POLICY STUDIES

Retail Payments Innovations and the Banking Industry

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Emerging Payments Occasional Papers Series
2003-1A

FEDERAL RESERVE BANK
OF CHICAGO

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Summary

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Abstract

This study examines the impact of new payments technologies on the value of the banking industry. Chakravorti and Kobor (2003) find that payment providers offer new payments products most often as a bundled service offering in order to retain their customers and with the expectation of increased long-term profits. Rice and Stanton (2003) estimate that payments revenue accounts for approximately 16 percent of operating revenue. According to Rice (2003), payments activities affect the value of the banking franchise and estimates of profit efficiency. A cross-section of bankers surveyed by Kellogg (2003) indicates four key concerns related to emerging payments technologies: changing delivery channels and safeguards, fraud, vendor oversight and operational risk measurement and reporting. Lemieux (2003) identifies network vulnerabilities as having resiliency implications. These five studies highlight how income from payments activities is becoming a significant portion of banks' revenue and show that the lines between banks and nonbanks are becoming increasingly blurred.

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RETAIL PAYMENTS INNOVATIONS AND THE BANKING INDUSTRY

SUMMARY

"By 2004 banks will recognize that they are losing the race for electronic payments, and by 2006 they will constitute less than 50 percent of electronic payment services." [1]

Today consumers, businesses and governments have alternatives to cash and checks for making payments. Credit cards, debit cards, stored value cards, and ACH debits are all increasingly common methods of payment. The Nilson Report (2002) predicts that by 2010 electronic payments and debit cards will have made the largest increases, accounting for a total of nearly one fourth of all consumer transactions (approximately 37 billion), up from nine percent in 2001 (13 billion)[2]. In addition, the Internet has helped spur the creation and adoption of payment add-ons like account aggregation and electronic bill payment and presentment (EBPP).

Technological advances in payments are important for two reasons. First, the relative stability of banking technology has made it feasible for regulations to be written in technology dependent ways rather than focusing on key conceptual guidelines that should apply regardless of the technology. Recent changes in technology can make existing regulations just as obsolete as the technology being replaced. A case in point is consumer regulations. Protections that apply to one payment vehicle (i.e., credit cards) do not necessarily apply to another payment vehicle (i.e., debit cards). When a regulation is written in a narrowly technology-dependent way, then a new technology makes the old

[1] Susan Cournoyer, et al. pg 1.

[2] Electronic payments in this survey include remote payments made using a telephone or computer and pre-authorized payments handled electronically "end-to-end" through an automated clearing house.

regulation vacuous. For example, check protections regarding the drawer's signature don't apply to an on-line payment because there is no signature.

A second reason technological advances in payments are important is that these new technologies present new risks and new opportunities to manage risk (Kuttner and McAndrews, 2001). One example is outsourcing. Under the old regime, core business was not outsourced. Today it is possible to outsource everything from back office processing to loan origination and servicing. Previously the banking client could easily see the risk controls used by the vendor. Due to the nature of services outsourced, such as the sophisticated systems required for some payments technologies, the client may be unable to provide the same oversight of vendors' performance that was the norm earlier.

Bank regulation applies to a portfolio of risks, some of which are systemic, and others, which are not. The rationale for regulating banking separately, as opposed to the regulatory regime applied to commercial businesses, is the systemic nature of risk[3]. To be considered systemic the risk must not only be contagious but large in relation to a bank's capital. Outsourcing may be one example where previously the risks were noncontagious and small under the assumption that the natural tendency of the banking industry was to retain systemic risks and outsource nonsystemic risks. On the other hand, if risks that are currently being outsourced are the very ones that previously provided the core rationale for bank regulation, then regulators' charters should be extended to these new providers to follow systemic risks.[4] Herring and Santomero (1999) identify the banks' role as custodians of the payment system as one of the key activities banks perform that provide

[3] Herring and Santomero define systemic risk as a "sudden, unanticipated event that would damage the financial system to such an extent that economic activity in the wider economy would suffer." (pg 4)
[4] Herring and Santomero identify systemic risk as a key reason for the necessity of bank regulation. They explain banks' susceptibility to systemic risk as follows, "Banks' central role as providers of credit, as

the core rationale for bank regulation. Outsourcing of components of this role is increasing.

Another issue that regulators argue provides justification for their involvement is resiliency. Risks in the aggregate may not be large, but may still satisfy the requirement to be contagious. Therefore, they would not be considered systemic risks. Technological changes can influence competitive pressures by increasing economies of scale and scope. For example, these changes can spur the consolidation of vendors doing functions that used to be performed by a large number of banks. In this case, the risk becomes large relative to the banks and is now highly correlated across the banks. Therefore, increased concentration of outsourcers could also provide a rationale for extending regulation.

These are just a few examples of how advances in payments technologies raise basic questions about the nature of risk and regulation in banking. This five-part study examines the impact these changes are having on the value of the banking industry from a number of different angles. The first paper by Chakravorti and Kobor (2003) investigates why organizations invest in payments innovations. The second paper by Rice and Stanton (2003) estimates the importance of payments-driven revenue to banks. The third paper by Rice (2003) looks at the impact of the provision of payments services on efficiency and franchise value. The fourth paper by Kellogg (2003) surveys banks of various sizes on the effect that changes in payments are having on banks' operational risk. The final paper by Lemieux (2003) explores policy implications.

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repositories of liquidity and as custodians of the payment system gives them a balance sheet structure that is uniquely vulnerable to systemic risk." (pg 27)

Why Invest in Payments Innovations?

Chakravorti and Kobor (2003) find that different types of organizations have different motivations and strategies when it comes to offering payment services. Small banks gravitate toward satisfying niche customers' demands for payments services and are not usually payment innovators. Generally, outsourcing provides a means for small banks to access new technologies at relatively low cost, as well as, potentially lowering processing costs. Large banks have focused on leveraging their diverse customer base and breadth of products in their payments strategies. However, respondents report that organization by a line of business hampers the realization of synergies. Large banks may support nonbank innovators rather than undertaking in-house development. Some of the largest banks opt to undertake acquisitions to capitalize on the economies of scale the new payments technologies yield for payments processing (e.g. check, ACH, wire, loan and credit card processing). Acquisitions also reduce investment risk when acquiring a proven technology. Large processors can provide commoditized services at low per unit costs. Currently there are examples of both bank and nonbank data processors. Some respondents indicate that spinning off these activities helps attract investment and alleviates some banking clients' concerns about using another bank as their vendor. Large data processors are working to leverage their extensive information networks to provide new payments services.

Nonbank innovators have been most successful targeting niche markets. Many of their successes result from developing payments mechanisms that leverage existing payment networks (e.g. P2P and wireless payments). Joint ventures generally leverage existing financial infrastructure and brand recognition distributing costs and limiting risk

exposure of the members. Cross-industry joint ventures between financial and non-financial institutions have been successful primarily because members' strengths can be leveraged. Anti-trust issues, however, have been a concern of some respondents involved in joint ventures with similar institutions. In some cases, industry consortia are used to reduce the cost and risk associated with bringing a product to market.

Generalizing across bank and nonbank institutions, Chakravorti and Kobor (2003) make the following observations. Investment in payments technology is most often characterized as a customer retention tool, even when the payment functionality is part of a bundled service offering. Cost savings may be hard to realize in the near term if providers must simultaneously offer old and new systems. Successful innovations are most often those that target the needs of a particular market niche. To date, most successful payment innovations leverage connectivity among participants using existing payment networks. Economies of scale provided by some new payments technologies increase the importance of outsourcing. Payment innovations may open market segments that were previously either unreachable or unprofitable. Competitors entering the market after the first wave of acceptance of an innovation seek to extend the technology or augment it. This creates a process of continuous change.

Estimating the Volume of Payments-Driven Revenues

Rice and Stanton (2003) find, using 2001 data, that payments-driven revenue accounts for approximately 16 percent of operating revenues for the top 40 BHCs. Including only service charges on deposit accounts underestimates the value of payments activities, while including broad categories of activities that are only partly payments related overstates payments-driven revenue. These authors find that a prior estimate of the

volume of payments-driven revenue was overstated by aggregating these activities with other closely related activities.

Payments revenues also vary significantly according to the business strategy of the organization. Large regional banks had one of the highest proportions of payments revenue (21 percent), a reflection of their focus on providing traditional banking services. At global processing banks, which handle the cross-border safeguarding, settlement, and reporting of clients' securities and cash on a worldwide basis, the percentage varies from 17 to 21 percent of operating revenue depending on how payments revenues are defined. Conglomerates that engage in a diverse array of financial services had payments revenues equal to 15 percent of operating revenue. The results were counterintuitive, but persuasive, for credit card banks. These institutions actually earn less revenue from payments functions because a great portion of their revenues can be attributed to securitization of credit card receivables, and credit functions (i.e. interest on credit cards).

The Importance of Payments-Driven Revenues to Franchise Value and Estimations of Bank Performance

Rice (2003) examines several questions related to the value that payment activities add to the banking industry. First, this author examines how the production of payment services impacts the franchise value of the banks. Next, Rice explores whether analysts are incorrectly measuring the performance of the banking sector and failing to realize the full importance of payments-driven revenues to banks. In initial empirical analysis, Rice finds limited evidence to suggest that higher payments-driven revenues are associated with higher franchise value. This author also finds that estimates of productive efficiency change dramatically for a small number of banks heavily involved in payments services. Estimated profit efficiency increases an average of 20 percent when payments revenues are

included as outputs. These estimates also vary by business strategy. Estimates of efficiency for global processors increase by about 50 percent when payments-driven revenues are included in the production function. Rice (2003) finds evidence to suggest that traditional efficiency estimates that exclude nontraditional bank activities inaccurately measure the relative performance of some types of BHCs. This author infers from these results that estimation of efficiency must take into account the different mix of traditional and nontraditional activities in which banks engage.

All three pieces of evidence: significance of payments revenue stream, franchise value, and efficiency point to the difficulty of obtaining accurate information on the value of this activity. Better data would allow management to make more informed decisions on the value of emphasizing this activity in their business strategy.

Emerging Payments Activities: How Do They Impact Banks' Operational Risk?

A cross-section of bankers surveyed by Kellogg (2003) identifies four key concerns related to emerging payments technologies: changing delivery channels and safeguards, fraud, vendor oversight, and operational risk measurement and reporting. The concern about delivery channels focuses on the move to electronic payments, either through the internet or ACH. Some of the safeguards customers have come to rely on with paper-based payments do not exist for electronic channels. Increasingly, commercial customers are demanding electronic payments. This means larger value payments will be moving over these higher risk channels. With regard to fraud, the sample reports that actual losses have stabilized, but losses in commercial accounts have increased. Adding to their concern is the increase in the number of fraud attempts. All respondents indicate a growing

dependence on outsourcing. Large banks[5] are challenged to monitor their processing vendors on an ongoing basis, particularly for compliance with new regulations like the information privacy requirements in the Gramm-Leach-Bliley Act.

Responses indicate that while operational risk measures and controls have a business unit focus, reporting collective operational risk for payments activities is fragmented by business line. Comprehensive risk measurement is important for pricing decisions and for management to understand the true cost of the activity. Smaller institutions indicate that tools available on their core processing systems to monitor the collective operational risk across payment systems are difficult to use, at best, and lacking, at worst. Even the larger banks have difficulty aggregating the risk of payments activities across business lines. Banks rely on Risk Committees and self-assessments by the business lines to mitigate this risk. Many in the sample are launching initiatives to improve their comprehensive risk reporting. Lack of comprehensive risk reporting will thwart efforts to develop synergies for new payments products across business lines.

Implications for Bank Supervision and Policymakers

As payments technology continues to evolve, Lemieux (2003) identifies network vulnerabilities as a particular concern. This risk is the one issue that may have resiliency implications. Recent events have demonstrated the contagious nature of network vulnerabilities. Because of the network linkages that exist, these vulnerabilities can jump from the banking sector to other sectors of the economy. The weakest link in the network can expose all other participants to risk. This risk can cause significant losses and again, these are not confined to the banking sector. Finally, consolidation of outsourcers and the

[5] Defined as less than $15 billion in total assets.

increasing use of foreign firms with weaker internal controls to perform outsourced functions also present resiliency concerns. However, the existence of multiple retail payments options, the absence of large losses as a result of network vulnerabilities in retail payments systems, the availability of alternative IT vendors, and the ability of technological solutions to limit the risk, all serve to reduce concerns.

To mitigate this risk bank supervisors have four primary tools: chartering requirements, capital regulation, supervision and disclosure. Some of the recommendations to limit the systemic nature of this risk include:

- Standardizing the formatting of payments information flows,
- Monitoring information on market structure and condition,
- Encouraging market participants to build-in redundancy and scalability,
- Identifying rules that are ineffective because of changes in technology,
- Improving disclosure/education of differences among retail payments options for consumers and businesses,
- Increasing information on vendor security practices, and
- Requiring disclosure of key risk measures.

While the risks posed by network vulnerabilities are being addressed in the current regulatory framework, advances in technology, concentration in market participants and linkages among diverse participants could cause the risks to change rapidly. Close monitoring is warranted.

Conclusions

Together these studies investigate the importance of payments and the impact of emerging payments technologies on the banking industry. These studies show that the

lines between banks and nonbanks are becoming blurred, particularly in the area of payments. However, rather than being competitive, the environment is becoming increasingly symbiotic. Banks look to acquire technology from nonbank innovators rather than developing it in-house. Nonbanks look to banks not only for their access to the settlement system, but also to market the new products by leveraging banks' customer base. Technology is also bringing increasing economies of scale to payments processing, which is spurring consolidation of payments processors.

Currently, income from payments activities is a significant portion of banks' revenue. However, the relative importance has been stable over the last six years. There are several issues that may be hindering banks' efforts in this area. Key among them is consolidated reporting. In reviewing annual reports and regulatory data, it is difficult to develop aggregate estimates of the true value of payments activities. Bankers who were surveyed pointed to the same difficulty. Without clear information on the total income and risk attributable to payments activities it will be difficult for management to measure rate of return on the investment, accurately price the product and allocate appropriate capital support. Other issues that hinder bank adoption of emerging payments are concerns about customer safeguards available for new delivery channels, fraud controls and the ability to provide effective oversight of payments vendors in increasingly concentrated markets. Finally, as technology increases the ties among banks and nonbanks, resiliency concerns for the economy, such as network vulnerabilities, should not be ignored. More work is needed to better understand systemic risk implications.

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