments at POS terminals increasingly support both contact and contactless payments. Contact payments involve using a payment card to swipe a magnetic stripe or dip a secure chip. Contactless payments are conducted using Near Field Communication (NFC). Likewise, there are various methods for conducting mobile-to-mobile payments. Currently, the most relevant mobile-to-mobile payment methods for MSMRs in developing economies leverage unstructured supplementary service data (USSD) or SIM toolkits (STK). QR code payments are also broadly distinguished by static and dynamic variants. The former variant is currently more accessible to MSMRs in developing economies.

3.1.1.2 Merchant Financial Access

After assessing which types of instruments and acceptance channels are available in the country for making P2B merchant payments, EPA stakeholders could assess merchant financial access, which involves evaluating merchants' access to three elements: (1) financial accounts, (2) acceptance channels, and (3) external financing.

3.1.1.2.1 Account access

As a first step, EPA stakeholders could evaluate merchant account access. A merchant account is a type of business account that allows a business to accept and process electronic payments. This involves evaluating the merchant account opening process, including underwriting, business registration requirements, business account opening process, supporting documentation requirements (e.g. financial statements, business plan) and compliance requirements (e.g. AML/CFT, PCI-DSS). There is usually no quantitative data in the form of comparable indicators to cover this step and EPA stakeholders are recommended to use qualitative approaches outlined earlier for this purpose, in interviews with merchants and relevant providers. In addition, other components of the *EPA Package*, e.g. *Innovations in Electronic Payment Acceptance* and *Regulatory Aspects of Intermediaries in Electronic Payments Acceptance* provide additional details and guidance on this point.

Merchants generally must have an active account typically but not necessarily with the acquiring PSP to offer EPA. Table 4 describes the types of accounts merchants typically need to accept each type of payment instrument.

EPA stakeholders could assess the percent of MSMRs that have an active account necessary for accepting each of the payment instruments used in the country for P2B merchant payments. Publicly available cross-country indicators are not available for assessing merchants' access to accounts with acquirers, acceptance intermediaries, and EMIs. Therefore, EPA stakeholders will need to look to existing local data sources or conduct, and extrapolate from, a merchant survey to accurately assess these elements.

3.1.1.2.2 Acceptance channel access

The second component of assessing merchant financial access relates to acceptance channels. EPA stakeholders could assess the percent of MSMRs that are equipped to accept each type of payment instrument that is available in the country for making P2B merchant payments. For additional granularity, EPA stakeholders can evaluate the percent of MSMRs that accept payments through the primary EPA channels available in the country. As

TABLE 4. Types of merchant accounts necessary for accepting electronic payment instruments

Payment Instrument	Type of Merchant Account
Payment card	Accepting card payments requires an account with a bank or non-bank acquirer or an acceptance intermediary. Acceptance intermediaries, especially payment facilitators, which are also known as payment (or merchant) aggregators, have been particularly effective in onboarding and processing payments on behalf of small merchants through their own merchant accounts.[7]
Electronic money	From an EPA perspective, e-money is similar to a three-party card scheme, in the sense that the issuer and the acquirer are often one and the same. Thus, to accept e-money payments, merchants typically need a merchant account with an e-money issuer (EMI).[8]
Electronic funds transfer	To accept account-to-account EFT payments, merchants need a business bank account, depending on the size of the merchant and the scale of the business.
All 3 instruments	When there is interoperability across multiple instruments, merchants can own a transaction account provided by a bank or a non-bank to receive electronic payments.

with account access, publicly available data for assessing acceptance channel access are limited. EPA stakeholders will generally need to consult local data or conduct a merchant survey to accurately assess this element.

The World Bank GPSS includes two indicators that can help EPA stakeholders assess acceptance channel access in a comparative context. These are *POS terminals* and *merchants accepting QR code payments*, both of which are measured in terms of 100,000 adults.

However, these indicators have some limitations. First, in some cases, merchants may have more than one POS terminal, which is not captured in the data. Further, POS terminals and QR codes are not equally relevant for all countries. Indeed, many countries have a high concentration of POS terminals or merchants accepting QR code payments, but not both. Therefore, EPA stakeholders would need to judge these indicators in concert with knowledge of local payment system characteristics.

3.1.1.2.3 Access to external finance

MSMRs without access to external finance often use cash revenue to directly fund daily working capital needs to pay suppliers in cash. As a consequence, such MSMRs may perceive that receiving funds electronically, as opposed to in cash, is incompatible with their business model. If regulation permits (see section 3.3.2.1 for further discussion), PSPs can help mitigate this barrier by providing MSMRs short-term credit in connection with EPA products and services.

Assessing this element involves two steps. First, in order to gain a handle on the potential scope of this barrier, EPA stakeholders could collect data on how merchants pay suppliers, employees, and for other operating expenses. Second, stakeholders need to assess access to external finance among MSMRs. This could be measured as the percent of MSMRs that have a line of credit with a PSP. If these data are not readily available at the country-level, EPA stakeholders can include these topics as questions in a merchant survey.[9]

In addition to interview approaches, the International Financial Corporation (IFC)'s MSME Finance Gap Database contains a variety of metrics that can help EPA stakeholders measure financial constraint among MSMEs generally and microenterprises specifically, e.g. *financially unconstrained micro-enterprises (% of formal micro-enterprises).* Financially unconstrained microenterprises "are those that do not appear to have any difficulties accessing credit or do not need credit."[10]

3.1.1.3 Consumer Financial Access

Consumers require access to one or more of the payment instruments identified in section 3.1.1.1 to conduct P2B electronic payments. World Bank Global Findex data permit a comprehensive assessment of the primary types of payment instruments available to consumers. Table 5 identifies the Global Findex indicators that can be used to assess consumer financial access. If more recent or more granular data are beneficial, EPA stakeholders can consult local data or derive these metrics from a consumer survey. More granularity could be particularly relevant for e-money accounts, as Global Findex data only capture mobile money account access.

TABLE 5. Consumer financial access assessment indicators

Payment Instrument	Global Findex Indicator
Payment card	Debit card ownership (% age 15+) Credit card ownership (% age 15+)
Electronic money	Mobile money account (% age 15+)
Electronic funds transfer	Financial institution account (% age 15+)

3.1.1.4 Financial Inclusion Commitment

In addition to evaluating merchants' and consumers' levels of financial access, it is important to assess whether national authorities have taken measures to promote financial inclusion in coordination with relevant stakeholders. Developing and launching a National Financial Inclusion Strategy (NFIS) provides an organized approach for pursuing these measures. The World Bank maintains the NFIS resource center, which provides extensive guidance and examples for EPA stakeholders looking to develop an NFIS (WB 2019). In addition, having a national retail payments strategy has specific relevance for the EPA context. The World Bank's national retail payments strategy toolkit (WB 2012) provides guidance for developing such a strategy.

3.1.2 Market Development

The market development sub-category focuses on how the scale and structure of the electronic payments market affect EPA.

3.1.2.1 Scale

The market for electronic payments is "two-sided:" consumers' demand for conducting electronic payments affects merchants' demand for accepting electronic payments and vice versa (Rochet and Tirole 2004; Rysman 2009; Bounie, Francois and Van Hove 2016; Visa 2021). Limited scale can negatively affect MSMRs' perceptions of the electronic payments value proposition. If electronic payments are not widespread in a given market, it may not be clear to MSMRs why accepting electronic payments offers any sort of competitive advantage. Limited market scale can also harm the viability of PSPs' business models. Moreover, sufficient market scale helps various payment infrastructures benefit from economies of scale in messaging, clearing, and settlement (CPMI and WBG 2016).

In assessing market scale, EPA stakeholders are recommended to measure the *share of retail payments made electronically* in a given economy for each type of retail payment flow. While this section focuses primarily on P2B retail payments, electronic retail payments of all kinds can affect market scale. The availability of a range of different use cases for electronic payments can induce both the consumers and the merchants to increase their demand for conducting payments electronically at the point-of-sale.[11] Table 7 summarizes the types of retail payments.

It would be useful to further disaggregate the share of P2B electronic payments by expenditure category, including travel and entertainment, large-ticket purchases, everyday spending, small ticket purchases, and bill payments. Research has shown that, to reach the electronic payments tipping point, it is typically necessary for consumers to use electronic payments for everyday spending, such as groceries and gas, as well as for small ticket purchases, such as those made at convenience stores and fast-food restaurants (Govil 2016).

Two additional indicators are useful for measuring the market scale barrier, but they have some limitations. The first is *made digital payment in the past year* from the World Bank Global Findex Database. The indicator represents the percentage of adults (age 15+) in a country who report using mobile money, a debit or credit card, or a mobile phone to make a payment from an account, or report using the Internet to pay bills or to buy something online, in the past 12 months. This shows the propensity to make digital payments, capturing a wide range of types of electronic payments. One limitation of this indicator is that it does not capture magnitude, since its threshold involves making only one digital payment in a year.

The second indicator is *electronic payments per capita* from the World Bank GPSS. The indicator measures the aggregate per capita number of card transactions, credit transfers, direct debits, and e-money payments. It is a direct measure of electronic payments volume. It complements the *made digital payment* indicator, which does not address electronic payment market depth, in terms of the level and breadth of electronic payment transactions.

TABLE 6. Types of retail payments

Payer \ Payee	Person	Business	Government entity
Person	P2P	P2B	P2G
Business	B2P	B2B	B2G
Government entity	G2P	G2B	G2G

P = person, B = business, G = government; note: adapted from CPMI and WBG (2016)

3.1.2.2 Structure

The structure of the electronic payments market, in terms of the competitive landscape of PSPs, can affect EPA development. Market structure is a complex barrier. On the one hand, lack of competition or diversity of PSPs

BOX 1

COVID-19 AND ELECTRONIC PAYMENT MARKET SCALE

Electronic payments have been crucial in sustaining economic activity during the COVID-19 pandemic. When measured in terms of the share of payments made electronically, COVID-19 has likely increased market scale in many economies around the world due to at least four factors. First, merchants and consumers appear more willing to accept and use electronic payments at the point of economic interaction due to the potential health benefit of reducing contact in the payment process. Second, consumers have relied more on e-commerce during the pandemic, and electronic payments are a popular, though not universal, method for settling e-commerce transactions. Third, the reduced availability of cash access points in some cases makes obtaining cash more challenging. Finally, where infrastructure permits, governments have sought to disburse pandemic relief payments to households and businesses through electronic methods.

Measuring the depth of the electronic payments market requires both the share of electronic payments and gross payments. While the former has likely increased for the reasons cited above, the latter is tied to economic activity and spending. If spending is down due to economic malaise owing to the health crisis, the depth of electronic payments market may be down as well. In general, the long-run effects of COVID-19 on electronic payment market scale are still unclear and will likely vary from country to country.

can keep the price of services high, stifle innovation, and limit incentives for providers to expand and improve the quality and efficiency of electronic payment services. On the other hand, direct and indirect network externalities and economies of scale achieved by large providers can be beneficial for market development. Temporarily high prices can also attract new, innovative entrants into the electronic payments market. Thus, market structure needs to be judged in concert with market scale and the state of EPA uptake more generally.

To directly measure the structure of the market for electronic payment services, this Guide recommends using local data to take stock of the level of market concentration among PSPs on both the acceptance and issuance sides of the market. On the acceptance side, tracking the share of payments value and volume processed by the top three acquirers in the market would be useful. Additionally, many MSMRs globally have an account with a facilitator in lieu of an account with a traditional acquirer. Therefore, it may also be useful to track the value and volume of payments processed by the top three facilitators in these instances. On the issuance side, EPA stakeholders could track the same concentration metrics for the top card issuers and EMIs.

The structure of the retail market can also greatly affect the ease with which providers can reach MSMRs with EPA products and services. An excessively fragmented MSMR market can raise the cost of providing EPA services. Likewise, EPA development is vastly different between urban and rural areas in many countries. To this end, it would be useful for EPA stakeholders to track the distribution of key merchant demographics, including retailer segment, geography, formality, and size, among other factors.

Depending on data availability, size can be captured through employee-based thresholds, turnover-based thresholds, or both. Globally, employee-based thresholds are more common for distinguishing MSMEs than turnover-based thresholds (IFC 2019), due to data availability, but the latter may be more accurate in the EPA context, especially when evaluating brick-and-mortar and e-commerce merchants in the same assessment. Specific thresholds will generally be locally tailored.[12]

3.1.3 Payment Infrastructures

The payment infrastructures sub-category focuses on assessing the availability, safety, reliability, and efficiency of key infrastructures involved in the exchange of payment information and funds. Specifically, this sub-category addresses: (1) interoperability and standardization, (2) fast payment systems (FPS), (3) automated clearing house (ACH), and (4) real time gross settlement system (RTGS).

To help measure aspects of these payment infrastructures, the Assessment Guide proposes a series of assessment metrics that are based on questions posed in the GPSS, where relevant data are available. The construction of these assessment metrics is detailed in Annex E, table E.1. EPA stakeholders can utilize this system to evaluate payment infrastructures in local economies using local data.

3.1.3.1 Interoperability and Standardization

Interoperability and standardization of payment systems reduce fixed costs, promote competition, and support economies of scale, while improving convenience for payment services users (CPMI and WBG 2016). Interoperability also increases the effective coverage of access points. EPA stakeholders could consider a variety of key infrastructure issues in evaluating interoperability and standardization.

First, it is useful to understand the landscape of interoperability arrangements from both a switch and scheme perspective. Multiple switches and schemes could co-exist in a country with some being provided by international card networks as part of their global processing infrastructure and others being domestic in nature. Further, some might be for-profit or not-for-profit and some might be consortiums or standalone institutions. From an assessment perspective, the methodology is neutral and does not consider any one type of institutional arrangement as better than another. What needs to be assessed are: whether in aggregate there is a high level of interoperability in the country; whether the market is competitive; whether all the arrangements are safe, reliable and efficient; and whether all arrangements are overseen effectively.

Focusing first on the interbank card switch, this critical element represents the technical transaction processing infrastructure that connects payment card issuers and acquirers, enabling the clearing of payment card transactions between issuing banks' cardholders and acquiring banks' merchants. As such, it plays a direct role in EPA efficiency, which in turn impacts the merchant and consumer experience and can influence their decision to use electronic payments. In assessing the payments card switch, EPA stakeholders could evaluate: the presence of at least one payment card switch; supported transactions; settlement mechanisms; access policies; and fraud prevention. The switch could either process the transactions domestically or in an international infrastructure; and be domiciled in the country or be part of the processing infrastructure of international card networks.[13] Schemes have been critical in facilitating interoperability, standardization, and the smooth functioning of EPA, particularly in the case of payment cards.[14] A scheme, which is typically associated with a card brand, sets out the operational arrangements for payment card transactions. The scheme governs the obligations of relevant parties, including cardholders, merchants, acquirers, issuers, and other acceptance intermediaries. Further, scheme rules lay out procedures for transaction routing, clearing, settlement, chargebacks, and dispute resolution, among other functions. Certain international schemes have been successful in promoting interoperability and standardization globally. A number of countries have also introduced domestic schemes to further facilitate EPA and electronic payments usage by providing additional choice. In assessing this element, EPA stakeholders could determine whether market schemes are in place for the payment instruments available in the country.

Interoperability of specific payment acceptance channels is also important. EPA stakeholders are recommended to evaluate whether regulations impose interoperability standards for the acceptance channels available in the country. The Europay, Mastercard and Visa (EMV) Specifications, which are managed by EMVCo, provide a range of potential interoperability standards for various acceptance technologies. These include standards for contact, contactless, mobile, QR codes, secure remote commerce, and 3-D secure.[15, 16] Finally, it is important to evaluate infrastructure dynamism and reliability. To this end, EPA stakeholders could evaluate whether the entities operating interoperability arrangements periodically introduce innovations and promotions to advance electronic payments. Further, it is useful to examine whether interoperability arrangements are considered robust, through metrics such as the rates of downtime and transaction failures.

3.1.3.2 Fast Payment Systems

Fast payment systems (FPS) are those retail payment systems that enable "the transmission of the payment message and the availability of final funds to the payee…in real time or near-real time" and around the clock (CPMI 2016: 1). Fast payments are attractive to payees, including merchants, due to their settlement speed and instant availability of funds. These properties can potentially help merchants better manage cash flows and reduce reliance on expensive short-term financing to close working capital gaps.

Of the 114 respondents to the GPSS, 49 indicate that an FPS is operational in their country, and another 50 indicate than an FPS is being planned in the next three years (World Bank 2020c). More recent research indicates that over 60 countries have implemented an FPS (World Bank 2020b). National authorities, FPS operators, and FPS participants need to ensure that the rapid adoption of FPS is met with appropriate safeguards and risk management standards.

The World Bank's forthcoming FPS toolkit proposes FPS assessment approaches and offers guidance for FPS development, enhancements, and legal, regulatory, and governance arrangements (World Bank 2020b, World Bank 2021a).[17] Box 2 provides a high-level overview of the key topics addressed in the toolkit.

While the FPS toolkit provides an in-depth assessment methodology for the landscape for fast payments development, this section of the Assessment Guide proposes some FPS assessment criteria related to FPS availability and oversight.[18] From an availability standpoint, EPA stakeholders could assess whether:

- An FPS is operational or is being developed.
- The FPS applies to a wide range of payment flows, including P2B merchant payments.
- The FPS supports the use of aliases (e.g., phone number, email, national ID) to verify users and/or initiate fast payments, instead of bank account numbers.
- QR code standards are in place that enable the use of QR codes for fast payments at the physical point-of-sale and at e-merchants.

Further, EPA stakeholders could assess whether an FPS oversight framework is in place. Oversight criteria[19] should address:

- ***Legal Basis:*** An FPS legal framework should delineate the rights and obligations of FPS participants, establish clear rules on payment finality, establish risk-based and proportional market integrity standards, ensure financial consumer protection standards are in place, and provide for data privacy and integrity.
- ***Governance:*** The FPS should have transparent, inclusive, and effective governance arrangements that promote safety and efficiency.
- ***Risk Management:*** Standards should compel relevant stakeholders to identify, measure, monitor, and manage risks that arise in or are borne by the FPS. Key risks to address include legal, credit, liquidity, operational, fraud, and reputational risks.
- ***Financial Consumer Protection:*** FPS-related financial consumer protection standards, including dispute resolution and complaints handling mechanisms, should be robust.[20]
- ***Efficiency and Effectiveness:*** The FPS should enable competition between PSPs and promote accessibility, useability, predictability, and scalability.

3.1.3.3 Automated Clearing House

An ACH serves as a processing hub for interbank transactions and plays an important role in clearing and netting large volume, often low value payments. An ACH gen-

BOX 2

OVERVIEW OF THE WORLD BANK FAST PAYMENT SYSTEMS TOOLKIT

The World Bank has developed an FPS toolkit that includes four primary modules (World Bank 2020b, World Bank 2021a). The modules and underlying topics are outlined below.

MODULE 1: FPS structure—Covers an assessment of FPS objectives and developing structural and pricing components in order to drive collaboration and innovation of the system. Key Module 1 topics include:

- Motivations for FPS
- Stakeholder Ecosystem and Approach to Setting up FPS
- Funding and Pricing

MODULE 2: Technology specifications—Covers an assessment of technology and designing technical specifications and system development components to achieve interoperability. Key Module 2 topics include:

- Options for System Development
- Technical Specifications (including messaging format, customer authentication, APIs)
- Connectivity
- Clearing and Settlement
- Interoperability

MODULE 3: Customer needs—Covers an assessment of customer requirements and determining payment instruments, payment types, use cases and access channels with the goal of driving user uptake. Key Module 3 topics include:

- Overlay Services and Aliases
- Payment Instruments, Payment Types Supported, and Use Cases and Services
- Access Channels
- User Uptake

MODULE 4: Legal and regulatory considerations—Covers an assessment of governance requirements and deciding legal and regulatory frameworks, risk management practices and dispute resolution mechanisms in order to enhance safety and security. Key Module 4 topics include:

- Legal, Regulatory, and Governance Considerations
- Risk Management (including liquidity and settlement risk, operational and fraud risk, and cyber resilience)
- Dispute Resolution and Customer Complaints

erally focuses on EFT-based payments. As discussed in section 2.1.1, account-to-account EFT-based payments are becoming more common for making P2B merchant payments. Further, EFT-based payments are important for digitizing other aspects of merchants' business models, such as salary, utility, and rent payments. Digitizing these operating expenses can make merchants more willing to accept electronic payments. In assessing ACH infrastructures, the following elements are important: ACH availability, settlement risk management and controls, settlement frequency, access policies, and settlement mechanisms.

3.1.3.4 Real Time Gross Settlement System

An RTGS is a large-value interbank settlement system. Though it is not frequently used directly in clearing retail payments, an RTGS serves as a critical foundation for efficient settlement processes. Indeed, in many countries, final settlement of net positions in switch and ACH infrastructures takes place through an RTGS. Thus, an RTGS contributes to the safe and efficient settlement of retail payments (CPMI and WBG 2016).[21] When assessing the RTGS within the context of EPA, stakeholders could evaluate RTGS usage and access policies.

3.1.4 Other Financial and ICT Infrastructures

This sub-category focuses on the financial and ICT infrastructures that are not directly related to payments clearing and settlement but are nevertheless important for efficient and cost-effective EPA. The sub-category comprises five elements: (1) telecommunications, (2) identification, (3) credit reporting systems, (4) access points, and (5) e-commerce readiness.

3.1.4.1 Telecommunications

POS terminals and mobile acceptance platforms necessary for EPA depend on stable connectivity. Likewise, critical functions, such as authorization, clearing, and funds receipt require consistent access to necessary networks. Thus, poor telecommunications infrastructure can hinder

EPA. In assessing how telecommunications affect EPA, stakeholders would need to evaluate whether the degree of connectivity, network coverage and access are interfering with the functioning of the EPA platforms, such as POS terminals and mobile acceptance technology, or impeding other critical functions, such as authorization, clearing, settlement, and receipt of funds.

Two publicly available composite indicators are useful for measuring the telecommunications barrier. The first includes the *access* and *use* sub-indices of the International Telecommunication Union (ITU)'s ICT Development Index. The *access* sub-index contains five indicators: fixed telephone subscriptions, mobile-cellular subscriptions, international Internet bandwidth per Internet user, households with a computer, and households with internet access (ITU 2017: 26). The *use* sub-index includes three indicators: individuals using the Internet, fixed-broadband subscriptions, and mobile broadband subscriptions (ITU 2017: 26).

The second indicator is the *infrastructure* component of GSMA's Mobile Connectivity Index (MCI). The *infrastructure* component is made up of a range of indicators addressing mobile network coverage, mobile network performance, spectrum, and other enabling infrastructures.[22]

3.1.4.2 Identification

Limited identification coverage prevents PSPs from accurately authenticating or verifying potential customers' identities. When merchants or consumers do not have requisite identification, PSPs are often unable to comply with Know Your Customer (KYC) requirements, and they may forgo serving segments without identification. Thus, identification constraints can affect both consumers' and merchants' ability to obtain the accounts that are necessary to engage in electronic payments. In assessing identification coverage as a barrier to EPA, it is important to investigate whether lack of identification is preventing merchants from obtaining accounts with acquirers, acceptance intermediaries, or EMIs and consumers from obtaining electronic payment instruments.

If data are available, EPA stakeholders could track the percent of MSMRs or MSMEs that have a business identification. As a supplement, the indicator, *percent of population unregistered*, from the World Bank's ID4D dataset, which measures the share of a country's population without an ID, is a sound measure of identification coverage for consumers and a good proxy for identification coverage among MSMRs. Some MSMRs likely use personal identification for business management purposes. The identification coverage indicator can be paired with indicators measuring financial access among merchants and consumers to gain a more comprehensive understanding of this barrier.

3.1.4.3 Credit Reporting Systems

Credit report systems are important for helping PSPs assess the credit and fraud risk of potential clients. Credit reporting system deficiencies can lessen PSPs' confidence in seeking new merchant customers. In assessing the credit reporting systems barrier, EPA stakeholders could examine whether the quality or coverage of credit reporting systems is preventing PSPs from obtaining new merchant and consumer customers.

If local data are available, it would be useful to track the percent of MSMRs or MSMEs that are covered by a credit reporting service provider (CRSP). Among CRSPs, commercial credit reporting companies are active in the MSME credit reporting space (World Bank 2014). Global data on credit reporting coverage of MSMEs are limited. Even at the local level, it can be challenging to obtain an accurate estimate of the percent of MSMEs covered by CRSPs, as MSMEs often avoid formally registering in many economies.

3.1.4.4 Access Points

Consumers' take-up of non-cash financial instruments is sensitive to access point coverage (CPMI and WBG 2016). Limited access points bolster cash-centric environments by reducing the probability that electronic payment methods are adopted. EPA stakeholders could assess whether access point coverage deters consumers from adopting electronic payment methods.

There are at least three indicators that are useful for assessing access points that are publicly available as part of the IMF's Financial Access Survey (FAS). Each is a direct measure of different types of access points in a country. These are the number of ATMs, branches of commercial banks, and mobile money agents per 100,000 adults.

It is important to emphasize that certain types of access points may have differing levels of importance for various economies. For example, in some countries either bank branches or agents are prevalent but not both. Therefore, the access points element needs to be judged within the context of local digital financial services ecosystems.

3.1.4.5 E-Commerce Readiness

E-commerce refers to buying and selling goods and services over computer networks (OECD 2011, UNCTAD 2015). Once the domain of large retailers, MSMRs are increasingly adopting e-commerce methods, either by setting up their own websites or by plugging into existing online marketplaces.[23] E-commerce payments often occur electronically, and purchases are often delivered physically by a parcel carrier, but neither of these are universal characteristics of e-commerce. In many developing economies, cash-on-delivery is a very popular e-commerce payment method. Additionally, many digital goods (e.g., books, music, videos) and services can be delivered online. Alternatively, buyers can pick up purchases at retailers or at other locations, such as a designated locker.

This Guide does not focus on comprehensively diagnosing the range of barriers to e-commerce readiness. Successful e-commerce ecosystems require a variety of important inputs, such as marketing and order fulfillment mechanisms, that are beyond the Guide's scope of focus on EPA. However, it is worth emphasizing that many of the EPA barriers discussed throughout the Guide, such as financial access, financial and ICT infrastructures, and cash cultures are highly relevant for e-commerce. Likewise, diagnosing barriers to electronic payments acceptance and usage, the core focus of this Guide, is critical to developing a successful e-commerce ecosystem.

E-commerce has been important during the COVID-19 pandemic, as the health crisis has reduced foot traffic at brick-and-mortar retailers. In recognition of this, the World Bank released a discussion note in 2020 (World Bank 2020a) entitled, "Embedding Digital Finance in e-Commerce Platforms during the COVID-19 Pandemic." EPA stakeholders looking to advance e-commerce readiness could consider the emerging good practices outlined in the note for a more in-depth analysis.

The Guide recommends that EPA stakeholders evaluate some basic issues and data related to merchants' ability to sell goods and accept payments online. First, to examine general e-commerce readiness in a given country, stakeholders can consult the United Nations Conference on Trade and Development (UNCTAD)'s B2C E-commerce Index, which "measures an economy's preparedness to support online shopping" (UNCTAD 2019, 1). The index is an average of four indicators: account ownership from the World Bank Global Findex database; individuals using the internet from ITU; the postal reliability index from the Universal Postal Union; and secure internet servers from Netcraft (UNCTAD 2019).[24]

Second, EPA stakeholders could evaluate whether merchants have access to international, regional, or local third-party online marketplaces. Access to such platforms can dramatically lower barriers to e-commerce entry for MSMRs. In addition to providing basic e-commerce infrastructure and access to a pool of potential buyers, third-party online marketplaces often offer other services and benefits, including: marketing, payment processing, order fulfillment, shipping, delivery, and customer service. However, MSMRs in developing economies face asymmetric access to these platforms. If local data are available, EPA stakeholders could evaluate MSMRs' access to third-party online marketplaces by tracking the number of merchants that are registered as sellers on these platforms.

A web-presence is a prerequisite for engaging in e-commerce. Therefore, if merchants cannot register as sellers on a third-party online marketplace, they typically must have their own e-commerce website. This can be accomplished by adding an online shopping functionality to an existing website or developing an online store from the ground up. Both of these options can typically be accomplished with the help of third-party software or developers. To gauge how many merchants are selling directly online, as a third indicator, EPA stakeholders could track the number of e-commerce websites in their economy, if such data are available.

Fourth, EPA stakeholders could evaluate e-commerce payment acceptance mechanisms. If data are available, it would be useful to track the share of e-commerce payments processed by online marketplaces, by third-party payments processors, and through e-commerce payment gateways, as well as the share of e-commerce payments made via cash-on-delivery. These data are particularly relevant for understanding patterns of EPA in the e-commerce context.[25]

Finally, it is important to evaluate how the state of information security affects e-commerce readiness. E-commerce transactions are often riskier than typical retail transactions. In some economies where the risk of cybercrime is high, issuers may even default to declining e-commerce transactions. In these cases, consumers must proactively authorize e-commerce transactions prior to carrying them out. EPA stakeholders can gauge how risky e-commerce transactions are by taking stock of the frequency of cybercrime incidents in a country per month. Relatedly, it would be helpful to assess whether cybercrime legislation is in place.

3.1.5 Education and Perceptions

The education and perceptions sub-category focuses on the financial capability and cash culture elements that create frictions for EPA.

3.1.5.1 Financial Capability

Low financial capability can impede EPA to the extent that MSMRs and consumers lack a framework for thoroughly evaluating the tradeoffs between cash and electronic payments. For MSMRs, EPA costs are visible and frequently immediate, while the costs of cash are often hidden. Limited financial capability can prevent merchants from thoroughly evaluating the incremental gains that could be achieved with EPA, such as increased revenue and efficiency gains (e.g., time saving, inventory management). Among individuals, limited understanding of the benefits of electronic payments or of how to use payment instruments can lead to neglect or incomplete usage of electronic instruments, such as using debit cards for cash-out purposes only. Additionally, a lack of commitment from policymakers to improve financial capability will contribute to the persistence of these deficiencies.

In assessing the financial capability barrier, EPA stakeholders could evaluate whether low financial capability among consumers and merchants is hindering their willingness to engage in electronic payments. The *percent of adults who are financially literate* from the S&P Global Financial Literacy Survey can help measure financial capability in a country, though the survey does not address all issues central to electronic payments. The S&P Global Financial Literacy Survey evaluates adults' financial literacy in four areas: risk diversification, numeracy, inflation, and interest compounding.[26] A respondent is defined as "financially literate" if they address three of the four topics correctly. The merchant and household interview guides contained in Annexes A and C, respectively, provide EPA stakeholders with topical guidance for evaluating the financial capability barrier in interview settings. On the merchant side, the interview guide suggests investigating merchants' preferred payment types, reasons for preferring certain payment types, reasons for not accepting payment types, and considerations of the indirect costs of cash, among other topics. On the household side, the interview guides recommend investigating awareness of electronic payment products and services, confidence in electronic payment instrument usage, evaluation of the tradeoffs between carrying cash and using electronic payments, and access to financial education resources. While these guides are provided as a guidance for focus groups or IDIs, similar questions can be adopted in household or merchant surveys for collecting quantitative data.

EPA stakeholders could further consider whether public and private actors are committed to enhancing financial capability. To evaluate this, stakeholders can construct a *financial capability commitment score*, which measures whether a financial capability strategy has been launched or is in development and whether a dedicated, national, multi-stakeholder structure exists to promote and coordinate financial education. Annex E (table E.4) proposes a methodology for the *financial capability commitment score*, based on questions in the World Bank's FICP survey.

3.1.5.2 Cash Culture

A cash-centric ecosystem can indirectly impede the usage and acceptance of electronic P2B payments. If cash is predominant for paying utilities, receiving wages, and other payments outside of the merchant realm, it is more likely to be used for P2B merchant payments. Beyond access and convenience issues addressed elsewhere in the Assessment Guide, markets and societies may be more inclined to cash use for a variety of cultural, religious, trust, and other institutional reasons.[27]

Two indicators from the World Bank's Global Findex database are useful for assessing the centrality of cash in a country. The first indicator is *paid utility bills using cash only (as a percent of those who paid utility bills)*. The second indicator is *received wages in cash only (as a percent of those receiving wages).* These indicators present measures of cash prevalence in two common payment settings, one with individuals as the payer and the other with individuals as the payee.

3.2 ECONOMICS OF EPA

The economics of EPA category highlights the factors that most directly affect the supply of and demand for EPA, by focusing on incremental gains from EPA, the costs and risks faced by MSMRs and providers, and the influence of consumer behavior. The category comprises three policy sub-categories: (1) acceptance benefits and costs, (2) provider costs and risks, and (3) consumer behavior. Table 12 presents the EPA assessment elements associated with each of the economics of EPA policy sub-categories.

The economics of EPA should be understood within the context of the two-sided market that characterizes electronic payments. Rochet and Tirole define such markets as those in which "one or several platforms enable interactions between end-users, and try to get the two (or multiple) sides 'on board' by appropriately charging each side" (Rochet and Tirole 2004: 2). In the present context, PSPs and payment system operators (PSOs) must work to bring consumers and merchants together in a network, and both sides gain from greater participation by the other. Indeed, merchants' demand for accepting electronic payments depends on consumers' demand for using electronic payments and vice versa (Rysman 2009; Bounie, Francois and Van Hove 2016; Visa 2021). Thus, the economics of EPA are complex. Pricing, in particular, involves a multidimensional set of considerations and must strike the right balance of incentives between issuance and acceptance PSPs in order to create value for consumers and merchants and support a competitive marketplace.

TABLE 7. Economics of EPA assessment elements

Policy sub-category	Assessment element
Acceptance benefits and costs	Revenue gains from EPA adoption Relative costs of EPA and cash acceptance Tax liability
Provider costs and risks	Customer acquisition and service costs Subsidization Customer loss, fraud, and cybersecurity Incentives and innovation
Consumer behavior	Digital usage Ticket value

3.2.1 Acceptance Benefits and Costs

Evaluating electronic payment acceptance benefits and costs is an important aspect of an EPA assessment. This sub-category involves assessing: (1) revenue gains from EPA adoption, (2) the relative costs of EPA and cash acceptance, and (3) tax liabilities. Sections 3.1.1-3.1.3 discuss these elements' relevance for EPA and assessment approaches. Section 3.1.4 summarizes the assessment approaches. Publicly available data are limited for assessing acceptance benefits and costs. As discussed throughout these sections, a merchant survey is likely necessary to develop relevant assessment metrics. Annex A recommends approaches for merchant-centric interviews. If surveys are representative, the results can be extrapolated to the larger economy or for segments of merchants.

3.2.1.1 Revenue Gains from EPA Adoption

Revenue gains are a potentially significant benefit of EPA adoption for merchants (Adhikary et al. 2021; WBG and WEF 2016; Visa 2021). They come from a variety of potential sources. First, by accepting electronic payments, merchants can gain new customers who primarily or exclusively use electronic payments. Additionally, though not required for e-commerce in all economies, EPA significantly facilitates e-commerce. If merchants choose to participate in e-commerce, they can bring online shoppers into their customer base. Revenue gains can also derive from more frequent purchases by customers or larger ticket sizes. Further, PSPs often bundle value-added services, such as revenue generating services, client relationship management solutions, or credit, with EPA products and services. These value-added services can enable merchants to expand their business, attract new customers, and enhance the loyalty of existing customers.

Estimating revenue gains from EPA adoption at the merchant-level could be accomplished through two general methods: (1) a discontinuity-based approach or (2) a comparative approach. With good data, the former is more reliable, but it is likely more difficult to implement. Therefore, the comparative approach will often be a more practical alternative. These methods are discussed further below. Both would likely require merchant surveys.

- ***Discontinuity-based approach:*** This involves comparing merchants' revenue before and after adopting EPA.[28] If revenue history is available, it could be recorded before adoption and after adoption. Otherwise, a survey could ask merchants to estimate the effects of EPA adoption from the various revenue sources discussed above. The dynamic component to this approach could be difficult to implement in a survey context. Further, since merchants in a given economy have likely adopted EPA at different times, the approach would require appropriately normalizing data.
- ***Comparative approach:*** The comparative approach to estimating revenue gains involves measuring the difference in revenue between merchants who have adopted EPA and those who have not but are otherwise similar. If a survey captures revenue data, EPA status, and a range of business demographics, such as size, location, and retailer segment, it is fairly straightforward to implement the comparative approach through statistical methods by evaluating the impact of EPA on revenue, while controlling for appropriate factors.

3.2.1.2 Relative Costs of EPA and Cash Acceptance

Assessing the relative costs of EPA and cash acceptance allows EPA stakeholders to simultaneously evaluate some key elements that could be holding merchants back from

BOX 3

SUSTAINING REVENUE DURING COVID-19 THROUGH EPA

Electronic payments have been important for supporting merchant sales during the COVID-19 pandemic. Merchants who have adopted EPA are more likely to sustain revenue during the crisis than those who have not for a few key reasons. First, for brick-and-mortar retailers, maintaining an EPA channel gives consumers who would prefer to reduce contact in the payment process a reliable way to make purchases. Second, though not necessary for e-commerce, electronic payments facilitate e-commerce. Merchants who have lost revenue due to reduced foot traffic are better able to recoup some of these losses through the combination of EPA and e-commerce. Finally, cash access points may be operating at a reduced capacity. Therefore, merchants who rely more heavily on electronic payments for various payment flows (ie, P2B, B2P, B2B) likely face fewer business model disruptions. Likewise, EPA-equipped merchants are better able to serve customers who have reduced access to cash.

adopting EPA, while also measuring the incremental savings from EPA over cash. The methodology outlined below is adapted from the World Bank's Guide for Measuring Retail Payment Costs ("Cost methodology") (WBG 2016b). Specifically, it draws in the most relevant elements from the Cost methodology for merchants as payees. As with assessing revenue gains, measuring relative costs likely requires deploying a merchant survey.

Importantly, the Cost methodology facilitates studying the cost of various payment methods for consumers and for merchants as payers. The incremental savings of electronic payments over cash payments are likely significant for consumers and merchants in these alternative contexts. Though the Assessment Guide focuses on relative costs from the perspective of merchants as payees, EPA stakeholders may also find it useful to leverage the Cost methodology to study relative costs in other contexts.

In assessing the relative costs of EPA and cash acceptance, time costs, logistic costs, infrastructure costs, damage costs, service costs, and cost of funds for both EPA and cash acceptance need to be measured as well as differences between them. Table 8 outlines these cost categories, their constituent elements, and how the Cost methodology proposes measuring them.[29]

TABLE 8. Retail payment costs and calculation approaches

Cost category	Cost element	Cost calculation approach	Definitions
Time costs	Waiting time	Wage per minute in currency unit + Time in minutes + number of transactions per annum	The amount of time merchants' customers typically stand in line to make a purchase. Waiting time will generally be higher with cash acceptance. However, some electronic payment methods, especially customer-initiated methods that require entering account numbers and payment totals, can extend waiting time.
	Transaction time	Wage per minute in currency unit + Time in minutes + number of transactions per annum	The amount of direct interaction time between a merchant and a payer or between the merchant's EPA mechanism and the payer. Transaction time will generally be higher with cash acceptance. However, as with waiting time, some electronic payment methods, such as customer-initiated methods that require entering account numbers and payment totals, are comparable to or take more time than cash transactions.
	Reconciliation time	Wage per minute in currency unit + Time in minutes + number of business days	The amount of time a merchant spends reconciling payments with receipts. Reconciliation time will generally be higher with cash acceptance.
	Operations time	Wage per minute in currency unit + Time in minutes + number of business days	Typical elements include the amount of time preparing and closing cash registers, preparing cash revenue for deposit, installing and maintaining EPA tools, and handling exceptions (e.g., chargebacks, counterfeit notes). Operations time will generally be higher with cash acceptance.
	Labor cost should be used as a proxy for the opportunity cost of time. For practical purposes, the national minimum wage could serve as a labor cost proxy.		
Logistic costs	Travel costs	(Distance in linear dimension unit + mileage allowance) + 2 (directions) + number of transactions per annum	The distance traveled to deposit cash revenues. Travel costs will generally be higher with cash acceptance. After evaluating merchants' typical travel patterns, assessors can use official mileage allowances as a good proxy for the monetary value of such costs.
	Communication costs	Costs in currency unit (per transaction) + number of transactions per annum	Primarily data transmission costs. These include the cost of internet connectivity, mobile data, or fixed telephone lines. Communication costs will generally be higher with EPA. After taking stock of which communication costs merchants incur, assessors could use country averages to quantify these costs.
Infrastructure costs	Deprecation costs	Costs in currency unit (per period) + number of periods per annum	Includes depreciation expenses of acceptance hardware, such as POS terminals, and cash registers. The relative intensity of depreciation costs between EPA and cash acceptance will be context dependent. For example, while depreciation associated with a traditional POS terminal is non-trivial, depreciation could be small or negligible for other EPA mechanisms (e.g., a QR code print out).
	Maintenance costs	Costs in currency unit (per period) + number of periods per annum	Cost of maintaining acceptance tools, such as cash registers and EPA mechanisms, and ensuring they function on an ongoing basis. Maintenance costs are likely to be higher for EPA, as electronic payments are more technology-intensive.

continued

TABLE 8, *continued*

Cost category	Cost element	Cost calculation approach	Definitions
Damage costs	Error costs	Costs in currency unit (for the last month) + 12 (months)	Losses due to discrepancies between cash or merchant account balances and sales receipts. Error costs are typically higher with cash acceptance. However, certain electronic payment mechanisms, especially customer-initiated methods that require entering account numbers and payment totals, are also quite error prone.
	Theft costs	Costs in currency unit (for the last month) + 12 (months)	Losses due to the extraction of merchant funds without consent. Theft can be from internal or external sources. Theft costs are generally more associated with cash acceptance. They can be mitigated by insurance.
Damage costs, *continued*	Fraud costs	Costs in currency unit (per period) + number of periods per annum	Losses of various forms due to the misrepresentation of identities, transaction details, payment methods, and other factors. The relative intensity of fraud costs is context dependent. They can be mitigated by insurance or fraud protection services.
	Insurance costs	Costs in currency unit (per period) + number of periods per annum	Premiums paid against losses associated with various acceptance methods. Insurance costs are typically higher for merchants who maintain a significant amount of cash on hand or are more prone to fraudulent transactions.
Service costs	Periodic fees	Costs in currency unit (per period) + number of periods per annum	Periodic fees: Fees for services and infrastructure components. Periodic fees include deposit fees for cash revenues. They also include the cost of acquiring technology necessary for EPA. For card payments, this often involves the cost of a POS terminal. The physical infrastructure required for accepting mobile money, QR code payments, or cards via mPOS is fairly minimal, but merchants typically need a device to confirm payment receipt on their end, such as a mobile phone, smartphone, computer, or a POS terminal that is integrated with these alternative payment methods.
	Per transaction fees	Costs in currency unit + number of transactions per annum ***or*** Percentage + average value (per transaction) + number of transactions per annum	Fees that occur any time a merchant accepts payment. Per transaction fees are primarily the transaction fees merchants pay to PSPs. One type of fee is the merchant discount rate (MDR) that merchants pay to bank and nonbank acquirers. The MDR is usually a fixed fee and/or a percentage of the value of an electronic payment transaction. Similar to MDR, MSMRs that have an account with an acceptance intermediary, such as a payment facilitator, instead of an acquirer, pay merchant fees. It is important to note that fees often differ by processing type (e.g., card-present, manual key-in, card on file, etc.), payment amount, merchant type, payment instrument, and scheme/switch. They are typically higher for transactions that present greater risk of fraud and loss. For example, card-present transactions are generally lower risk than card-not-present transactions.
Cost of funds	Holding costs	Amount of average cash and e-money holding + average interest rate for sight deposits per annum	Interest forgone from not holding funds in an interest-bearing account. Holding costs are typically more associated with cash acceptance.
	Float costs	Time between debiting payment initiation by payer and the credit date of the amount + average interest rate for sight deposits per annum	Interest forgone during the settlement period, the time between when the payment is made and when the funds are available to the merchant. Float costs are associated with EPA.

Source: WBG (2016b)

The cost of EPA should ideally be broken down by relevant payment instrument and/or acceptance channel, as the cost of EPA will vary based on these dimensions. Relevant payment instruments and acceptance channels are identified in section 3.1.1.1. Breaking EPA down into its constituent elements can be complicated, yet there are legitimate differences in payment approaches that affect cost. For example, a card payment can often be made at a POS terminal by swiping a magnetic stripe, dipping an EMV chip, and, increasingly, tapping through NFC technology. Among these, time costs are likely to be lowest for NFC-based payments. There are similar tradeoffs in variations on other payment methods—for example, with static and dynamic QR code payments. Moreover, some subtleties may be imperceptible to merchants at the point of interaction. For example, the source of funds for a QR code payment could be a bank account, a payment card, or e-money.

3.2.1.3 Tax Liability

The potential tax liability merchants face from accepting electronic payments is a complicated EPA barrier and is closely related to the size of informal economy. Cash's limited traceability allows merchants in many jurisdictions to forgo reporting earnings to revenue authorities. The tax liability that could result from migrating to a traceable payment form deters many merchants from engaging in EPA.

The most direct way to examine the role of the tax liability in governing EPA decisions is to interview merchants about this issue. The merchant interview guide (see: Annex A) suggests that Guide users explore the deterrent effect of the tax liability on EPA decisions and how tax rates and compliance burdens have changed among those merchants who have adopted EPA.

There are two publicly available indicators that are useful for measuring the tax liability barrier. The first indicator can help EPA stakeholders gain a handle on the scale of the issue. As discussed above, the tax liability barrier is closely linked to the level of informality in a given economy. Indeed, one of the primary motivations for remaining informal is to evade taxes. To measure informality, the Guide proposes to use the multiple indicators multiple causes (MIMIC) measure of the informal economy. This indirect method of estimating the size of the informal economy was developed by Schneider, Buehn, and Montenegro (2010) and updated by Elgin et al. (2021) through 2018. It uses six cause variables and three indicators to estimate informality.[30] The second indicator addresses a state's capacity to address tax evasion. The indicator is, *ability to limit tax evasion*, from the Institutional Profile Database (IPD), which measures perceptions regarding a government's ability to limit tax evasion.[31] As with all IPD indicators, the *ability to limit tax evasion* is based on experts' assessment of the relevant topic on a scale from 0-4. In this case, 0 and 4 represent weak and strong perceived ability of public administrators to limit tax evasion, respectively. As such, the indicator is subjective and is an indirect measure of the severity of tax evasion in a country. Figure 20 depicts the mean level of this indicator at the global, income group, and regional levels. The indicator covers 64 percent of global economies.

Relatedly, low levels of transparency and/or high levels of corruption can perpetuate tax evasion and harm MSMRs' confidence in the tax system. As a complement to the IPD tax evasion indicator, EPA stakeholders may find it useful to gauge corruption levels. Useful indicators in this regard include the *percent of firms identifying corruption as a major constraint* from the World Bank Enterprise Surveys and the *control of corruption* indicator from the Worldwide Governance Indicators.

3.2.2 Provider Costs and Risks

The provider costs and risks sub-category addresses select economic impediments that PSPs face in providing electronic payment products and services to merchants and consumers, focusing on: (1) customer acquisition and service costs, (2) hardware and fee subsidization, (3) customer fraud, loss, and cybersecurity, and (4) incentives and innovation.

Direct measures of provider costs and risks are limited. This is an area where the qualitative approach can be very useful. The provider interview guide (see: Annex B) recommends a variety of topical areas EPA stakeholders can incorporate in interviews with providers to better assess the costs and risk they face. In addition to addressing the specific costs discussed above, the interview guide recommends evaluating a range of other factors that could hinder providers' ability to obtain and serve merchant and consumer clients, such as merchant engagement, physical, financial, and ICT infrastructures, data sharing platforms, electronic payments market scale, legal and regulatory ambiguity, and KYC compliance, among other issues. Annex B also addresses costs and risks faced by payment system operators (PSOs).

3.2.2.1 Customer Acquisition and Service Costs

Bank acquirers, nonbank acquirers, acceptance intermediaries, and EMIs face customer acquisition and customer service costs that can pose barriers to obtaining MSMR clients. Select costs include sales and marketing, setup, onboarding, and servicing. These costs are generally higher for remote and hard to reach clients. Though acceptance-focused providers can leverage certain technologies for reach, human interaction for guidance, support, and coaching is important for small merchant acquisition. Card issuers and EMIs face similar customer acquisition and service costs in obtaining consumer customers. To evaluate the extent of these costs, EPA stakeholders could work with local PSPs to track the level and trend in sales and marketing, setup, onboarding, and servicing costs.

3.2.2.2 Subsidization

PSPs may subsidize acceptance technology and/or fees for a period of time in select markets in order to reach scale. For example, PSPs may subsidize traditional POS terminals, mPOS, and other mobile acceptance technologies for merchants. On the fee side, PSPs may subsidize MDR, transaction fees, or interchange fees for limited periods of time. It is important to emphasize that while fee subsidization may be a short-term solution, it is not viable in the long run. EPA stakeholders could track whether and to what extent PSPs subsidize acceptance technology and fees.

3.2.2.3 Customer Loss, Fraud, and Cybersecurity

PSPs on the acceptance side of the market often bear the cost of loss and fraud among their MSMR clients. A common barrier to merchant acquisition revolves around merchants' ability to remain compliant with the Payment Card Industry Data Security Standard (PCI-DSS) and protect the integrity of transactions. Further, issuers' perceptions of merchants' risk profiles can deter them from approving transactions for MSMRs, especially in the case of e-commerce. Similarly, an increasingly important cost for PSPs on both sides of the market revolves around cybersecurity. Providers bear the ongoing costs of protecting electronic payment systems against security breaches, including financial misappropriation, system disruption, and data corruption and appropriation. It is recommended to track the risk of loss and fraud through local indicators, such as fraud to sales ratios, chargebacks as a percent of sales, and the MSMR failure rate, if such data are available. Likewise, stakeholders could assess the average level of resources providers allocate to ensuring cyber resilience.

3.2.2.4 Incentives and Innovation

PSPs on the acceptance side of the market often offer value-added services, such as credit, productivity solutions, client relationship management solutions, and revenue generating services to merchants to incentivize EPA uptake. Further, PSPs on both the acceptance and issuance sides of the markets often have loyalty rewards programs to incentivize usage. PSPs must also continually invest in new products and services to reach unserved segments and improve customer service among existing customers. EPA stakeholders could work with PSPs to track the level and trend in the cost of value-added services and product innovations.

3.2.3 Consumer Behavior

The consumer behavior sub-category focuses consumers' propensity to use electronic instruments for P2B merchant payments. As discussed in the introduction to section 3, the market for electronic payments is two-sided. Therefore, consumers' propensity to use electronic instruments for P2B payments will affect merchants' demand for EPA (Rochet and Tirole 2004; Bounie, Francois and Van Hove 2016; Visa 2021).

Consumer behavior can be assessed through an indicator derived from World Bank Global Findex data, *made digital payment as a percent of account holders*. The denominator for this indicator differs from the indicator employed for the market scale barrier, which is the percent of the adult population (see: 2.2.1). The denominator adjustment allows for a more direct measure of digital payments usage. Additionally, the merchant (see: Annex A) and household (see: Annex C) interview guides recommend interview approaches for assessing this element. The merchant interview guide suggests asking merchants about daily customer traffic, customers' preferred methods of payment, and whether merchants consider customers' transaction behavior in evaluating EPA options. The household interview guide recommends asking consumers about their preferred methods of payment, reasons for preferring certain payment methods, types of payment instruments accepted at their local retail establishments, and their experience with merchants' payment preferences, among other topics. Table 16 summarizes an approach for assessing consumer behavior.

It is important to highlight that the COVID-19 pandemic has likely affected consumers' payment preferences in many markets, due to the potential health benefits of reducing contact in the payment process, increasing reliance on e-commerce, and reduced operations of cash access points. EPA stakeholders could consider generating new data through interview approaches to assess how COVID-19 has affected consumer behavior in their local markets.

3.3 LEGAL, REGULATORY AND OVERSIGHT

The legal, regulatory and oversight category focuses on the aspects of a country's laws, regulations, and oversight framework that have implications for EPA. The category comprises three policy sub-categories: (1) legal and regulatory (general), (2) legal and regulatory (financial), and (3) payment system oversight. Table 17 presents the EPA assessment elements associated with each of the legal, regulatory, and oversight policy sub-categories.

3.3.1 Legal and Regulatory: General

This sub-category focuses on the general characteristics of a country's legal and regulatory environment that can influence merchants' and providers' willingness to participate in the electronic payments market. The sub-category comprises two elements: (1) soundness and predictability and (2) contractual relations and enforceability.

3.3.1.1 Soundness and Predictability

Soundness and predictability refer to the clarity and comprehensiveness of the legal and regulatory framework businesses face. A burdensome, erratic, outdated or otherwise deficient legal and regulatory framework can deter MSMRs and providers from engaging in electronic payments. The sample interview guides recommend topics EPA stakeholders can explore in interview settings for the qualitative assessment, particularly with providers, to better understand the effect of the legal and regulatory environment on EPA.

EPA stakeholders can also use the publicly available *Regulatory Quality* indicator from the Worldwide Governance Indicators to measure soundness and predictability. The *Regulatory Quality* indicator "captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development" (Kaufmann, Kraay and Mastruzzi 2010: 4).

3.3.1.2 Contractual Relations and Enforceability

In the course of providing payment services, PSPs strike business contracts with customers and a range of other entities involved in the electronic payments chain. As such, a weak contract enforcement system can deter PSPs from providing electronic payment services.

TABLE 9. Legal, regulatory and oversight assessment elements

Policy sub-category	Assessment element
Legal and regulatory (general)	Soundness and predictability Contractual relations and enforceability
Legal and regulatory (financial)	Neutrality and proportionality Financial consumer protection System integrity
Payment system oversight	Central bank legal powers Organizational arrangements Payment system oversight objectives Scope of payment system oversight Cooperation with relevant authorities Cooperation with other stakeholders Risk-based approach to oversight

The publicly available indicator, a country's percentile rank for *Rule of Law* from the Worldwide Governance Indicators can be used to measure the strength of a country's contractual relations and enforceability framework. The *Rule of Law* indicator "captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence" (Kaufmann, Kraay and Mastruzzi 2010: 4).

3.3.2 Legal and Regulatory: Financial

This sub-category focuses on the elements of a country's financial sector legal and regulatory framework that have implications for electronic payments. The sub-category comprises three elements: (1) neutrality and proportionality, (2) financial consumer protection, and (3) system integrity. To help measure various legal and regulatory elements addressed in this sub-category, the Guide proposes assessment metrics that are based on questions posed in the World Bank GPSS and Global FICP Survey. The construction of these assessment metrics is detailed in Annex E, table E.2.

3.3.2.1 Neutrality and Proportionality

Neutrality refers to whether a country's legal and regulatory policy framework confers an advantage on or is discriminatory toward certain electronic payment providers. Regulation by activity, rather than by institution type, is an emerging global regulatory good practice. Proportionality refers to the degree of risk-based calibration in legal and regulatory standards. Proportionality is a cross-cutting issue, having relevance for system integrity and payment system oversight as well. Taken together, the degree of neutrality and proportionality in a country's legal and regulatory framework contributes to the level of competition and innovation in the market for electronic payments. In general, authorities should strive for a legal and regulatory framework that is "fair and balanced for all stakeholders, addresses risks and promotes innovation" (CPMI and WBG 2016: 24).

In assessing neutrality and proportionality, EPA stakeholders could evaluate whether the legal and regulatory framework for retail payments is risk-based, provider- and instrument-neutral, and forward-looking. The Guide proposes a supplemental neutrality and proportionality indicator based on some specific criteria that are measured in the World Bank GPSS. The proposed indicator covers whether: legal provisions cover fair and competitive practices; legal provisions cover electronic money; a variety of nonbank entities are permitted to provide payment services on the acceptance and issuance sides of the market; and agent-based models are permitted. This indicator should supplement but not replace the more general assessment of legal and regulatory neutrality and proportionality.

Further, it is important to evaluate whether legal and regulatory gaps exist with respect to acquirers', acceptance intermediaries', and EMIs' ability to responsibly cross-sell other products and services, especially credit, to merchant clients. Credit is a major EPA incentive for small merchants who face capital constraints. While the provision of credit is typically addressed through prudential regulatory frameworks for bank acquirers, the situation is generally more complex for nonbank acquirers, acceptance intermediaries, and non-bank EMIs. EPA stakeholders could assess whether a level playing field exists for the provision of credit among acceptance PSPs. Often, this necessitates a transparent process for nonbank PSPs to obtain a credit license directly or indirectly through a subsidiary entity that focuses on credit extension.

3.3.2.2 Financial Consumer Protection

Electronic payment instruments' suitability for and uptake among consumers is affected by the existence of good financial consumer protection (FCP) practices. Protecting consumers from abusive financial practices has become a central goal of financial public policymakers worldwide. The Global Financial Crisis revealed that the quality of a jurisdiction's consumer protection practices has direct implications for financial stability and economic health.

The Guide focuses on the FCP provisions most relevant for the electronic payments market. In assessing FCP, EPA stakeholders could evaluate: FCP legal provisions; transparency on terms, conditions, fees, and customer rights; liability for unauthorized transactions; customer support, recourse, and dispute resolution; the privacy of customer transactional and/or personal data; and protection against third-party claims (the proposed indicator for FCP is in Annex E, table E.2). For more comprehensive guidance on appropriate FCP measures, EPA stakeholders could consult the World Bank's Good Practices for Financial Consumer Protection (World Bank 2017), particularly the annex addressing FCP with respect to retail payments.[32]

3.2.2.3 System Integrity

Preserving payment system integrity involves a careful balance between a sound Anti-Money Laundering (AML) and combatting the financing of terrorism (CFT) regime and financial inclusion imperatives. On the one hand, excessive documentation requirements can prevent MSMRs and consumers from accessing the financial products and services necessary for participating in the electronic payments market. Providers consistently indicate that strenuous Customer Due Diligence (CDD) requirements make acquiring merchant clients difficult if merchants are unregistered or do not have requisite identification. On the other hand, a deficient CDD framework can deter acquirers, acceptance intermediaries, and issuers from providing electronic payment products and services for fear of contravening AML/CFT standards. The Financial Action Task Force (FATF) has made clear that preserving system integrity and supporting financial inclusion are reinforcing, rather than conflicting, goals (FATF 2007).

The best policy enabler in this regard is a comprehensive but proportional AML/CFT regime that reflects a risk-based approach (RBA) to merchant due diligence (MDD). In assessing this element, EPA stakeholders could evaluate whether an RBA for MDD exists and whether simplified MDD measures are in place for small and/or low risk merchants. The *EPA Innovations Report* outlines principles for developing an RBA to MDD and a model for simplified MDD.

Two more general indicators can help EPA stakeholders evaluate system integrity. The first indicator captures whether a country is compliant or largely compliant with FATF Recommendations 1 and 10.[33] Recommendation 1 deals with assessing risks and applying an RBA, while Recommendation 10 deals with CDD (FATF 2012).[34] The second indicator deals with simplified due diligence (SDD) for consumers, which captures whether simplifications or exceptions exist for the documentation requirements associated with certain types of low-risk applicants or accounts (Annex E, table E.2).

3.3.3 Payment System Oversight

This sub-category summarizes payment system oversight elements that are crucial for the safety and soundness of the payment system and for EPA. The Guide recommends evaluating six specific payment system oversight features and the overarching approach to oversight: (1) central bank legal powers, (2) organizational arrangements, (3) objectives of payment system oversight, (4) scope of payment system oversight, (5) cooperation with relevant authorities, and (6) cooperation with other stakeholders.

To help measure these payment system oversight elements, the Guide proposes a series of metrics that are based on questions posed in the GPSS. The construction of these assessment metrics is detailed in Annex E, table E.3. Even if GPSS data are not available, stakeholders can leverage this system to evaluate payment system oversight.

Finally, EPA stakeholders are recommended to evaluate a seventh overarching aspect of payment system oversight: the approach to oversight should flow directly from a neutral and proportional legal and regulatory framework.[35] This means whether oversight reflects a proportional, risk-based, provider-neutral, instrument-neutral, and forward-looking approach.

3.3.3.1 Central Bank Legal Powers

Central bank legal powers refer to the presence and clarity of a central bank's authority to conduct payment system oversight. In assessing central bank legal powers, EPA stakeholders could evaluate whether the central bank has formal powers to perform payment system oversight and whether empowerment is explicit, granting it powers to operate, regulate, and oversee payment systems (see: Annex E, table E.3).

3.3.3.2 Organizational Arrangements

Organizational arrangements concern the nature and independence of the unit within the central bank that conducts payment system oversight. In assessing organizational arrangements, EPA stakeholders could evaluate the regularity of payment system oversight, whether there is a specific unit or department within the central bank responsible for oversight, and whether the oversight function is segregated from payment system operational tasks, either through organizational means or via independent reporting lines (see: Annex E, table E.3).

3.3.3.3 Objectives of Payment System Oversight

Objectives of payment system oversight refers to the clarity, transparency, and content of a central bank's payment system oversight objectives. In assessing this element, EPA stakeholders could consider whether the central bank has made its payment system oversight objectives public through an official regulatory or policy document. Additionally, the objectives should generally address the safety and efficiency of the payment system, market competitiveness, and consumer protection (see: Annex E, table E.3).

3.3.3.4 Scope of Payment System Oversight

Scope of payment system oversight concerns the systems, services, instruments, and entities covered by a country's oversight function. In assessing this element, EPA stakeholders could evaluate whether payment system oversight is performed over retail payment systems, payment services, and payment instruments. Additionally, EPA stakeholders could evaluate whether payment system oversight is performed over all payment systems and services operated by commercial banks and nonbanks. Stakeholders could further ensure that payment system oversight is performed over non-bank PSPs, including FinTech companies, which have played an important role in many markets. Finally, stakeholders could examine whether relevant competent authorities (e.g., central bank, banking supervision authority, ministry of finance, etc.) are legally empowered to regulate and supervise on an ongoing basis entities operating payment card networks or switches and entities operating mobile money platforms (see: Annex E, table E.3).

3.3.3.5 Cooperation with Relevant Authorities

In evaluating cooperation with relevant authorities, EPA stakeholders could assess the presence, formality, and regularity of cooperation the central bank pursues with relevant authorities in conducting its payment system oversight responsibilities (see: Annex E, table E.3).

3.3.3.6 Cooperation with Other Stakeholders

In assessing cooperation with other stakeholders, EPA stakeholders could consider whether a National Payments Council exists. In the absence of such a council, stakeholders could assess the formality and regularity of consultation the central bank pursues with other stakeholders (see: Annex E, table E.3).

4. Concluding Remarks

Developing EPA is a multidimensional process in which each stakeholder has a role to play. Making informed policy and program decisions to structure a roadmap for EPA reforms can help put efforts in perspective and allocate resources efficiently. This Guide aims to provide inputs to the readers on how to conduct an EPA assessment to derive key insights for selecting, designing, and implementing high-impact EPA reforms, to understand key strengths and weaknesses, and to develop a baseline against which to measure future EPA enhancement reforms and programs.

During the preparation of this report, the world was struck by the COVID-19 pandemic. The pandemic underlined the importance of electronic payments, as social-distancing measures and lockdowns were implemented. It became necessary to shop and pay remotely. Many countries took measures to ensure the smooth flow of goods and services and promoted electronic payments via temporary (or in some instances, permanent) measures. In addition, the private sector also responded to ensure development of EPA. Along with the developments during the pandemic, the World Bank team also piloted the EPA assessment approaches outlined in this Guide in several countries. This report, therefore, includes the findings and outcomes of the pandemic period as well as the *EPA Pilots.*

The methodology detailed in this Guide includes two components: (1) qualitative analysis and (2) quantitative analysis. The Guide recommends a combination of these two approaches for the assessment whenever possible. The outcome of the process outlined in this Guide is envisioned as an assessment report, which would point out to the strengths and weaknesses in a country's EPA landscape.

Based on the assessment results, the users are envisioned to develop a roadmap using the other components of the *EPA Package*: Innovations, Intermediaries and Incentives. As described in the *EPA Innovations Report,* innovations in EPA come at all stages of the EPA process using diversified tools, technologies, and business models. One of the major success factors for these innovations is how they add value to all stakeholders participating in the EPA value chain. The *EPA Innovations Report*, therefore, provides guidance to the users on how to use innovations to overcome some of the barriers identified via the assessment. At the same time, the *EPA Intermediaries Report* describes the important role intermediaries play in expanding EPA while underlining the potential risks and providing regulatory approaches. Upon identifying the gaps via the assessment methodologies described in this Guide, the users can consult the *EPA Intermediaries Report* for further action. Lastly, the *EPA Innovations Report* provides case studies and statistical analysis of several EPA-related interventions around the world and distills policy recommendations. Again, depending on the assessment results, the users can refer to the *EPA Incentives Report* for incentive policies and programs that can further EPA.

ANNEX A

Merchant Interview Guide

The merchant interview guide presents suggested topics for a merchant-centric interview that can be adapted to a specific local context or instrument, such as a survey or focus group discussions. The suggested topics are organized into nine categories: (1) merchant demographics; (2) merchant financial access; (3) payments; (4) preferences and perceptions; (5) relative costs of EPA and cash; (6) e-commerce; (7) other relevant infrastructures; (8) incentives; and (9) COVID-19 impact.

Merchant demographics *Suggested topics:* • Size of business (employee-based or turnover-based thresholds) • Annual revenue and profit • Retailer segment • Geography (region, urban or rural) • Formal or informal • Female manager • Number of years in business • Customer demographics (income level, age) • Number of branches of retailer chain
Merchant financial access *Suggested topics:* • Account access (with: bank acquirer, non-bank acquirer, acceptance intermediary, e-money issuer, bank for a business checking account) • Acceptance channel access (POS terminal, mPOS, mobile-to-mobile, QR code, Internet) [based on relevant acceptance channels in country] • Access to a line of credit from a PSP

continued

Payments

Suggested topics:

- Which electronic payment instruments does merchant accept (payment card, e-money, EFT)
- Percent of sales (volume / value) made by cash, cheque, and each relevant electronic payment method
- Paying suppliers: frequency, payment instrument used (% of payments)
- Paying employees: frequency, payment instrument used (% of payments)

Preferences and perceptions

Suggested topics:

- Preferred payment acceptance methods
- Reasons for payment acceptance method preferences
- Reasons for certain payment methods not being accepted
- Role of tax burden in governing EPA decisions
- Awareness of payment products and services offered by financial institutions
- Perception of customers' preferred payment methods
- Perception of suppliers' preferred payment methods
- Perception of employees' preferred payment methods

Relative costs of EPA and cash acceptance

Notes:

- Should be broken down for cash and relevant electronic payment methods
- To be estimated by merchants and/or recorded via field observations
- See section 3.1.2 for calculation details

Suggested topics:

- Time costs: waiting time, transaction time, reconciliation time, operations time
- Logistic costs: travel, communication
- Infrastructure costs: depreciation, maintenance
- Damage costs: error, theft, fraud, insurance
- Service costs: periodic fees, per transaction fees
- Cost of funds: holding costs, float costs

E-commerce

Suggested topics:

- E-commerce presence
- Access to third-party online marketplace (international, regional, local)
- Online shopping website (dedicated, add-on to existing website)
- E-commerce payment processing (online marketplace, third-party gateway or payment processor, merchant account-linked services, cash-on-delivery)

Other relevant infrastructures

Suggested topics:

- Access to a business identification
- Registered with credit reporting service provider
- Access to Internet, mobile phone, fixed line phone

Incentives

Suggested topics:

- Have payment service providers or public authorities provided any incentives for accepting electronic payments? (e.g., hardware subsidies, fee reductions, tax breaks, credit, value-added services, loyalty rewards, other incentives)
- [If yes] Impact of incentives on EPA
- [If no] Merchants' perceptions of whether programs would incentivize EPA

COVID-19 impact

Suggested topics:

- Impact of COVID-19 pandemic on merchant payment acceptance preferences
- Impact of COVID-19 pandemic on merchants' customers' payment preferences

Below are selected questions used in focus group discussions and merchant interviews during the EPA Pilots.

1. Merchant Background

PURPOSE: to get basic data on the merchant to help with merchant classification

- Type of merchant
  - Grocery; Non-grocery (specify) or Mixed
- How long in business?
- Name of city / village
- Classification of location
  - Urban; Peri-urban; Rural
- Type of location
  - Shopping mall; Main street of city / village; Side street / Outskirts
- Estimated size of the shop
- Does the shop have a cash register?

2. Merchant Demographics

PURPOSE: to obtain high level data on merchant's business operations

- What is the interviewee's job position?
  - Owner; Manager of branch; Other
- Is the owner and/or manager of the store a female?
- Do you have a bank account?
- What kind of phone do you have? (Smartphone, feature phone)
- Do you use any banking app on your phone?
- How many employees do you have in this store location?
- Are there any other branches of the store in city, province or country?
  - What is the average number of employees in the other branches of your store?
- What is the typical income profile of your customers?
  - Low income, middle income, high income, all income groups
- How many customers do you have on a typical day?
- What percentage of your customers would you say are repeat visitors (i.e., customers coming back to buy daily or on a weekly basis)?
- What is the average value of goods / merchandises that a typical customer buys?

3. Merchant Education and Perceptions

PURPOSE: Review understanding and perception of merchants for different types of financial services.

- Review different payment products (transaction account—bank or non-bank, mobile wallet, payment cards) with the merchant and gauge the understanding and perceptions of the merchant for each product including how comfortable they are using it, and whether they make use of it in their personal life.
- Review different payment options (bank transfer, cheque, payment cards, P2P transfers via mobile wallets, QR code payments using voucher or mobile wallet). Like the previous question, probe if they have heard about this option before, how comfortable they would feel to use this option, and whether they actually make use of it in their personal life.
- Review different payment instruments (a bank account, payment card, mobile account, etc.) for buying supplies and services for the store. Ask if the merchant uses these instruments for business purposes. Ask if the instrument is in the name of the business or the name of the owner. Ask for the exact use: paying the supplier, paying the employees, paying utilities, receiving or sending money, accepting payments, saving.
- If merchant answered "No" above, ask for the reasons:
  - Don't know enough about it
  - Business is too small
  - Account is too expensive
  - Bank / Financial service access point is too far away
  - Don't need one
  - Don't trust financial institutions
  - Lack necessary documentation (including being informal)
  - Other (Please specify):

4. Merchant acceptance for person to business (P2B) payments

PURPOSE: Obtain information of types of payments that the merchant accepts including the costs associated with them and barriers to their usage.

- Review the list of payment options with the merchant (cash, cheque, payment card, bank or mobile transfer, QR code, NFC, purchase on credit, etc.). For each of these payment options, inquire if the merchant offers it to their customers. Also inquire for each of the options if there is any particular reason why they offer or don't offer it, and what has been their experience with the respective payment option if they offer it.

- Are there any payment methods the merchant prefers? If so, why?
  - Cost; Ease / Simplicity; Transparency; Immediacy; Trust
- Do customers ever walk away if their preferred payment type not available (e.g., card or wallet).
- Has the COVID-19 pandemic changed your preferred payment method?
- How do your customers usually pay for their purchases? Cash; cheque; payment card; mobile wallet; bank transfer; other electronic.
- What are the triggers and barriers to adopting electronic payments for a merchant like you?
- How many merchants around you have adopted electronic payments methods?
- Are you aware of the benefits of electronic payments to you?
- How ready are your customers in making electronic payments?

Additional questions for CASH ONLY, Informal and micro and small merchants

- Have you accepted electronic payments before (cards, wallets, etc.)? If not, why?
- What are all the challenges associated with using cash for you/your customers?
- Have you been approached by a bank or other service provider for accepting electronic payments? Or have you tried to approach them to explore acceptance of electronic payments?
- Do you feel customers will adopt electronic payments eventually? What needs to happen for customers to adopt cashless transactions? What could be the barriers for customers to switch from cash?
- Which payment option do you think would be better for customers? What do they find easy?
- If a new electronic payment solution comes out in the market, would you be willing to use that? Why?
- What type of incentives you think are needed to start accepting electronic payments?
  - Tax breaks; Subsidized POS terminals from providers; Reduction or waiver of merchant fees; Value added services like data on consumers, etc.; Other Incentives
- If you were provided the following value add services, then would it be interesting for you to accept electronic payments?
  - Linking the merchant to his suppliers through digital payments,
  - Providing credit (example working capital loan) to him by the suppliers or financial institutions
  - Providing facilities on purchased goods
  - Immediate settlement of cash on his account
  - A system to manage his accounting and inventory
  - No need to register or not linked to taxes

Additional questions for Merchants accepting cash and cashless payments

- What do you think the payment options will be in the next 5 years?
- What types of cashless payments do you accept now?
  - Cards; Wallets; NFC; QR code; other
- If they accept cards, the type of POS device: Traditional POS; mPOS (mobile POS); other (e.g., Tap to pay, dongle, etc.)
- Does the POS terminal support contactless payments? If yes, do customers use it?
- For QR Code, is it posted on a cardboard (static QR) or via the merchant's mobile phone or other device to generate/scan the code (dynamic QR)?
- What are all the challenges/disadvantages associated with using cash/debit card/credit card/QR codes/digital wallets for you/ your business?
- Who is the provider of your merchant account (for wallet and/or cards)?
  - Bank; Mobile wallet provider; Merchant aggregator; other
- How did you get this account? Did you approach them, or they approached you? Was the signup process easy? Is the account management satisfactory?
- Were you provided with educational materials by the providers—about benefits of electronic payment acceptance, rates, and other value-added services?
- Are you aware of any incentives offered by national or local authorities or financial institutions to use cards, QR codes, digital wallets or other types of non-cash payments? What types of incentives are you aware of?
- How do you usually learn about the different options for making payments? Mark all that applies:
  - Friends; Family; TV; Radio; Other merchants; Business association; Financial service provider

- Which of the just mentioned sources of information do you trust the most to learn about a new financial service?

5. Business to Person Payments (employee salaries, etc.)

- How do you pay your employees?
  - Cash; Cheque; Debit card; Payment card; Bank transfer/direct deposit; Mobile money; other
- Can you please explain why you usually use this option?
- Did you already try any other option for paying salaries? If yes, did you have a positive experience?
- Would you like to learn more about alternative options for paying salaries (e.g., prepaid cards, bank transfer, mobile wallets, other)?

6. Business to Business Payments (supplier payments, etc.)

- How many suppliers do you have approximately?
- Are any of your suppliers an international chain / or from another country?
- In a normal month, how many times do you pay for supplies?
- What would you say is the average value of payment you make to your suppliers?
- How do you usually pay your suppliers?
  - Cash; cheque; payment card; bank transfer (in person); online banking/mobile transfer; other electronic.
- Who determines the payment option, the supplier or you?
- How do you finance this business? Have you taken any loan for this business?
- Do your suppliers provide any short-term credit for your purchases?
- Do you use the same payment method for making your utility payments?
- If no, why do you use a different payment method for your utilities? Which method do you use?

ANNEX B

Providers Interview Guide

The providers interview guide presents suggested topics for a provider-centric interview that can be adapted to a specific local context or instrument, such as key informant interviews or a supply-side survey. Relevant interviewees include, but are not limited to, acceptance-side payment service providers (PSPs), issuance-side PSPs, and payment system operators (PSOs). Acceptance-side PSPs generally include bank acquirers, nonbank acquirers, and acceptance intermediaries. Acceptance intermediaries include payment facilitators, which are also known as payment or merchant aggregators, third-party payment processors, payment gateways, and bill aggregators.

Issuance-side PSPs generally include card issuers and e-money issuers (EMIs). EMIs can also play a role on the acceptance side for e-money acceptance services. Issuers can be bank or nonbank entities. PSOs are entities that operate payment infrastructures and/or networks. The most relevant PSOs in this context are domestic and international card switch operators, mobile money interoperability platforms, and payment card networks.

Seeking responses from a diversity of types of providers, as well as their outsourcing partners, will enrich the analysis. EPA stakeholders would try to obtain responses from banks, nonbanks, and other specialized providers, ideally in proportions that approximate the country's payment market structure. The interview guide covers four areas: (1) customers and transactions, (2) costs and risks, (4) ecosystem, and (3) legal, regulatory, and oversight issues.

Customers and transactions

Suggested topics:

- Number of merchants serviced by the acceptance PSP in the country (potentially broken down by retailer segment and/or region)
- Number of merchant customers of the PSP who have a line of credit with the PSP
- Number of payment instruments issued by the issuance PSP in the country (cards, e-money, EFT-based)
- Number of active payment instruments issued by the issuance PSP
- Transactions (volume / value) processed by the PSP for each available payment instrument

continued

Costs and risks *Suggested topics:* • Customer acquisition and service costs: sales and marketing, setup, onboarding, servicing • Acceptance technology subsidization (POS, mPOS, mobile technology) • Temporary fee subsidization (MDR, IF, transaction) • Market intervention (e.g., regulation of MDR, IF, payment network pricing) • Risk of customer loss and fraud (e.g., fraud to sales ratio, chargebacks as a percent of sales) • Merchant survival rate • Cybersecurity costs • Cost of value-added services and incentives (e.g., credit, productivity solutions, revenue generating solutions, client relationship management, loyalty rewards) • Investments in new products and services
Ecosystem *Suggested topics:* • Electronic payments market scale • Competition landscape • Merchant and consumer payment preferences • Infrastructure: financial, ICT, physical • Merchant engagement • Financial capability
Legal, regulatory, and oversight *Suggested topics:* • Perception of legal and regulatory framework soundness, predictability, neutrality, and proportionality • Experience with merchant due diligence and customer identification requirements • Experience with country's payment system oversight framework

Below are selected questions used in interviews with the providers during the EPA Pilots.

1. Issuing Banks (for payment cards and digital wallets)

- Provide an overview of uptake of digital financial services in your country and the role played by the bank.
- Who are your primary clients for banking services offered by the bank?
  - Consumers; Businesses; Government; Other
- What types of digital financial services are provided to your retail banking clients (specifically in reference to the consumer segments)?
  - Current/savings accounts
  - Payment cards (credit and debit cards)
  - Digital wallets (linked to bank account)
  - E-money products (prepaid cards and prefunded digital/mobile wallets)
  - Internet/mobile banking
  - Remittance transfers
  - Other
- Does the bank pursue an active consumer segmentation strategy? Please explain.
- Does the bank have a special focus on unbanked or underserved segments? If yes, what types of products and services are provided by the bank?
  - Is credit transfer, instant payments (using bank account, cards, wallets) available to banked customers?
  - Does your bank use financial incentives or promotions to improve usage of cards, wallets and other products? Describe how effective such measures are.
  - What is the process for customer onboarding? How easy or difficult is it to onboard unbanked/ underserved segments in your country?
- What are the barriers to adoption of electronic payments faced by your customers (bank account, cards and wallets)? Elaborate on the following
  - Electronic payments market scale
  - Adverse competition landscape (e.g., market concentration)
  - Customer credit risk

- Customer fraud risk
- Legal and regulatory ambiguity
- Legal and regulatory inconsistency
- Cash preference among target customers
- KYC and customer identification

• What needs to be done on the policy/regulatory front to improve the existing environment for uptake of digital financial services and displacement of cash-based activities?

2. Acquiring Banks (for payment cards and digital wallets)

• Provide an overview of electronic payments acceptance (EPA) landscape in the country. What merchant segments are well covered and where is EPA lacking?

• What are the commonly observed challenges and opportunities in growing EPA among the underserved merchant segments (including but not limited to micro and small merchants)?

• How big is your merchant acquiring business and what is your market share? Do you acquire merchants for cards, wallets or both?

• Does your bank specialize in the acquiring business? Or is this done as part of the retail/merchant banking portfolio?

• Is merchant acquiring considered profitable? Are the acquiring margins sufficient to allow reinvestment in merchant acceptance growth?

• Provide an overview of the economics of the acquiring business. What are the typical merchant discount rates (MDRs) and other fees that are charged for card and wallet transactions for merchants?

• Do you consider micro and small merchant segment as profitable? What is the bank's view on improving EPA within this segment?

• Does the bank use merchant aggregators or payment facilitators to target the micro and small merchants, e-commerce merchants?

• How does the bank carry out end to end merchant onboarding activities including merchant segmentation (if applicable), merchant account opening, marketing and merchant education?

• What is the average cost for merchant acquisition including sales and marketing, setup, POS/acceptance device, onboarding, and servicing?

• What are the barriers to merchant acquisition?
  - Merchant engagement
  - Physical infrastructure
  - Financial infrastructure
  - ICT infrastructure
  - Data sharing platforms
  - Merchant financial access
  - Regulation of merchant discount rates / service fees
  - Merchant financial capability

• Do the existing AML/CFT regulations act as impediment or enabler for merchant onboarding?

• What is the activation rate for merchants? How many merchants in your portfolio considered dormant or inactive accounts?

• To promote onboarding activities and improve activation rates what incentives are provided to the merchants? Does the bank monitor the impact of these incentives on a regular basis?

• Does the bank provide short term credit to merchants (especially micro and small merchants) to promote acceptance? If yes, how many merchants avail such credit arrangements?

• If the bank provides QR code acceptance for digital wallets, then please explain if it uses its proprietary QR code standard for acceptance or an interoperable standard enforced by the regulator or provided by a payment scheme.

• What are the top three recommendations for improving the policy/regulatory landscape to expand EPA in your country?

3. International Payment Schemes

• What are the challenges and opportunities in growing EPA in the country? Provide an overview from the payment scheme's perspective.

• In terms of the enabling environment (policies and regulations) what is working well and what is not working well to promote growth of EPA in the country. Highlight the main barriers.

• Using the data monitored by the scheme, how many merchant acceptance points are there in the country? How many of these are active/dormant acceptance points?

• What are the top 5 merchant category codes (MCCs)?

• What is the typical merchant profile—e.g., large volume, multi-lane, etc.

• What is the landscape for micro and small merchants—what are their challenges in accepting card payments.

• Provide an overview of challenges and opportunities with the e-commerce landscape—spend, merchant types, platforms, challenges and opportunities.

- What is the payment scheme doing in the market in terms of introducing innovative EPA solutions in the market (e.g., NFC, QR Code, others)? Are there any barriers to introducing these solutions in the market?
- Card issuing landscape
  - How many issuers participate in your network and who are the main ones?
  - What are the dynamics for card issuance—what drives profitability for issuers?
  - What types of products are commonly used in the market—credit, debit, prepaid
  - Provide data on card activation rates and the reasons for low activation rates (if applicable).
  - What are the major spend categories for consumers? What proportion of personal consumption expenditure is on cards (if data is available)?
  - Why do (or don't) consumers like to use cards.
  - What kind of incentives (issuer given or other types) work for consumers to drive usage of cards? Does the payment scheme also have promotions/incentives to grow usage?
- Card acquiring landscape
  - Provide an overview of acquiring activity in the country—pros and cons from the scheme's perspective.
  - Is acquiring a profitable business for member banks? How are revenues shared between banks and other stakeholders in the acquiring value chain?
  - How well developed is the e-commerce acquiring landscape? Who are the key players? What are the main barriers to its growth?
  - Can acquiring be considered a specialized activity and is it likely to become more specialized as a result of new market entrants?
  - What role do intermediaries play in the market (payment facilitators, gateways etc.)? What is the regulatory landscape for such providers in country?
- What are your views on merchant onboarding process by the acquiring banks? Are the existing due diligence procedures an obstacle to onboarding small merchants? Is there simplified due diligence?
- What incentives are provided (to merchants with a focus on micro and small merchants) by the payment network and its acquiring member banks to grow incentives?
- What can be done differently in the market to enhance adoption and usage of card payments?
- What are the top three recommendations for improving the policy/regulatory landscape to expand EPA in your country?

4. Domestic switch (if applicable)

- Provide an overview of the role played in the retail payment ecosystem by the switch. What types of services are provided to the participating banks?
- Provide an overview of how the switch establishes connectivity between different schemes and the banks. Does it act like a payment gateway and provide additional services?
- Does the switch play a role in acquiring activities or is it just on the issuance side? Provide details.
- What is the general view of the retail payments market in terms of opportunities and challenges?
- What is your view of the enabling policy environment in the country and if the switch can provide feedback on what works and what doesn't in relation to your business activities?
- What are the top three recommendations for improving the policy/regulatory landscape to expand EPA in your country?

ANNEX C

Household Interview Guide

The household interview guide presents suggested topics for a household-centric interview that can be adapted to a specific local context or instrument, such as focus group discussions or a survey. The suggested topics are organized into four categories: (1) financial access; (2) payment behavior; (3) education and perceptions; (4) Incentives, and (5) financial consumer protection.

Financial access *Suggested topics:* • Access to electronic payment instruments (payment cards, e-money, EFT-based) • [If no access] Primary reasons for not having electronic payment method • Experience with electronic payments instruments
Payment behavior *Suggested topics:* • Frequency of making payments at retail establishments • Average ticket size • Typical payment methods and instruments used • Preferred payment methods and instruments • Reasons for payment method and instrument preferences • Reasons for not using certain types of payment methods and instruments • Types of payment methods and instruments accepted at local retail establishments • Experience with merchants' payment preferences • Has the COVID-19 pandemic changed payment preferences and/or behavior?

continued

Education and perceptions
Suggested topics: • Confidence in understanding how to use electronic payment instruments / methods • Trust in electronic payment instruments / methods • Evaluation of tradeoffs between carrying cash and relying on electronic payments • Access to financial education resources
Financial consumer protection
Suggested topics: • [If access] Perceptions of information adequacy regarding how electronic payment instruments work • [If access] Clarity of information on terms and conditions • [If access] Clarity on complaints management process and points of contact • [If access] Confidence in protection against unfair or deceptive acts by financial institutions • [If no access] Role of trust in financial institutions • [If no access] Awareness of FCP protections or recourse mechanisms

Below are selected questions used in focus groups and interviews during the EPA Pilots.

1. Household/consumer background

- Obtain household/consumer information on age, gender, location, number of people in the household, level of education, and profession.
- Before starting to talk about how they make payments for goods and services, inquire who in the household oversees managing the finances, and who carries out financial transactions.
  - Who in the household is in charge of making the purchases?
  - Does someone in the family have a transaction account?
- Do you have a transaction account? If yes, in your own name or jointly with your spouse/other?
- Do you have a debit card?
- Do you have a mobile phone? A smartphone?
- Have you already made a payment using your mobile phone? By using internet or payment/wallet/bank app?
- What type of retail shops are in your direct neighborhood? And how often do you go there?
- Are there other merchants you regularly go to that are not in your direct vicinity? If so, where are they, and what type of stores are these?
- How many of you are also using the internet to make purchases? If so, do you use your phone or your computer to do this?

2. Financial access and infrastructure

- Inquire about financial services used by respondents. Are there any financial service providers (including money transfer and bill payment agents) in the direct neighborhood or in a location that you are aware of?
- How often do you visit the bank? For what purposes? Do you feel comfortable going to bank for any services?

Transaction account:

- How did you find the process of signing up for an account? Was it easy/difficult?
- Did you face any problems? If yes, what were they?
- What do you generally use it for?
- Do you pay bill /taxes through account? Why?
- Do you feel that you understand the costs for making a payment with your account, and where to find this information if you need it?
- And how easy is it to obtain cash from your account? Do you usually go to the bank branch itself, use an ATM or an agent?
- Did you receive information on the cost of opening and maintaining the account and cost of different types of transactions at account opening stage?

Savings account:

- Do you have a savings account at a financial institution? And what do you generally use it for?
- What has your overall experience been with the savings account? When did you open it? For what purpose?

Debit cards:

- Do you have a debit card? When did you get it?
- What do you use your card for?
- Did any of you ever experience a problem with a transaction on an account, or with a card? If so, was your problem resolved? Are you familiar with your rights as a consumer of financial services?

To those without an account:

- Would you be interested in having one? And if so, what would you use it for?
- Would you also like to have a card or/and a wallet for the account? And if so, what would you mostly use it for?
- For those that do not want to have an account, can you briefly explain why?

Mobile/digital Wallets:

- Have you already heard about this type of financial service?
- [If has a wallet] When did you open it? For what purpose? Was it easy/difficult to sign up for an account?
- What do you generally use your wallet for?

3. Payment Behavior

- Which among cash, card, cheque, mobile wallet is:
  - Less time consuming for payment
  - Economical for me as a consumer
  - Has rewards and benefits for me as a consumer
  - Convenient
- What could be the barriers for customers to switch from cash?
  - Delay in confirmation of the payments
  - Availability of the internet/ network
  - Understanding of the usability
  - Unavailability of the mobile wallet or banking wallet
  - Lack of need
- Review the payment options available at local retailers. In the shops in your direct neighborhood, what payments options other than cash do you usually have?
  - Are there any differences in the payment methods accepted in grocery stores versus non-grocery stores?
  - In their opinion, are there differences in available payment options by size of merchant?
  - What payment method do you typically use at your neighborhood merchants, and why?
  - If the customer is the one to decide, what are the factors that make a person use that payment method?
  - Have any of the merchants encouraged a participant to use electronic payment for their purchase, or do merchants generally encourage the use of cash?
- Payments at other retailers (i.e., outside your neighborhood):
  - Do you use a different payment method at other retailers such as clothing stores, petrol stations, fast food restaurants, or pharmacies, or always use the same method?
  - Were you ever encouraged by a merchant to use a card or mobile payment? Did you consider this helpful?
  - Did you ever have the situation that a merchant promoted the use of a card or mobile payment?
  - Only if people indicated they do online-shopping: Some of you indicated that they are occasionally doing purchases over the Internet. How do you pay for those purchases?
- Has the COVID-19 pandemic affected the way you make your payments? If so, what has changed?
- Finally, inquire about how they pay your utilities (electricity, water, postpaid phone, etc.) or internet / phone top ups (for younger generation). Do they pay this in cash, or do you use another payment method? And where do they usually pay their bills?

4. Incentives and disincentives

- If the merchant would offer you a discount for using your card or mobile wallet to pay, would this make you consider changing the way you make your payments? Why / why not?
- If you were given this discount or other cash/financial incentive, would you feel comfortable to actually use an electronic transaction at the merchant?
  - Would you prefer to first have some guidance on how this works?
  - If people express that they would not be comfortable, what information would they like to have?
  - What would be the best way to provide this guidance to you?
  - What would be the best way to provide educational information to them? Radio, TV, from the merchant / family member or friend? Would a flyer be helpful for them, or would they prefer a direct training? Should the financial institution be the one to reach out to them?

- Are you aware of any restrictions from merchants on the use of cash? If so, what types are you aware of?
- Are you aware of any incentives offered by national or local authorities or financial institutions to use cards or mobile wallets? For example, tax breaks, purchase discounts or promotions, lotteries rewarding the use of electronic payment methods, cashback, etc. What types of incentives are you aware of?
- Are there any recommendations/learnings that you would like to share to make the experience better?

ANNEX D

Local data collection summary

This annex summarizes the indicators that the Guide proposes for local collection. These are the "Type 3" indicators discussed in the report. In some cases, the indicators could be aggregated from existing sources maintained by national authorities. In many cases, though, generating these data will likely require survey approaches. Tables D.1-D.3 capture the local indicators by EPA policy category.

TABLE D.1. Retail payments ecosystem local data collection summary

Policy sub-category	Assessment element	Indicators
Financial access	Electronic payment instruments and access channels	Electronic payment instruments available in the country for making P2B payments: • Payment cards (0-1) • Electronic money (0-1) • Electronic funds transfer (0-1) EPA channels available to MSMRs in the country: • POS (0-1) • mPOS (0-1) • Mobile-to-mobile (0-1) • QR Code (0-1) • Internet (0-1)
	Merchant financial access	Account access (% of MSMRs) with: • Bank acquirers • Non-bank acquirers • Acceptance intermediaries • E-money issuers • Banks (for business checking) Acceptance channel access (% of MSMRs): • POS terminal • mPOS • Mobile-to-mobile • QR code • Internet Percent of B2B and B2P payments made electronically by MSMRs Percent of MSMRs with a line of credit from a PSP
	Consumer financial access (*as needed to supplement Findex data*)	Payment instrument access (% age 15+): • Payment card • E-money account • Financial institution account
	Financial inclusion commitment	National financial inclusion or retail payments strategy has been developed and launched (0-1)
Market development	Market scale	Share of retail payments made electronically by retail payment type: P2P, P2B, P2G, B2P, B2B, B2G, G2P, G2B, G2G Share of P2B payments made electronically by expenditure category: travel & entertainment, large-ticket purchases, everyday spending, small ticket purchases, bill payments
	Market structure	Share of payments (value / volume) processed by top 3: • Bank acquirers • Non-bank acquirers • Facilitators / aggregators • Card issuers • E-money issuers Distribution of MSMRs by: • Size (employee- or turnover-based threshold) • Retailer segment • Geography (region, urban vs. rural) • Formal vs. informal • Number of branches of parent or chain

continued

Policy sub-category	Assessment element	Indicators
Payment infrastructures	Interoperability and standardization	Market schemes exist for payment instruments available in the country (0-1) Regulations enforce interoperability standards for the acceptance channels available in the country (0-1) Interoperability arrangements reliability: • Downtime (%) • Transaction failures (%) Entities operating interoperability arrangements periodically introduce innovations and promotions to advance electronic payments (0-1)
	Fast payment systems	Fast payment system (FPS) indicator (0-6): • An FPS is operational or is in development • FPS is available for P2B merchant payments • FPS supports the use of aliases • QR code standards are in place that enable the use of QR codes for fast payments • An FPS oversight framework is in place • FPS oversight criteria cover legal basis, governance, risk management, financial consumer protection, including dispute resolution and complaints handling, and efficiency and effectiveness
Other financial and ICT infrastructures	Identification	Percent of MSMRs that have a business
	Credit reporting systems	Percent of MSMRs covered by credit reporting service provider
	E-commerce readiness	Number of e-commerce aggregators or gateways operating in the country Percent of merchants who are registered as sellers on third-party online marketplaces Number of e-commerce websites Share of e-commerce payments processed by: • Online marketplaces • Third-party payment processors • Payment gateways • Cash-on-delivery Frequency of cyber-crime incidents

TABLE D.2. Economics of EPA local data collection summary

Policy sub-category	Assessment element	Indicators
Acceptance benefits and costs	Revenue gains from EPA	Discontinuity-based metric Comparative metric *(see section 3.1.1 for description)*
	Relative costs of EPA and cash acceptance *(see section 3.1.2 for calculation details)* *(note: EPA costs should be broken down by most relevant payment methods)*	Time costs • Waiting time • Transaction time • Reconciliation time • Operations time Logistic costs • Travel • Communication Infrastructure costs • Depreciation • Maintenance Damage costs • Error • Theft • Fraud • Insurance Service costs • Periodic fees • Per transaction fees Cost of funds • Holding costs • Float costs
Provider costs and risks	Customer acquisition and service costs	• Average cost by PSP type of: • Sales and marketing • Setup • Onboarding • Servicing
	Financial inclusion commitment	Acceptance technology subsidization (POS, mPOS, mobile technology) Temporary fee subsidization (MDR, IF, transaction fees)
	Subsidization	Fraud to sales ratio Chargebacks (% of sales) MSMR failure rate Cybersecurity costs
	Customer loss, fraud, and cybersecurity	Average cost by PSP type of: • Credit • Other value-added services • Loyalty rewards • Investment in new products and services
	Incentives and innovation	Consumers' preferred payment methods Reasons for payment preferences Experiences with various payment methods Merchants' perceptions of customers' preferred payment methods
Consumer behavior	Payment preferences	Consumers' preferred payment methods Reasons for payment preferences Experiences with various payment methods Merchants' perceptions of customers' preferred payment methods

TABLE D.3. Legal, regulatory, and oversight local data collection summary

Policy sub-category	Assessment element	Indicators
Legal and regulatory (financial)	Neutrality and proportionality	The legal and regulatory framework for retail payments is risk-based, provider- and instrument-neutral, and forward-looking (0-1) Transparent process exists for non-bank PSPs to obtain a credit license directly or indirectly through a subsidiary entity (0-1)
	System integrity	Risk-based approach to merchant due diligence is permitted (0-1)
Payment system oversight	Risk-based approach to oversight	Payment system oversight reflects a risk-based, proportional, provider-neutral, instrument-neutral, and forward-looking approach (0-1)

ANNEX E

Qualitative policy indicator construction methods

Annex E proposes indicators that EPA stakeholders can build to assess a variety of qualitative elements related to payment infrastructure and legal, regulatory, and oversight issues. Many of the criteria are derived from questions posed in the World Bank Global Payment System Survey (GPSS) and World Bank Financial Inclusion and Consumer Protection (FICP) survey using existing indicator construction methodologies.[36] Even if data from these surveys are not available, the criteria can be used as a guide to construct the proposed indicators.

It is worth emphasizing that a higher point total for a given indicator will not translate to a higher weight for that indicator in the index methods presented in Annex G because indicators are normalized to a common unit between 0-1. However, EPA stakeholders may elect to give more or less weight to certain elements that make up an indicator, depending on the relative importance of that indicator to local circumstances.

TABLE E.1. Payment infrastructures indicator construction

Category	Criteria	Points
1.1) Card switch (0-5)	A) There is at least one payment card switch operating in the country	1
	B) Wide range of transactions supported by payment card switch	1
	C) Settlement of net positions takes place through RTGS or central bank money if there is no RTGS	1
	D) Diversified set of participants are allowed to access (directly/indirectly) payment card switch (Other banks, supervised NBFIs, MNOs)	1
	E) Card fraud prevention: 1) industry-led standards; 2) common efforts by the banking industry and merchants' associations; 3) legal requirements applicable to payment service providers/user	If > 1 and #3 is included (1)
1.2) POS Interoperability (0-1)	POS terminals have good or full interoperability	1
1.3) Mobile money Interoperability (0-1)	Mobile money has good or full interoperability	1
1.4) QR Code Interoperability (0-1)	Regulations enforce the EMV or another Interoperability standard for QR Code	1
1.5) Real time gross settlement system (0-2)	A) The percentage of total volume of large-value payments channeled through the RTGS is more than 80 percent	1
	B) Access to the RTGS is granted on the basis of the fulfillment of a set of objective criteria to ensure a safe and sound operation of the system (e.g. capital requirements, technological capacity, internal risk controls, appropriate management, etc.)	1
1.6) Automated clearing houses (0-5)	A) ACH for credit transfers and/or direct debits is available	1
	B) Net balances are calculated and settled multiple times a day	1
	C) Final settlement takes place through RTGS or central bank money if there is no RTGS	1
	D) ACH has a settlement risk management framework	1
	E) Diversified set of actors have direct/indirect access to ACH services (Other banks, supervised NBFIs, MNOs, MTOs)	If 1 type (0.5) If > 1 (1)

TABLE E.2. **Legal and regulatory indicator construction**

Category	Criteria	Points
2.1) Neutrality & Proportionality (0-6)[37]	A) Legal provisions cover fair and competitive practices in the provision of payment services	1
	B) Legal provisions cover electronic money	1
	C) Regulation allows non-bank direct provision of payment services and holding customer funds	1
	D) Regulation allows agent-based models	1
	E) Variety of non-bank PSPs are permitted to provide acceptance services: Payment Card Acquirers AND Aggregators/Facilitators AND Payment Card Processors AND Gateways AND Bill Payment Aggregators	1
	F) Variety of non-bank PSPs are permitted to provide issuance services: MNOs AND E-Money Issuers AND Payment Card Issuing/Personalization	1
2.2) Financial consumer protection (0-6)	(A) Legal provisions cover consumer protection for retail payment services	1
	(B) Terms, conditions, fees, and customer rights have to be disclosed prior to the customer entering into a contract / performing a transaction	1
	(C) Customers are protected against unauthorized transactions in the form of (limited) customer liability	1
	(D) Recourse and dispute resolution mechanisms are clearly articulated and easily available to the public	1
	(E) Admissible disclosure of transactional and/or personal data is clearly articulated and easily available to the public	1
	(F) Customers are protected against third-party claims on customers' funds	1
2.3) Simplified due diligence	Simplifications or exceptions to the documentation requirements for certain types of applicants (e.g. low income) or deposit account products (e.g. small-value, low-risk transactions or basic accounts) exist: (A) Commercial banks; (B) Other banks; (C) Financial cooperatives; (D) Other deposit taking institutions	If A, 1 If A and B or C or D, 2

TABLE E.3. Payment system oversight indicator construction[38]

Category	Criteria	Points
3.1) Central bank legal powers (0-3)	(A) Central bank has formal powers to perform payment oversight	If A, 1
	(B) Empowerment is general	If B, 2
	(C) Empowerment is explicit, granting it powers to operate, regulate, and oversee payment systems	If C, 3
3.2) Organizational arrangements (0-4)	A) The Central Bank's payment system oversight function has been established and this is performed regularly and on an on-going basis	2
	B) There is a specific unit or department within the Central Bank responsible for payment system oversight	1
	C) The payment system oversight function is segregated from payment system operational tasks either through organizational means or via independent reporting lines	1
3.3) Objectives of payment system oversight (0-5)	A) The Central Bank has set down its objectives in carrying out the payment system oversight function in a regulatory or policy document	1
	B) The regulatory or policy is publicly available	1
	C) Objectives address the safety and efficiency of the payment system	1
	D) Objectives address market competitiveness	1
	E) Objectives address consumer protection	1
3.4) Scope of payment system oversight (0-7)	A) Payment system oversight is performed over retail payment systems	1
	B) Payment system oversight is performed over payment services	1
	C) Payment system oversight is performed over payment instruments	1
	D) Payment system oversight is performed over commercial bank operated payment systems and services	1
	E) Payment system oversight is performed over all relevant payment systems and services in the country even if the operator is a non-bank (e.g. card network operators, money transfer operators)	1
	F) Competent authorities are legally empowered to regulate and supervise on an ongoing basis entities operating payment card networks or switches	1
	G) Competent authorities are legally empowered to regulate and supervise on an ongoing basis entities operating mobile money platforms	1
3.5) Cooperation with other relevant authorities (0-2)	A) Cooperation with other relevant authorities occurs mostly in an informal/ad-hoc basis	If A and C, 0.5 If A and D, 1 If B and C, 1.5 If B and D, 2
	B) Cooperation with other relevant authorities is ensured through a formal mechanism, such as a memorandum of understanding (MOU) or is required by law	
	C) Cooperation involves mostly regular meetings and exchange of opinions and views	
	D) Besides regular meetings and exchange of opinions and views, cooperation also involves regular information exchanges, prior notice of regulatory action, joint inspection	
3.6) Cooperation with other stakeholders (0-2)	A) A formal National Payments Council is in place	If A or B, 2. If C, 1. Otherwise, 0.
	B) Although not formalized, the Central Bank holds regular meetings with stakeholders to discuss strategic issues for the payment system	
	C) The Central Bank consults stakeholders only at the operational level (i.e. on particular operational issues). These consultations are regular and sometimes include the creation of an ad-hoc task force.	

TABLE E.4. Financial capability commitment indicator construction

Question / indicator	Points
Has a national financial capability/literacy/education strategy (NFCS/NFLS/NFES) already been launched, or is one in development?	1
Does a dedicated, national, multi-stakeholder structure exist to promote and coordinate provision of financial education?	1

ANNEX F

Recommended quantitative measures and quantitative assessment summary

Annex F summarizes the quantitative assessment indicators proposed in section 3.

RETAIL PAYMENTS ECOSYSTEM

TABLE F.1 Financial access assessment

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Electronic Payment Instruments and Access Channels	Which electronic payment instruments are available in the country for making P2B merchant payments?	Payment cards (0-1) Electronic money (0-1) Electronic funds transfer (0-1)	Local data
	Which EPA channels are available for MSMRs in the country?	POS (0-1) mPOS (0-1) Mobile-to-mobile (0-1) QR Code (0-1) Internet (0-1)	Local data
Merchant Financial Access	Do MSMRs have access to the accounts that are necessary for accepting electronic payments?	Account access (% of MSMRs) with: Bank acquirers Non-bank acquirers Acceptance intermediaries E-money issuers Banks (business checking)	Local data /Merchant survey
		Acceptance channel access (% of MSMRs): POS terminal mPOS Mobile-to-mobile QR Code Internet	Local data /Merchant survey
		Acceptance channels per 100,000 adults: POS terminals Merchants accepting QR code payments	WBG GPSS

continued

TABLE F.1, *continued*

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Merchant Financial Access, *continued*	How do MSMRs pay their suppliers, employees, and for other operating expenses?	Percent of B2B and B2P payments made electronically by MSMRs	Local data /Merchant survey
	Do MSMRs have access to external financing?	Percent of MSMRs with a line of credit from a PSP Financially unconstrained micro-enterprises (% of formal micro-enterprises)	Local data / Merchant survey IFC MSME finance gap database
Consumer Financial Access	Do consumers have access to electronic payment instruments available in the country?	Instrument access (% age 15+): Debit card Credit card Mobile money account Financial institution account Electronic money account	WBG Global Findex Database Local data
Financial Inclusion Commitment	Has a national financial inclusion and/or retail payments strategy been developed and launched?	National financial inclusion or retail payments strategy (0-1)	Local data

TABLE F.2 Market development assessment

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Market scale	What is the scale of the electronic payments market in terms of the propensity to make such payments and the depth of the market? To what extent have electronic payments penetrated everyday spending and small ticket purchases?	Share of retail payments made electronically (by payment flow, see Table 6)	Local data
		Share of P2B payments made electronically by expenditure category	Local data
		Made digital payment in the past year (% age 15+)	WBG Findex Database
		Electronic payments per capita	WBG GPSS
Market structure	What is the level of competition and/or diversity of players involved in the electronic payments market?	Share of payments (value/volume) process by top 3: Bank acquirers Nonbank acquirers Facilitators/Aggregators Card issuers E-money issuers	Local data
	What are the characteristics of the MSMR market in terms of the distribution by size, segment, geography, formality, and other factors?	Distribution of MSMRs by: Size (employee- or turnover-based thresholds) Retailer segment Urban vs. rural Formal vs. informal No. of branches of parent	Local data

TABLE F.3 Payment infrastructures assessment

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Interoperability and Standardization	Is there at least one payment card switch operating in the country? Are a wide range of transactions supported by the payment card switch? Do a diversified set of participants have direct or indirect access to the payment card switch? Are card fraud prevention standards in place? Does settlement of net positions take place through RTGS or central bank money if there is no RTGS?	Card switch (0-5)	See: Annex E table E.1, 1.1
	Do market schemes exist for the payment instruments available in the country?	Market schemes (0-1)	Local data
	Do regulations enforce interoperability standards for the acceptance channelsavailable in the country?	Acceptance channel interoperability (0-1)	Local data
	Do POS terminals have good or full interoperability?	POS interoperability (0-1)	See: Annex E, table E.1, 1.2
	Does mobile money have good or full interoperability?	Mobile money interoperability (0-1)	See: Annex E, table E.1, 1.3
	Is an interoperability standard in place for QR codes?	QR code interoperability (0-1)	See: Annex E, table E.1, 1.4
	Are interoperability measures consideredrobust?	Downtime (%) Transaction failures (%)	Local data
	Do entities operating interoperability arrangements periodically introduce innovations and promotions to advance electronic payments?	Innovations (0-1)	Local data
Fast Payment Systems	Is a Fast Payment System (FPS) operational or in development? Is the FPS available for P2B merchant payments? Does the FPS support the use of aliases? Are QR code standards in place that enable the use of QR codes for fast payments at the physical point-of-sale and at e-merchants? Is an FPS oversight framework in place? Do FPS oversight criteria cover legal basis, governance, risk management, financial consumer protection, including dispute resolution and complaints handling, and efficiency and effectiveness?	FPS (0-6)	Local data
Automated Clearing House	Is an ACH for credit transfers and/or direct debits available? Are net balances calculated and settled multiple times a day? Does final settlement take place through RTGS or central bank money if there is no RTGS? Does the ACH have a settlement risk management framework? Do a diversified set of actors have direct or indirect access to ACH services?	ACH (0-5)	See: Annex E, table E.1, 1.6
Real Time Gross Settlement	Are most large-value payments channeled through the RTGS? Is access to the RTGS granted on the basis of objective criteria to ensure safe and sound operation of the system?	RTGS (0-2)	See: Annex E, table E.1, 1.5

TABLE F.4 Other financial and ICT infrastructures assessment

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Telecommunications	Does the degree of stable connectivity, network coverage, and access interfere with EPA platforms (e.g., POS, mobile) or critical functions (e.g., authorization, clearing, settlement, funds receipt)?	ICT Development Index: Access and Use components Mobile Connectivity Index: Infrastructure component	ITU GSMA
Identification	Does access to identification constrain merchants' and consumers' ability to open the accounts that are necessary for accepting and making electronic payments?	Percent of MSMRs that have a business identification Percent of population unregistered	Local data WBG, ID4D Dataset
Credit reporting systems	Does the coverage or quality of credit reporting systems deter PSPs from seeking new merchant customers?	Percent of MSMRs covered by credit reporting service provider	Local data
Access points[39]	How widespread are physical access points? Does access point coverage affect consumers' take-up of non-cash financial instruments?	Access points (per 100,000 adults) ATMs Branches Mobile agent outlets	 IMF, FAS IMF, FAS IMF, FAS
E-commerce readiness	Are ICT, payments, and shipping infrastructures adequate for meeting e-commerce demand?	UNCTAD E-commerce Index	UNCTAD
	Does the market have e-commerce aggregators or gateways that provide specialized services to merchants?	Number of e-commerce aggregators or gateways	Local data
	Do merchants have access to international, regional, or local third-party online marketplaces? If so, do these provide financial or technical assistance to merchants?	Percent of merchants who are registered as sellers on third-party online marketplaces	Local data
	Do merchants have access to website development resources?	Number of e-commerce websites	Local data
	How are e-commerce payments processed?	Share of e-commerce payments processed by (%): • Online marketplaces • Third-party payment processors • Payment gateways • Cash-on-delivery	Local data
	Does the level of information security impede e-commerce?	Frequency of cyber-crime incidents	Local data

TABLE F.5 Education and perceptions assessment

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Financial capability	Are merchants and consumers equipped to weigh the costs and benefits of cash versus electronic payments?	Adults who are financially literate (%)	S&P, Global Finlit Survey
	Has a national financial capability / literacy / education strategy been launched, or is one in development? Does a dedicated multi-stakeholder structure exist to promote and coordinate the provision of financialeducation?	Financial capability commitment score (0-2)	WBG, FICP Survey (Annex E)
Cash culture	How prevalent is the use of cash outside of the P2B merchant setting?	Paid utility bills: using cash only (% paying utility bills, age 15+) Received wages: in cash only (% wage recipients, age 15+)	WBG, Global Findex Database

ECONOMICS OF EPA

TABLE F.6 Acceptance benefits and costs assessment

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Revenue Gains	What are merchants' revenue gains from EPA adoption?	Discontinuity-based metric Comparative metric *(see 3.1.1)*	Local data / Merchant survey
Relative Costs of EPA and Cash Acceptance	What are the costs of electronic payment acceptance? What are the costs of cash acceptance? How do the costs of electronic payment acceptance compare to the costs of cash acceptance?	Time costs • Waiting time • Transaction time • Reconciliation time • Operations time Logistic costs • Travel • Communication Infrastructure costs • Deprecation • Maintenance Damage costs • Error • Theft • Fraud • Insurance Service costs • Periodic fees • Per transaction fees Cost of funds • Holding costs • Float costs	Local data/Merchant survey (*see section 3.1.2 for calculation details*)
Tax Liability	How large is the informal economy? For merchants who have adopted EPA, how do their pre- and post-EPA tax rates and tax compliance burdens compare? Do transparency and/or corruption levels harm confidence in the tax system?	Informal output (% of official GDP) Ability to limit tax evasion Percent of firms identifying corruption as a major constraint Control of corruption	Elgin et al. (2021) Institutional Profiles Database WBG Enterprise Surveys Worldwide Governance Indicators

TABLE F.7 **Provider costs and risks assessment**

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Customer Acquisition and Service Costs	How costly is it for PSPs to obtain and serve merchant and consumer clients?	Average costs by PSP type of: Sales and marketing Setup Onboarding Servicing	Local data / Provider interviews
Subsidization	To what extent do PSPs subsidize acceptance technology and fees to achieve scale?	Acceptance technology subsidization (POS, mPOS, mobile technology) Temporary fee subsidization (MDR, IF, transaction fees)	Local data / Provider interviews
Customer Loss, Fraud, and Cybersecurity	How costly are the risks of customer loss, fraud, and the need to ensure cyber resilience for PSPs?	Fraud to sales ratio Chargebacks (% of sales) MSMR failure rate Cybersecurity costs	Local data / Provider interviews
Incentives and Innovation	How much do PSPs invest in incentive programs and innovation in new products and services?	Access points (per 100,000 adults) ATMs Branches Mobile agent outlets	Local data / Provider interviews

TABLE F.8 **Consumer behavior assessment**

Assessment Element	Assessment Questions	Indicator Sources
How high is the propensity to make electronic payments among consumers?	Made digital payment in the past year (% of account holders)	WBG Findex Database
Which payment methods do consumers prefer?	Consumers' preferred payment methods Reasons for payment preferences Experiences with various payment methods Merchants' perceptions of customers' preferred payment methods	Household interview Merchant survey

LEGAL, REGULATORY AND OVERSIGHT

TABLE F.9 **Legal and regulatory (general) assessment**

Assessment Element	Assessment Questions	Potential indicator(s)	Indicator Sources
Soundness and Predictability	Does legal or regulatory ambiguity or inconsistency deter providers and merchants from engaging in EPA?	Regulatory Quality: Percentile Rank	Worldwide Governance Indicators
Contractual Relations and Enforceability	Does the strength of contract enforcement affect PSPs' willingness to provide electronic payment services?	Rule of Law: Percentile Rank	Worldwide Governance Indicators

TABLE F.10 **Legal and regulatory (financial) assessment**

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Soundness and Predictability	Is the legal and regulatory framework for retail payments risk-based, provider- and instrument-neutral, and forward-looking?	Overall assessment [0-1]	Local data
	Do legal provisions cover fair and competitive practices in the provision of payment services? Do legal provisions cover electronic money? Are agent-based models permitted? Are a variety of nonbank entities permitted to offer payment services on the acceptance side of the market? Are a variety of nonbank entities permitted to offer payment services on the issuance side of the market?	Specific criteria score [0-6]	See: Annex E, table E.2
	Does a transparent process exist for nonbank PSPs to obtain a credit license directly or indirectly through a subsidiary entity?	Credit neutrality [0-1]	Local data
Financial consumer protection	Do legal provisions cover consumer protection for retail payment services? Do terms, conditions, fees, and customer rights have to be disclosed prior to the customer entering into a contract? Are customers protected against unauthorized transactions in the form of (limited) customer liability? Are recourse and dispute resolution mechanisms clearly articulated and easily available to the public? Is admissible disclosure of transactional and/or personal data is clearly articulated and easily available to the public? Are customers protected against third-party claims on their funds?	FCP Score [0-6]	See: Annex E, table E.2
System integrity	Is a risk-based approach in place for merchant due diligence? Is the AML/CFT regime compliant or largely compliant with FATF recommendations on a risk-based approach and customer due diligence?	RBA to MDD [0-1] FATF: RBA and CDD [0-2]	Local data FATF Consolidated Assessment Ratings

TABLE F.11 Provider costs and risks assessment

Assessment Element	Assessment Questions	Potential Indicator(s)	Indicator Sources
Central bank legal powers	Does the central bank have formal powers to perform payment oversight? Does empowerment grant the central bank the power to operate, regulate, and oversee payment systems?	Score [0-3]	See: Annex E, table E.3
Organizational arrangements	Is the central bank's payment system oversight function established and performed on an on-going basis? Is there a specific unit or department within the Central Bank responsible for payment system oversight? Is the payment system oversight function segregated from payment system operational tasks?	Score [0-4]	See: Annex E, table E.3
Objectives of payment system oversight	Has the central bank set down its objectives in carrying out the payment system oversight function in a regulatory or policy document? Is the regulatory policy publicly available? Do the objectives address the safety and efficiency of payment systems? Do the objectives address market competitiveness? Do the objectives address consumer protection?	Score [0-5]	See: Annex E, table E.3
Scope of payment system oversight	Is oversight performed over retail payment systems? Is oversight performed over payment services and instruments? Is oversight performed over commercial bank operated payment systems and services? Is oversight performed over all relevant payment systems and services in the country even if the operator is a non-bank? Are competent authorities legally empowered to regulate and supervise on an ongoing basis entities operating payment card networks or switches and entities operating mobile money platforms?	Score [0-7]	See: Annex E, table E.3
Cooperation with relevant authorities	Is cooperation with other relevant authorities ensured through a formal mechanism, such as a memorandum of understanding or a legal requirement? Does cooperation involve regular meetings, information exchanges, prior notice of regulatory action, and joint inspection?	Score [0-2]	See: Annex E, table E.3
Cooperation with other stakeholders	Is a formal National Payments Council in place, or does the central bank hold regular meetings with stakeholders to discuss strategic issues for the payment system?	Score [0-2]	See: Annex E, table E.3
Risk-based approach to oversight	Does payment system oversight reflect a risk-based, proportional, provider- and instrument-neutral, and forward-looking approach?	Score [0-1]	Local data

Glossary

Term	Definition (Source: CPMI and World Bank)
Automated clearing house (ACH)	An electronic clearing system in which payment orders are exchanged among financial institutions, primarily via magnetic media or telecommunications networks, and then cleared amongst the participants. All operations are handled by a data processing center. An ACH typically clears credit transfers and debit transfers, and in some cases also cheques.
Agent-based models	Bank/PSP partnerships with non-banks, typically retail commercial outlets, in order for the latter to provide a range of banking and other financial services
Basic payment account	A bank account that is typically focused on payment services and characterized by low-cost and no-frill features. These accounts are often offered in combination with a debit card.
E-money or electronic money	E-money is a record of funds or value available to a consumer stored on a payment device such as chip, prepaid cards, mobile phones or on computer systems as a non-traditional account with a banking or non-banking entity.
Final settlement	The irrevocable and unconditional transfer of an asset or financial instrument, or the discharge of an obligation by the FMI or its participants in accordance with the terms of the underlying contract. Final settlement is a legally defined moment.
Mobile money	E-money product where the record of funds is stored on the mobile phone or a central computer system, and which can be drawn down through specific payment instructions to be issued from the bearers' mobile phone. Also known as m-money.
National Payments Council	A National Payments Council gathers the very senior representatives (in some cases even the top-level authority) of the major stakeholders to discuss the current situation of, and potential improvements to, the national payments system from a strategic perspective. A formal National Payments Council typically has a defined organizational structure and operational rules that facilitate dialogue and decision-making.
Netting	The offsetting of obligations between or among participants in the netting arrangement, thereby reducing the number and value of payments or deliveries needed to settle a set of transactions

Term	Definition (Source: CPMI and World Bank)
Payment card switch	A payment card switch is defined as a mechanism that connects various institutions allowing interchange of payment cards transactions of participating institution cardholders at other participating institution merchants, ATMs and other card acceptance devices. A payment card switch is typically used for routing authorization and authentication-related messages between participating institutions, and can also generate and distribute clearing and settlement files. In some settings, the individual institutions could themselves have payment card switches to connect their own ATMs and POS terminals to their own internal card processing systems, and these payment card switches are then connected to a central inter-institution payment card switch. Payment card switches are also beginning to be used for processing of card transactions initiated through other channels like internet and mobile phones. This is often used interchangeably with payment card network but there are important differences. A payment card switch in general refers to the technical infrastructure whereas a payment card network encompasses operational arrangements, payment products, rules, procedures, acceptance brands etc. and essentially is a payment system.
Payment service provider (PSP)	An entity that provides payment services, including remittances. Payment service providers include banks and other deposit-taking institutions, as well as specialized entities such as money transfer operators and e-money issuers.
Payment system operator (PSO)	An entity that operates a payment network and/or other payment infrastructures.
Real-time gross settlement (RTGS)	The real-time settlement of payments, transfer instructions, or other obligations individually on a transaction-by-transaction basis.

References

Adhikary, A., K.S. Diatha, S.B. Borah, and A. Sharma. 2021. How does the adoption of digital payment technologies influence unorganized retailers' revenue performance? An investigation in an emerging market. Journal of the Academy of Marketing Science.

Ardic Alper, Oya Pinar; Marin Espinosa, Ana Georgina. 2020. Electronic Payments Acceptance Incentives—Literature Review and Country Examples (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/793041588860799013/Electronic-Payments-Acceptance-Incentives-Literature-Review-and-Country-Examples

Bech, Morten, Yuuki Shimizu, and Paul Wong. 2017. The quest for speed in payments. Bank for International Settlements Quarterly Review, March.

Better than Cash Alliance. 2018. Achieving Development and Acceptance of an Open and Inclusive Digital Payments Infrastructure.

Bounie, David, Abel François, and Leo Van Hove. 2017. Consumer Payment Preferences, Network Externalities, and Merchant Card Acceptance: An Empirical Investigation. Review of Industrial Organization 51:3, 257-290.

Chakravarty, Satya R. and Pal, Rupayan, 2013. *Financial inclusion in India: An axiomatic approach*. Journal of Policy Modeling, Elsevier, vol. 35(5), pages 813-837.

Chawla, Arushi. 2020. COVID-19 as a Catalyst in the Deeper Acceptance of Digital Payment Platforms. Counterpoint Research. April 8. https://www.counterpointresearch.com/covid-19-catalyst-digital-payment/.

Committee on Payments and Market Infrastructure (CPMI) and World Bank Group (WBG). 2016. Payment Aspects of Financial Inclusion, April.

Committee on Payments and Market Infrastructure (CPMI) and World Bank (WB). 2020. Payment Aspects of Financial Inclusion: Application Tools, September.

Committee on Payments and Market Infrastructure (CPMI). 2016. Fast payments—enhancing the speed and availability of retail payments, no 154, November.

De Nederlansche Bank. 2016. Payment behavior: the role of socio-psychological factors.

Elgin, C., M. A. Kose, F. Ohnsorge, and S. Yu. 2021. "Chapter 2: Understanding the Informal Economy: Concepts and Trends." In The Long Shadow of Informality: Challenges and Policies, edited by F. Ohnsorge and S. Yu. Washington, DC: World Bank. https://www.worldbank.org/en/research/publication/informal-economy.

Financial Action Task Force (FATF). 2007. Guidance on the Risk-Based Approach to Combating Money Laundering and Terrorist Financing: High-Level Principles and Procedures. June 2007.

Financial Action Task Force (FATF). 2012. The FATF Recommendations. Updated June 2019.

Govil, S. 2016. Perspectives on Accelerating Global Payment Acceptance. Visa

Global Partnership for Financial Inclusion (GPFI). 2014. The opportunities of digitizing payments.

GSM Association. 2014. Setting up shop: Strategies for building effective merchant payment networks.

International Finance Corporation (IFC). 2019. Micro, Small and Medium Enterprises—Economic Indicators. Analysis Note. December.

International Telecommunication Union (ITU). 2016. Enabling Merchant Payments Acceptance in the Digital Ecosystems.

International Telecommunication Union (ITU). 2017. Measuring the Information Society Report.

Kaufmann, Daniel, Aart Kraay and Massimo Mastruzzi. 2010. The Worldwide Governance Indicators: Methodology and Analytical Issues. Policy Research working paper no. WPS 5430. World Bank.

Mishra, Srijit; Nathan, Hippu Salk Kristle; and B. Reddy, Sudhakara. 2009. An Alternative Approach to Measure HDI. Working Papers id:2069, eSocialSciences.

Mastercard. 2017. Building Electronic Payment Acceptance at the Base of the Pyramid to Advance Financial Inclusion.

Mastercard. 2019. Mastercard Rules. December 19. https://www.mastercard.us/content/dam/mccom/global/documents/mastercard-rules.pdf.

Mastercard. 2020a. Mastercard Incorporated Reports Second-Quarter 2020 Financial Results. *Earnings Release*. https://s25.q4cdn.com/479285134/files/doc_financials/2020/q2/2Q20-Earnings-Release.pdf.

Mastercard. 2020b. Mastercard Incorporated Reports Third-Quarter 2020 Financial Results. *Earnings Release*. https://s25.q4cdn.com/479285134/files/doc_financials/2020/q3/3Q20-Earnings-Release.pdf.

Organisation for Economic Cooperation and Development (OECD). 2011. OECD Guide to Measuring the Information Society 2011. OECD. Paris.

Rochet, Jean-Charles and Jean Tirole. 2004. Two-Sided Markets: An Overview. Institut d'Economie Industrielle working paper. https://web.mit.edu/14.271/www/rochet_tirole.pdf.

Rysman, Marc. 2009. The Economics of Two-Sided Markets. Journal of Economic Perspectives. Vol. 23, No. 3, Summer, pp. 125–143.

Sarma, Mandira. 2008. Index of Financial Inclusion. Finance Working Papers 22259, East Asian Bureau of Economic Research.

Schneider, F., A. Buehn, and C. E. Montenegro. 2010. "Shadow Economies All over the World: New Estimates for 162 Countries from 1999 to 2007." Policy Research Working Paper 5356, World Bank, Washington, DC.

United Nations. 2018. Human Development Indices and Indicators: 2018 Statistical Update Technical Notes. Available at: http://hdr.undp.org/sites/default/files/hdr2018_technical_notes.pdf

United Nations Conference on Trade and Development (UNCTAD). 2015. Information Economy Report 2015: Unlocking the Potential of E-commerce for Developing Countries.

United Nations Conference on Trade and Development (UNCTAD). 2019. UNCTAD B2C E-Commerce Index 2019.

Visa. 2016. Small Merchants, Big Opportunity: The Forgotten Path to Financial Inclusion.

Visa. 2020a. Visa Core Rules and Visa Product and Service Rules. Public Version 1.2 (1 June). https://usa.visa.com/dam/VCOM/download/about-visa/visa-rules-public.pdf.

Visa. 2020b. Visa Inc. Reports Fiscal Third Quarter 2020 Results. https://s1.q4cdn.com/050606653/files/doc_financials/2020/q3/Visa-Inc.-Q3-2020-Earnings-Release.pdf.

Visa. 2020c. Visa Inc. Reports Fiscal Fourth Quarter and Full-Year 2020 Results. https://s1.q4cdn.com/050606653/files/doc_financials/2020/q4/Visa-Inc.-Q4-2020-Earnings-Release.pdf.

Visa. 2021. Unlocking the Benefits of Digital Payments for Micro & Small Businesses: Insights from Mexico. https://usa.visa.com/dam/VCOM/regional/na/us/about-visa/documents/unlocking-the-benefits-of-digital-payments-insights-from-mexico.pdf.

World Bank. 2008. Measuring Payment Systems Development, https://documents1.worldbank.org/curated/en/790981468147564125/pdf/490030WP0Measu10Box338937B01PUBLIC1.pdf

World Bank. 2012. Developing a Comprehensive National Retail Payments Strategy. http://documents1.worldbank.org/curated/en/839121469729131991/pdf/84076-REPLACEMENT-FILE-PUBLIC-Developing-comprehensive-national-retail-payments-strategy.pdf.

World Bank. 2014. Facilitating SME Financing Through Improved Credit Reporting. May. http://documents1.worldbank.org/curated/en/429511468053058455/pdf/937900REPLACEM0litating0SME0Upd2014.pdf.

World Bank Group. 2016a. Cash vs. Electronic Payments in Small Retailing: Estimating the Global Size.

World Bank Group. 2016b. A Practical Guide for Measuring Retail Payment Costs. November.

World Bank Group. 2017. Good Practices for Financial Consumer Protection, 2017 Edition. World Bank, Washington, DC. World Bank. https://openknowledge.worldbank.org/handle/10986/28996 License: CC BY 3.0 IGO.

World Bank. 2019. National Financial Inclusion Strategy Resource Center. https://www.worldbank.org/en/topic/financialinclusion/brief/financial-inclusion-strategies-resource-center.

World Bank. 2020a. Embedding Digital Finance in e-Commerce Platforms during the COVID-19 Pandemic. Discussion Note. December. http://documents1.worldbank.org/curated/en/819411608643348469/pdf/Embedding-Digital-Finance-in-e-Commerce-Platforms-during-the-COVID-19-Pandemic.pdf.

World Bank. 2020b. Fast Payment Systems: Preliminary Analysis of Global Developments. High-Level Draft for Public Consultation. http://pubdocs.worldbank.org/en/449461608572673957/FPS-Preview-Report-WB-Dec-17.pdf.

World Bank. 2020c. Payment Systems Worldwide: A Snapshot. Summary Outcomes of the Fifth Global Payment Systems Survey. June. http://documents1.worldbank.org/curated/en/115211594375402373/pdf/A-Snapshot.pdf.

World Bank. 2021a. Considerations and Lessons for the Development and Implementation of Fast Payment Systems. September. https://fastpayments.worldbank.org/

World Bank. 2021b. Risks in Fast Payments Systems and Implications for National Payments System Oversight, Focus Note, September.

World Bank. 2021c. Consumer Risks in Fintech: New Manifestations of Consumer Risks and Emerging Regulatory Approaches, Policy Research Paper, April.

World Economic Forum and World Bank Group (WEF and WBG). 2016. Innovation in Electronic Payment Adoption: The case of small retailers.

Notes

1. World Bank (2022). Guidance for the Implementation of Electronic Payments Acceptance Reforms.
2. Instrument-neutrality means that the guides can be adapted to any type of interview approach, such as surveys or focus group discussions.
3. The "assessment elements" presented in the Assessment Guide include EPA barriers, enablers, and other development considerations. The assessment elements have been derived from literature addressing EPA and retail payment system development, as well as inputs and vetting from experts on the FIGI EPA Working Group
4. As part of the EPA Package, the World Bank published the quantitative merchant survey questionnaires used as part of the EPA Pilots.
5. E-money instruments generally include mobile money, online money, and prepaid cards.
6. EFT refers to account-to-account direct credit and direct debit transfers.
7. Acceptance intermediaries include a range of entities that facilitate merchant acceptance, including payment facilitators/aggregators, third-party processors, payment gateways, and bill aggregators, among others. The FIGI EPA Intermediaries report addresses these entities and activities in more depth.
8. This configuration is most applicable for mobile money acceptance. An example is the Lipa Na M-Pesa account, which enables merchants in Kenya to accept P2B M-Pesa mobile money payments.
9. Access to finance among MSMRs can be approximated using data on MSMEs, more broadly.
10. See: MSME Finance Gap, Definitions, https://www.smefinanceforum.org/data-sites/msme-finance-gap
11. The EPA Incentives Report, a part of the EPA Package, provides further empirical evidence for these relations.
12. The most common employee-based size thresholds for MSMEs are: micro (1-9 employees); small (10-49 employees); and medium (50-250 employees) (IFC 2019).
13. The proposed card switch indicator is described in Annex E, table E.1.
14. Thus far, schemes have not been as integral to other electronic payment instruments, such as mobile money, but providers of these payment instruments are beginning to develop scheme-like arrangements to manage risk and establish standard operational arrangements.
15. See: EMVCo, https://www.emvco.com/.
16. Data from the GPSS permit developing cross-country measures of interoperability for POS terminals, mobile money, and QR codes. For POS terminals and mobile money, the indicators reflect whether these channels have good or full interoperability. For QR codes, the indicator reflects whether regulations enforce the EMV Specification or another interoperability standard for QR codes. As defined in the GPSS, "full (good) interoperability of POS terminals" means that all (most) payment cards issued by banks in the country can be used seamlessly in any POS terminal in the country. "Full (good) interoperability of mobile money" means that all (most) payments between mobile money services can be made seamlessly, at least for person-to-person transfers.
17. Also see https://fastpayments.worldbank.org/

18. The next iteration of the GPSS will also include detailed questions on FPS that will enable the development of an FPS indicator.
19. The oversight criteria are adapted from World Bank (2021b).
20. For further guidance on assessing financial consumer protection standards for retail payments, see section 3.3.2.2.
21. In some limited cases (e.g., Mexico and Saudi Arabia), the RTGS plays a more direct role in retail payments (CPMI and WBG 2016).
22. See, GSMA Mobile Connectivity Index, http://www.mobileconnectivityindex.com/#year=2018&dataSet=dimension

    There is minimal overlap in the indicators included in the MCI and the ICT Development Index, as the MCI focuses more on mobile infrastructure. Of the 12 indicators underlying the MCI's Infrastructure component, only Secure Internet Servers per 1 million people overlaps with the ICT Development Index.
23. More recently, the COVID-19 pandemic has compelled many MSMRs to develop e-commerce strategies, as customer foot traffic has taken a hit.
24. It is worth pointing out that the individuals using the internet and secure internet servers indicators are reflected elsewhere in the Assessment Guide, which reinforces the notion that barriers to e-commerce and EPA more broadly overlap.
25. The World Bank Global Findex Indicator, Used the internet to buy something online in the past year (% age 15+), can also shed light on the scale of e-commerce in a given country. This indicator is subsumed in the Made digital payment indicator, which is reflected elsewhere in the Assessment Guide.
26. See: S&P Global Finlit Survey – Methodology, https://gflec.org///sp-global-finlit-survey-methodology/. One drawback of this indicator is that it was developed in 2014, and it is unclear whether the survey will be conducted in the future.
27. This assessment element differs from the consumer behavior element discussed later (see: 3.4) in that it focuses on the centrality of cash in the broader economy, whereas consumer behavior focuses on P2B payments.
28. A popular research design for analyzing before-and-after effects is the difference-in-differences estimation approach.
29. For a more in-depth description of these cost elements, please see WBG 2016b.
30. See Elgin et al. (2021), Annex 2A, pg. 70 for the full list of variables.
31. The IPD comprises 127 indicators of 144 countries' institutional patterns. The indicators are based on perceptions interviews conducted by France's Ministry for the Economy and Finance and the Centre for Prospective Studies and International Information. See: Institutional Profiles Database, http://www.cepii.fr/institutions/EN/ipd.asp
32. In addition, please see World Bank (2021c) for consumer risks in the fintech era and examples of emerging regulatory approaches.
33. The FATF issues compliance ratings through its Consolidated Assessment Ratings. See: https://www.fatf-gafi.org/publications/mutualevaluations/documents/assessment-ratings.html.
34. Using Recommendations 1 and 10 for this indicator is not meant to minimize the importance of the other FATF Recommendations. Rather, Recommendations 1 and 10 are most relevant for EPA.
35. For more on the features of a neutral and proportional legal and regulatory framework, see section 3.3.2.1.
36. See, for example, World Bank (2008), the G20 Financial Inclusion Indicators, and PAFI Application Tools (CPMI and WB, 2020).
37. See Annex D, Table D.3 for more general assessment criteria to be evaluated at the local level regarding legal and regulatory neutrality and proportionality.
38. See Annex D, Table D.3 for more general assessment criteria to be evaluated at the local level regarding a risk-based approach to oversight.
39. For the access points assessment element, it is especially important to consider local context. Certain types of access points may not be relevant for a country, given the country's payment system features and broader ecosystem.

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