Annotated Bibliography:

Payments Systems in Developing Countries


This paper presents an inventory model for a liquid asset where the per-period net expenditures have two components: one that is frequent and small and another that is infrequent and large. The authors give a theoretical characterization of the optimal management of liquid asset as well as of the implied observable statistics. Using this model, the document interprets some aspects of households’ currency management in Austria, as well as the management of demand deposits by a large sample of Italian investors.


Building on the Baumol–Tobin cash inventory model, this paper uses a dynamic model which allows for the possibility of withdrawing cash at random times and at a low cost. This modification introduces the existence of developments in withdrawal technology, such as the increasing diffusion of bank branches and ATM terminals. The model qualitatively reproduces several empirical patterns. Using micro data, the authors estimate structural parameters and show that the model captures important economic patterns. The estimates are used to quantify the expenditure and interest rate elasticity of money demand, the impact of financial innovation on money demand, the welfare cost of inflation, and the benefit of ATM ownership.


This paper presents the level of adoption of internet communication technologies in the banking sector and investigates the prospects of m-Commerce in Nigeria based on strengths, weaknesses, opportunities and threats (SWOT) analysis. The results reveal that all banks in Nigeria offer e-Banking services and approximately 52% of the offer some form of mobile banking services. Banks and telecommunications operators have enormous potentials and opportunities for mobile commerce but the level of patronage, quality of cell phones, lack of basic infrastructure, and security issues pose a major threat to its wide scale implementation.

This article examines provider incentives, as well as administrative costs and institutional conditions for successful implementation associated with provider payment alternatives. The alternatives considered are budget reforms, capitation, fee-for-service, and case-based reimbursement. The authors conclude that competition, whether through a regulated private sector or within a public system, has the potential to improve the performance of any payment method.


The paper undertakes an in-depth review of Ghana’s monetary policy regimes since its independence: direct controls, monetary targeting, and inflation targeting under different governments. Financial sector development and reforms that have taken place alongside the monetary policy regimes are also analyzed. These include regulatory and legal reforms, capital market and money market reforms, banking reforms, currency redenomination, reforms, payment system reform, rural banking reforms, and Ghana’s debut sovereign bond issue.


This paper tries to measure financial sector outreach and investigate its determinants. The authors present indicators of banking sector outreach across 99 countries, constructed from aggregate data provided by bank regulators. They also show that these indicators closely predict harder-to-collect micro-level statistics of household and firm use of banking services, and are associated with measures of firm financing obstacles in the expected way. Finally, the authors explore the association between the outreach indicators and standard determinants of financial sector depth. They find many similarities but also some differences in the determinants of outreach and depth.


This paper studies the consequences of global financial turmoil on the financial health of Africa. The authors emphasize the importance of defining the role of government in sustainable and market-friendly financial sectors expansion. In their view, foreign banks have brought more benefits than risks for their host economies in Sub-Saharan Africa, but are not a panacea and not a substitute for institutional and policy reform. The profile of foreign banks, however, has changed, with more and more regional banks emerging. Finally, the paper interprets this trend as a promising feature as it might allow the small African financial system to reap benefits from scale economies, but it also requires regulatory and supervisory improvements and coordination across the region.


This paper performs an empirical analysis of the impact of surcharging card payments on merchant acceptance and consumer payment choice. The study takes place in the Netherlands, where retailers are allowed to surcharge consumers for debit card use. Based on consumer and retailer survey data, the analysis shows that surcharging steers consumers away from using debit cards towards cash. Half of the observed difference in debit card payment shares across retailers can be explained by this
surcharge effect. According to the authors, removing debit card surcharges may induce cost savings of more than 50 million euros in the long run.


In this paper, the authors explore the factors affecting internet and mobile phone banking adoption in South Africa. They also compare the differences in the perception of Internet banking and mobile phone banking and factors which influence use. The findings indicate that both the adoption intent and the perception of internet banking users differ markedly from mobile phone banking users.


This paper contributes to the dialogue on how to maximize the impact of pro-poor service delivery by considering evidence from a wide selection of case studies to distinguish the successes and failures of post-1994 pro-poor service delivery. The author shows case evidence that brings to light some important points: that decentralization and participation can reinforce historical distributions of privilege; that community ownership is neither a necessary nor a sufficient condition for effective service delivery to individuals in rural communities; that when managed well, private outsourcing can benefit the poor; and that the abolition of user fees is often not the best way to ensure access to basic services. Finally, the paper cautions against overly ambitious and idealistic policy making.


In this paper, the authors build and estimate a behavioral dynamic model that allows them to evaluate the efficiency of current and alternative distribution mechanisms. This framework resembles the individual’s decision to collect the transfer. To estimate, the authors use data from a cash transfer program in Ecuador where recipients incur high transaction costs each time they collect their benefits. Finally, some alternative payment mechanisms are simulated. The results of these exercises allow the authors to show that an adequate design of the delivery of payments can increase the value of cash transfer programs.


Using data obtained from 142 country responses to the Global Payment Systems Survey carried out by the World Bank, this paper tries to synthesize a set of qualitative and quantitative payment system characteristics into categories reflecting various levels of development. The purpose of this exercise is to provide central banks, in particular in developing countries, with a tool to monitor developments in their payments systems and to make them comparable across countries.


This paper studies whether bank privatization reduces access to financial services. The authors analyze a case study on the privatization of Uganda Commercial Bank (UCB) to the South African
bank Stanbic. Though market segmentation remains a concern since Stanbic faces little or no direct competition in many remote areas, some innovative aspects of the sales agreement have enabled the bank to improve its profitability while maintaining, or even improving, access to financial services for some hard-to-serve groups.


This policy paper discusses how mobile phones may be used to extend banking services to the unbanked. Using data from a household-level survey, the authors investigate the current usage of airtime as a means of payment as well as the potential demand for m-banking. Regulatory challenges to the adoption of m-banking as well as potential business models and possible models of cooperation between banks and mobile operators are also explored. This document suggests that m-banking models on a mobile platform may be leveraged to move beyond simple payments and transaction. Finally, the authors make some recommendations to policy-makers and regulators, who need to inform themselves of the possibilities, regulatory implications, and possible business models involved in order to provide m-banking for the unbanked in Africa.


This paper develops a methodology to construct detailed indices of financial sector development across countries and uses it to create a new panel database of financial sector development in Middle East and North Africa (MENA) countries. It combines existing quantitative data with information from comprehensive surveys undertaken in 2000–01 and 2002–03. The paper shows that some MENA countries have relatively well-developed banking sectors and regulatory and supervisory regimes. However, across the region, the non-bank financial sectors and supporting institutions are in need of reform.


This article uses examples from southern Africa to highlight the opportunities and risks involved in using technology to deliver social protection, with particular focus on two schemes in Malawi. For example, providing cash transfers to vulnerable groups reduces vulnerability and chronic poverty; but delivering cash to remote, rural locations can be expensive and insecure. The paper concludes that there is great potential for the use of technology in delivering social protection, especially if employed at a national scale and taking advantage of the full spectrum of uses to ensure cost-efficiency.


The purpose of this paper is to address how cultures may affect the way different people use the internet. This study shows that there is a great potential for e-commerce in Egypt, in particular, and the Arab world in general. However, there are many challenges for a locale where people are used to paying cash for what they buy; the credit or debit card as an instrument for buying is not readily
acceptable by public Egyptians. Results suggest that e-commerce has some merit in targeting global customers, if it considers cultural differences when adopting and applying global marketing strategy. According to the author, although there are many governmental initiatives to adopt information and communication technologies (ICTs) on all levels in Egypt, the reality is still far behind and there is still a lot to be done by both the government and private sector to gain the benefits required.


This essay surveys the economic literature on interchange fees and the debate over whether interchange should be regulated and, if so, how. The authors consider the operation of unitary payment systems, such as American Express, in the context of the economic literature on two-sided markets, in which businesses cater to two interdependent groups of customers. The main focus is on the determination of price structure. The authors discuss the basic economics of multi-party payment systems and the role of interchange in the operation of such systems under some standard, though unrealistic, simplifying assumptions. The point that drives the discussion is that the interchange fee is not an ordinary price; its most direct effect is on price structure, not price level.


This introduction to a special issue of Development Policy Review considers growing experience with cash transfers in development in Africa and Asia and draws on lessons learned from the implementation of cash transfer schemes in Latin America. It is complemented by the simultaneous publication of papers in Disasters: The Journal of Disasters Studies, Policy and Management 30 (3) which considers experience with cash transfers in emergencies.


This review of African Payment for Watershed Services (PWS) schemes describes ongoing and proposed initiatives, and describes the factors that cause Africa to have far fewer PWS initiatives than Latin America. The author suggests that the implied social targeting that comes with a focus on poverty alleviation increases the transaction costs and decreases the level of watershed services provided by PWS in Africa. Moreover, this implies that the current dependence of African PWS programs on general tax revenues for financing, rather than direct payments from beneficiaries will likely continue.


This paper shares the results of the 2009 Survey of Consumer Payment Choice (SCPC), as well as revised 2008 SCPC data. Several findings are notable. Between the 2008 and 2009 surveys, consumers increased their use of cash and close substitutes for cash, such as money orders and prepaid cards. Consumers also reduced their use of credit cards and debit cards, as well as payments made using a bank account number. According to the authors, weaker economic conditions, new government regulations, and bank pricing of payment card services all likely contributed to the shift back toward cash.

The purpose of this document is to investigate the effect of electronic money technologies on demand for money. In particular, the authors estimate currency demand functions conditional on electronic money adoption using unique household-level survey data from Japan. The results indicate that average cash balances do not decrease with the adoption of electronic money. The authors also show that consumers do not significantly substitute cash holding with electronic money holding despite the rapid diffusion of electronic money among households.


This paper considers the use of biometric technology to underpin transfer programs and how new technology is opening up possibilities for effective transfer programs that, up to now, have only been a theoretical option in the institutional conditions that prevail in many developing countries. Once implemented, biometric identification systems can be used to support a wide range of other development initiatives including banking, voting, health care, and general identification systems. In addition, the authors review some of the programs using these technologies and how it is enabling poor countries to quickly advance in the area of identity, much as the cellphone revolution did in the area of communications.


This paper attempts to clarify the economic tradeoffs between two different strategies for market intermediation: the “merchant” and the “two-sided platform” modes. In the former, the intermediary buys from sellers and resells to buyers; while in the latter mode, the intermediary enables affiliated sellers to sell directly to affiliated buyers. The author finds that the merchant mode yields higher profits than the two-sided platform mode when the degree of complementarity/substitutability among sellers' products is higher. Conversely, the platform mode is preferred when seller investment incentives are important or when there is asymmetric information regarding seller product quality. These tradeoffs are discussed in the context of several prominent digital intermediaries.


The author of this note is concerned with the provision of wider access to formal financial services and the role of governments and monetary authorities. In particular, this paper studies whether or not such increased access jeopardizes financial stability. The stance the author takes is that the promotion of access will enhance financial stability in both the long and the short run. Finally, the paper also identifies those areas where central bank involvement can promote such a mutually reinforcing process.

This article studies a class of models of money and the payments system to deliver an analysis of "mobile banking" in the context of the rapid expansion of M-PESA, a new technology in Kenya that allows payments via mobile phones, and currently reaches close to 38 percent of Kenyan adults. Some implications of these models are presented. These include the potential gain, under some circumstances, from allowing net e-money credit creation, and the impact that the associated enhancement of credit markets can have on monetary policy and on the real economy, among others. Finally, the authors provide some summary statistics from data collected on M-PESA agents and users that are reminiscent of the environments of the models and that support some of these implications.


This article investigates how financial development helps to reduce poverty directly through a distributional effect, beyond its indirect effect through economic growth. The results obtained with data for a sample of developing countries from 1966 through 2000 suggest that the poor benefit from the ability of the banking system to facilitate transactions and provide savings opportunities, but to some extent fail to reap the benefit from greater availability of credit. The authors also find that financial development is accompanied by financial instability. Despite these findings, this study concludes that the benefits of financial development for the poor outweigh the cost.


This paper surveys the growing literature on payments. The authors begin by presenting a model that illustrates the function of payments and how this may be implemented through various arrangements. In addition, they show how the basic models of payments have been used to address a variety of microeconomic and macroeconomic policy issues. The authors discuss the links between payments economics and other fields, including monetary theory, corporate finance, and industrial organization. They conclude with an overview of the empirical literature and directions for future research.


This paper studies the design and implementation of the so-called Wholesale Payment System, electronic networks that are used for sending large amounts of money among banks. Several questions were studied, including: What is the best design for a wholesale payments system? Should it settle on a net or a real-time gross basis? This article presents a framework for analyzing these and other questions.


This paper investigates the reason for almost universal failure to implement and sustain financial management information systems (FMISs) in developing countries, which are popular information systems to computerize government accounting and payment operations. It starts with a review of the implementation of these projects and then analyzes problems in its application in the context of
developing economies to identify key factors to explain why FMIS projects have been so problematic. Based on the identified negative factors, suggestions for addressing them are offered in the hope of improving success rates.


This paper highlights the importance of mobile phone banking to Kenya’s economy and especially in regard to its success in extending the financial services frontier. The note also discusses policy lessons emanating from the success of mobile banking in Kenya including a conducive environment for business, private sector-public dialogue in the formulation of policy, prudent oversight that keeps abreast of innovations, and removal of barriers to entry into both mobile telephone and banking services.


This paper theoretically analyzes economies in which individuals specialize in consumption and production and meet randomly over time in a way that implies that trade must be bilateral in a barter economy. In this model, some goods emerge endogenously as media of exchange, or commodity money, depending both on their intrinsic properties and on extrinsic beliefs. The authors find that equilibria are not generally Pareto optimal and that introducing fiat currency into a commodity money economy may unambiguously improve welfare. Velocity, acceptability, and liquidity are discussed.


This paper develops a framework for considering the design of regulation for mobile banking. Since it lies at the interface between financial services and telecommunication providers, mobile banking also raises competition. In addition, the authors discuss policy and interoperability issues. Finally, this paper concludes by presenting important lessons for the design of financial regulation, more generally in developed as well as developing economies.


The authors explain why central counterparties (CCPs) emerged historically. With standardized contracts, it is optimal to insure counterparty risk by clearing those contracts through a CCP that uses novation and mutualization. As netting is not essential for these services, it does not explain why CCPs exist. In over-the-counter markets, as contracts are customized and not fungible, a CCP cannot fully guarantee contract performance. Still, a CCP can help: As bargaining leads to an inefficient allocation of default risk relative to the gains from customization, a transfer scheme is needed. A CCP can implement it by offering partial insurance for customized contracts.

This paper illustrates different payment methods, suggests some of the theoretical advantages and limitations of each, and provides a framework for evaluating distinct alternatives. The authors conclude that no single set of incentives will address the multiple objectives of purchasers and providers. As a result, purchasers and policymakers must understand and address policy objectives explicitly.


This article identifies the strategies and innovations that help the poor to have access to markets. For example, private actors - including for-profit and not-for-profit entities, often in partnership with the public sector - have been able to mitigate some of the constraints that poor people face. This is achieved through innovations that have helped to make markets more inclusive for them, not in gaining access, but also participating in ways that enhance their economic empowerment and human development.


Payments are increasingly being made with payment cards despite the fact that the cost of clearing a card payment usually exceeds the cost of transferring cash. This paper examines this puzzle using monetary theory. The authors consider the design of an optimal card-based payment system when cash is available as an alternative means of payment. Their findings suggest that a feature akin to the controversial “no-surcharge rule” may be necessary to ensure the viability of the card payment system. This rule states that merchants cannot charge a customer who pays by card more than a customer who pays by cash.


Using a matching model with no commitment and no enforcement, this paper shows that the nature of agents' production determines whether they should issue money. In the model, some agents can produce goods, whereas others are unproductive. All agents can produce at a cost a distinguishable, intrinsically useless but durable good: “money”. Productive agents produce red notes whereas unproductive agents produce green notes. The author finds that green notes are the most efficient means of exchange, as they implement more allocations than red notes and at a lower cost. The conclusion is that unproductive agents should issue money.


Many of the world's poorest and most fragile states are joining the ranks of oil and gas producers. These countries face critical policy questions over managing and spending this new revenue in a way that is beneficial to their populations. At the same time, a growing number of developing countries have initiated cash transfers as a response to poverty and these programs are showing some impressive results. This paper proposes marrying these two trends in a new policy prescription: countries seeking to manage new resource wealth should consider distributing income directly to citizens in the form of cash transfers. According to the author, cash transfers may also mitigate the corrosive impact of oil on governance.

This paper intends to show Ghana as a successful country. The authors use six variables—peace and stability, democracy and governance, control of corruption, macroeconomic management, poverty reduction, and signs of an emerging social contract—to suggest the country’s political and economic progress. In addition, they also show concerns about the known link between natural resources and negative outcomes such as conflict, authoritarianism, high corruption, etc. This paper draws lessons from the experiences of Norway, Botswana, Alaska, Chad, and Nigeria to consider Ghana’s policy options. The authors propose a direct cash distribution policy of oil revenues to citizens. They conclude that Ghana is an ideal country to take advantage of this option, and confront some of the common objections to this approach. Finally, they suggest that new technology such as biometric ID cards or private mobile phone networks could be utilized to implement the scheme.


This paper reviews the various ways in which the financial sector could impact economic growth and development and, in the process, makes reference to some theoretical foundations. The author presents the structure and characteristics of financial systems in Africa. He also shows that several characteristics influence the impact of financial services on economic growth and development, including weak regulatory environments, weak legal systems, bank-dominated financial systems, and wide interest rate spreads, among others. Finally, the author presents recommendations for policymakers, who are challenged to enact policies that mitigate the distortionary effects of these traits in order to promote economic growth and development.


This book analyzes the rich experience of South Africa and Uganda in their quest for universal technology access (mobile phones, internet, etc.), with particular emphasis on the role of shared access centers (public telephones, cybercafés, telecenters, business centers, etc.) and the factors that affect their performance. The author examines the relationship between shared access centers, the goal of universal access, and strategies for sustainable development. From the analysis, a number of recommendations are set forth for policymakers, donor agencies, and intermediaries (such as national NGOs, networks, and associations) which can be used to support and strengthen shared access to information and communication technology (ICT) centers and to increase their developmental impact.


This note reviews the state of government-to-people payment systems (G2P) payments in the world. The authors are particularly interested in showing how at least 170 million poor people have become G2P recipients. In addition, they show by using Colombia as an example in which several types of G2P payments actually reach the poor. The authors also find that 45 percent of G2P programs launched in the past 10 years use an electronic payment mechanism, which creates a foundation on
which a financially inclusive account can be offered. Finally, the paper discusses policy recommendations for governments, the financial industry, and donors.


This paper investigates the extent to which the expansion of mobile telephony is likely to lead to the expansion of access to appropriate financial services in developing countries, especially Africa. To do so, the author investigates emerging models and trajectories of development in m-payments and m-banking through interviews with emerging African providers and the use of secondary material. This research assesses the policy and regulatory elements of an enabling environment for this sector based in part on the analysis of circumstances in two pilot African countries, Kenya and South Africa.


Data analysis shows that the distribution of money across households is much more similar to the distribution of financial assets than to that of consumption levels. This is a puzzle for theories which directly link money demand to consumption. This paper shows that the joint distribution of money and financial assets can be explained in a heterogeneous agent model where both a cash-in-advance constraint and financial adjustment costs, as in the Baumol-Tobin literature, are introduced. Studying each friction in turn, the author finds that the financial friction explains 85% of total money demand.


This document explains the importance of remittances for development. The author emphasizes that these should not be taxed or directed to specific development uses. Instead, the development community should make remittance services cheaper and more convenient, and indirectly leverage these flows to improve financial access of migrants, their beneficiaries, and the financial intermediaries in the origin countries.


The purpose of this paper is to test the hypothesis that, given the level of financial development of an economy, e-finance technologies enhance economic growth. Typically, these technologies lower processing costs for suppliers and information costs for consumers, which in turn increase availability of finance for low-income borrowers of remote areas. The authors use a cross-country data set of 61 countries averaged over 13 years (1990-2002). Results suggest that better connectivity (for example, by increasing the number of mobile phone subscribers and the number of internet users) significantly enhances financial depth.


This paper explains why payment card networks charge fees that are proportional to the transaction values instead of charging fixed per-transaction fees. The authors show that, when card networks and
merchants both have market power, card networks earn higher profits by charging proportional fees. It is also shown that competition among merchants reduces card networks' gains from using proportional fees relative to fixed per-transaction fees. Merchants are found to earn lower profits under proportional fees, whereas consumer utility and social welfare are higher. These welfare results are then evaluated with respect to the current regulatory policy debates.


The paper investigates the reasons why person-to-person electronic funds transfers are still not very common in the United States, as compared to practices in many other countries. The paper also describes recent enhancements to online and mobile banking which provide account holders with low-cost interfaces to manage person-to-person electronic funds transfers via an automated clearing house. In addition, the paper theoretically characterizes the critical mass levels needed for payment instruments to become widely adopted.


This paper studies a competitive dynamic financial model subject to a transient selling pressure when market makers face a capacity constraint on the number of trades per unit of time with outside investors. The authors then show that profit-maximizing market makers provide liquidity in order to manage their trading capacity constraint optimally over time. When the trading capacity constraint binds, the bid–ask spread is strictly positive, widening and narrowing as market makers build up and unwind their inventories. Finally, the authors conclude that since the equilibrium asset allocation is constrained Pareto-optimal, the time variations in bid–ask spread is not a symptom of inefficient liquidity provision.


This paper studies optimal dynamic liquidity provision in a theoretical market setting with large and temporary selling pressure and order-execution delays. The author shows that competitive market makers offer the socially optimal amount of liquidity, provided they have access to sufficient capital. Finally, if raising capital is costly, then a lenient central bank lending policy rule during financial disruptions is recommended.


The paper examines the practices, opportunities and challenges of e-banking services in Ethiopia. The Ethiopian banking system is one of the most underdeveloped in the world. As in many other non-developed countries, cash is still the most dominant medium of exchange and electronic-banking is not well known, let alone used for transacting banking business. The author finds that all banks in Ethiopia except Dashen Bank are too late to move with technological advancement and they should clearly chart out the time schedule for their integration and technological advancement.