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**MOVING MONEY – REDESIGNING THE GLOBAL
PAYMENTS SYSTEM 1969–99**

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Foreword

The *GloCoBank 1870–2000 Working Papers* series reflects the work in progress of the researchers associated with the ERC Horizon 2020 funded project Global Correspondent Banking 1870–2000 (GloCoBank) and of others whose papers directly address GloCoBank research themes. The papers are peer reviewed by GloCoBank and associated researchers and seek to identify and analyse the international network of correspondent banking relationships across the 20th century.

The views expressed in this working paper, and all errors and omissions, should be regarded as those solely of the authors and are not necessarily the views of the affiliated institutions.

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Abstract

The cross-border payments system is the fundamental plumbing of globalisation, allowing day-to-day movement of money across borders. Although the 20th century evolution of the system has not yet attracted much attention from historians, it has features that make historical analysis particularly apt. This paper addresses two fundamental questions: how have cross-border payments systems responded to shocks, globalisation and innovation over the long term? how was the balance between private and public interests negotiated? It draws on archival records from banks and central banks in the USA, UK and Europe to take the long view of the evolution of the underlying plumbing of the international economic system, with a particular focus on the origins of two institutions that are still with us: SWIFT and CLS – and the tensions between public and private sector interests. The historical record emphasises the participation of the public sector in the design as well as the rescue of payments systems.

Keywords

Payments systems correspondent banking, cross-border payments, Herstatt risk, SWIFT, CLS, international banking

The cross-border payments system is the fundamental plumbing of globalisation, allowing day-to-day movement of money across borders.¹ Although the 20th century evolution of the system has not yet attracted much attention from historians, it has features that make historical analysis particularly apt. First, the ability to make rapid and secure payments across borders is a *public good* that is provided by the *private* sector, but the framework also poses systemic risks that may require public sector support in times of crisis.² It is therefore part of the broader contestation between regulators/supervisors and financial markets, which has attracted considerable historical attention. A second key feature of the evolution of global payments is that despite dramatic innovations in communications and technology, final settlement continues to rely on a framework designed in the 19th century, through banks connected bilaterally through formal correspondent banking relationships. It thus demonstrates characteristics of institutional and functional persistence embedded in the process of transformation and modernisation associated with globalisation.

A combination of financial innovation and technological innovation in the 1960s inspired fresh initiatives to reform the architecture of the payments system, culminating in the launch of new cross-border payments infrastructure in the 1970s (CHIPS and SWIFT). In the midst of the design of these systems, the Herstatt Bank collapse in 1974 exposed FX settlement risk, but it took almost 30 years for banks to develop an institutional response (despite further shocks such as the collapse of BCCI in 1991). CLS Bank was finally founded in 1997 to provide continuous cross-border netting but it only began to operate in 2002, and then for a limited range of currencies and banks. This paper addresses two fundamental questions: how have cross-border payments systems responded to shocks, globalisation and innovation over the long term? how was the balance between private and public interests negotiated? It draws on archival records from banks and central banks in the USA, UK and Europe to take the long view of the evolution of the underlying plumbing of the international economic system, with a particular focus on the origins of two institutions that are still with us: SWIFT and CLS – and

¹ Research was funded by the ‘Global Correspondent Banking 1870–2000’ project which has received funding from the European Research Council (ERC) under the European Union’s Horizon 2020 research and innovation programme (Grant Agreement No 883758). We thank also the Bank of England Archives for access to their records and the support of the Houblon-Norman Research Fellowship.

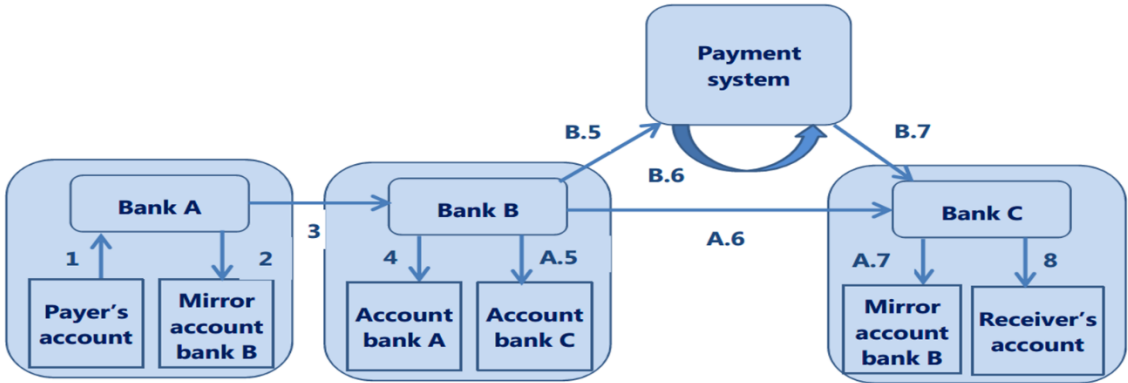
² The 19th century payments system has attracted historical interest, particularly through the origins and development of international bills of exchange and the business of acceptance houses in London. See, e.g. Accominotti et al (2021), O’Sullivan (2018), Meissner et al (forthcoming), Kahn et al (2014).

the tensions between public and private sector interests. The historical record emphasises the participation of the public sector in the design as well as the rescue of payments systems.

Figure 1 offers a stylised view of the mechanics of correspondent banking. An importer, for example, instructs their bank to pay an exporter in another country. The importer’s bank then instructs its correspondent in that country to make the payment to the exporter’s bank and all the banks adjust their accounts to settle the payment. As shown in Figure 1, these instructions may go through a payments system that acts as a clearing house rather than directly between banks. Time introduces the key element of risk in the system. Payments are likely to go out before funds are finally received by the exporter’s bank and this introduces market risk (in case of exchange rate changes) and counterparty risk (in case the payer’s bank fails and the funds are not forthcoming). Because of the inter-connectedness of interbank accounts and the large volume and value of transactions which may be dependent on each other, this also introduces systemic risk. Gross pre-funding or waiting until all accounts have been finally reconciled is costly for customers, so banks tended to take on these remote risks in return for lucrative customer fees.

Figure 1

Payments settled via correspondent banking



- 1. Debiting of payer’s account with bank A
 - 2. Crediting of bank B’s mirror account with bank A, which is kept for accounting purposes
 - 3. Payment message from bank A to bank B via telecommunication network
 - 4. Debiting of bank A’s account with bank B (loro account)
- | | |
|--|---|
| <p>A. Use correspondent bank only</p> <ul style="list-style-type: none"> 5. Crediting of bank C’s account with bank B 6. Payment message from bank B to bank C via telecommunication network 7. Debiting of bank’s B mirror account with bank C, which is kept for accounting purposes 8. Crediting of receiver’s account with bank C | <p>B. Involvement of payment system</p> <ul style="list-style-type: none"> 5. Payment message from bank B to payment system 6. Settlement via payment system 7. Payment message from payment system to bank C 8. Crediting of receiver’s account with bank C |
|--|---|

Source: ECB, *Ninth survey on correspondent banking in euro*, 2015, adapted from Danmarks Nationalbank, *Payment systems in Denmark*, 2005.

Source: CPMI 2016

This system of inter-connected bank accounts operated relatively unchanged from the 18th century to the 20th century, through a global network of banks and agents using bills of exchange and (from the mid-19th century) with communications via the telegraph. This paper focuses on the period of major transformation in global payments when the entire structure of the system was reconsidered and alternative options debated. During the 1960s and 1970s, business became increasingly international and bankers devised various strategies to follow their customers and pre-empt competitors in the wake of the erosion of effective exchange controls, and with the prospect of greater financial integration in Western Europe. The emergence and rapid growth of the Eurodollar market in the City of London from the end of the 1950s transformed its historic role, where sterling dominated, to becoming the host for the world's largest offshore dollar market (Burn 2006, Schenk 1998, Altamura 2017). These developments had profound effects on the global payments system, which was growing rapidly both in scale and geographic scope.

While the nascent globalisation created opportunities for banks and their customers, the integration of global markets also created fresh supervisory challenges for public authorities. International banking squeezed out of the national boundaries set by Bretton Woods exchange controls and evaded the national supervisory horizons of central banks. Cross-border systemic risk was starkly revealed in the 1974 Herstatt crisis but coordination problems made reducing these risks challenging. G10 central bank governors called for an 'early warning system' to prevent another similar crisis and brought national supervisors together in the Basel Committee. The business of the committee, however, was diverted from early warning to mapping out the national supervisory responsibilities of branches and subsidiaries. Central banks did not want to dilute sovereignty over their national banking systems and no national authority was willing to be the lender of last resort to global payments. As George Blunden (head of Bank of England supervision and first chair of the Basel Committee) remarked in 1977:

The banking system of a country is central to the management and efficiency of its economy; its supervision will inevitably be a jealously guarded national prerogative. Its subordination to an international authority is a highly unlikely development, which would require a degree of political commitment which neither exists nor is conceivable in the foreseeable future.³

³ Speech by Blunden, *Bank of England Quarterly Bulletin*, 1977.

Nevertheless, if the global payments system crashed, there would need to be central bank support to recover it in the public interest, or commerce would collapse. Their hope was that the private sector's collective interest in prudence would ensure a stable and robust payments system, but the path was not smooth.

This paper engages with three inter-related literatures in economic and financial history. First, since the 1980s there has been sustained academic interest in bank internationalisation to put the contemporary era of globalisation into historical perspective.⁴ This literature extends from the histories of individual banks to broader surveys of the strategic choices made by banks globally or in particular regions, but has tended to focus on foreign branches and subsidiaries. Our evidence extends the scope to include correspondent bank networks as a vector of internationalisation and emphasises the impact of technological innovation on this process. Evidence on these forms of interbank relations specifically enhances understanding of the operations and activities of banking consortia and their role in building the payments architecture of globalisation (Ross 1998, Marois and Abdessemd 1996, Drach 2022).

Secondly, the optimal regulatory and supervisory structure for financial systems has been a perennial area of discussion, which was given added impetus from the apparent failure to contain the risks that underlay the Great Financial Crisis of 2007. Information asymmetry and systemic risk creates a rationale for external prudential supervision of banking to defend the public good of financial stability from excessively risky behaviour by individual institutions. But the boundary between private sector and public sector control are contested. The complexity of financial transactions and the slippery nature of financial innovation, combined with the collective interest of sound institutions to avoid crisis, encourages models of self- or co-regulation. Calomiris and Haber (2014) have demonstrated how this trade-off has historically depended on a range of contingent political decisions in various jurisdictions. While the tensions between private profit and public interest in stability are complex at a national level,

⁴ Jones, Geoffrey. *Banks as Multinationals*. London: Routledge, 1990. Routledge. Geoffrey Jones, *British Multinational Banking, 1830-1990*, Oxford, Clarendon Press, 1993. Mulder, Arjen, and Westerhuis, Gerarda. "The Determinants of Bank Internationalisation in times of Financial Globalisation: Evidence from the World's Largest Banks, 1980-2007." *Business History* 57.1 (2015): 122-55. C. Buch, "Information and regulation: what drives the international activities of commercial banks?", *Journal of Money, Credit, and Banking*, 2003, 35/6, p. 851-870. H. Bonin *French banking and entrepreneurialism in China and Hong Kong*, Routledge, 2019. Barry Williams, "Positive theories of multinational banking: Eclectic theory versus internalisation theory", *Journal of Economic Surveys*, 1997, volume 112, n°1, p. 71-100. Christopher Kobrak, *Banking on Global Markets. Deutsche Bank and the United States, 1871 to the Present*, Cambridge, Cambridge University Press, 2008.

they are amplified at the international level. The coordination of cross-border prudential supervision has been challenging to achieve even in the EU where there is a single central bank. The difficulty of setting minimum prudential standards at the Basel Committee over the past 45 years is further testament to the challenges of market-based rules that can be effectively negotiated with the industry to which they apply (Goodhart 2011, Tsingou 2010). This paper addresses these issues in a fresh domain by examining the origins and early development of two parts of the architecture of the global payments system.

Thirdly, the paper's findings add to the extensive literature on the history of the governance of late twentieth century globalisation and the associated financialisation of the global economy (Altamura 2017, Clark and Wojcik 2007). This literature focuses mainly on trade and capital flows while this paper offers a novel perspective through the interbank payments system that supported globalisation.⁵ The most directly relevant contribution is the pathbreaking history of SWIFT by Scott and Zachariadis (2012, 2014) that draws on a range of archival sources and interviews, with a particular focus on business organisation, but with less historical attention to the wider institutional and market context. Their study provides an important foundation for the current paper.

Given recent frictions in the global payments system, there have been several recent studies, albeit not historical (e.g. Langdale 1986, Kahn and Roberds 2001, Brandl and Dieterich 2021).⁶ In 2015 the FSB launched an initiative to respond to the apparent decline in bilateral correspondent banking relationships due to the increased costs associated with anti-money laundering and anti-terrorist financing regulations (Rice et al 2020). In 2020 the G20 commissioned a road map to enhance the efficiency of the global payments system across four main pillars: speed, cost, access and transparency. This generated a broad work programme at central banks, the BIS and FSB culminating in a set of targets and KPIs agreed

⁵ For a review of the literature up to the 2008 financial crisis see I. Erturk and S. Solari, 'Banks as continuous reinvention' *New Political Economy* 12(3) 2007, pp. 369-388. On network contagion P. Glasserman and H.P. Young 'Contagion in financial networks' *Journal of Economic Literature* 54(3) 2016, pp. 779-831. For financial geography D. Haberly and D. Wojcik, *Sticky Power: global financial networks in the world economy*, Oxford University Press, 2022.

⁶ There is a limited literature specifically on correspondent banking for earlier periods, e.g. Laura Panza & David Merret, "Hidden in plain sight: Correspondent banking in the 1930s", *Business History*, 2019, volume 61, n° 8, p. 1300-1325. Simon Mollan, "International correspondent networks: Asian and British banks in the twentieth century", in Shizuya Nishimura, Toshio Suzuki, & Ranald Michie (eds.), *The Origins of International Banking in Asia. The Nineteenth and Twentieth Centuries*, Oxford, Oxford University Press, 2012, p. 217-229.

at the G20 in 2021 and 2022.⁷ In academic literature, Robinson et al (2021) focus on the importance of the distinct geographies of information and finance that are inherent in account-based settlement and how this leaves the current system vulnerable to geopolitical concerns. The financial sanctions against Russia and Belarus at the start of 2022 inspired Cipriani et al (2023) to investigate the longer term experience of sanctions with a brief account of the origins of SWIFT. Instead of a focus on the status quo, our paper addresses how the origins of the messaging system left settlement risk as an outstanding systemic problem that is still not fully resolved (Glowka and Nilsson 2022). Archival evidence shows that restricting the initial private sector ICT innovation narrowly to instructions rather than settlement reduced the incentive for central banks to be involved in the design, oversight or supervision of SWIFT. The Bank of England in particular, which was averse to taking responsibility for the foreign exchange market of which London was the global hub. How the payments architecture was built therefore had long-lasting implications for regulation and supervision and helps to explain why it remains opaque to public sector oversight. This contrasts with national payments systems, which are usually in public sector control (Kahn et al 2014).

Yates and Murphy (2019, p. 3–4) have remarked how national governments are ‘slow to take on the task’ of setting common standards for production and services, leaving the space to ‘relatively obscure committees of technical experts’. They explain this pattern partly by vested interests in maintaining multiple local standards or by the state’s unwillingness to impose top-down standards on a market unless there is an overwhelming public interest (e.g. safety standards). This challenge becomes even more complicated for cross-border standards. The evidence presented here shows that the governance of the global payments system was affected by several characteristics: it is a highly technical and complex system where expertise was vested mainly in the private sector and there was an ideological antipathy among some central bankers to engage in the oversight of global banking, although this view was by no means unanimous. The next section focuses on how the rapid internationalisation of the global economy affected the structure of correspondent banking in the 1960s and early 1970s. This is followed by fresh evidence on the origins and development of the standardised messaging system developed to respond to these new pressures.

⁷ <https://www.fsb.org/work-of-the-fsb/financial-innovation-and-structural-change/cross-border-payments/>. The first report and KPI estimates will be published in October 2023.

Internationalisation and the Payments System

The transformation of international banking in London arose from an accumulation of events. In the 1950s, European convertibility for current account transactions (December 1958) and new controls prohibiting the use of sterling for third party commerce (1957) prompted Midland Bank to make the initial steps that created the Eurodollar market in the City of London (Burn 2006, Schenk 1998). In the 1960s, as this market took off, bankers in the City reacted to repeated applications for Britain to join the EEC and the prospect of economic and monetary union among EEC members, by developing fresh internationalisation strategies both to retain market share at home, to confront the influx of foreign banks into London and to retain market share abroad. The prospect of lucrative foreign exchange business both from trading on a bank's own account as well as meeting the increased demands of commercial clients made such expansion urgent. Internationalisation took several forms including extending branch networks, buying up local banks or building cooperative strategic relationships with other European banks. Opening foreign branches was costly in terms of capital and staffing costs, and ultimately stretched the operational capacities of some banks beyond their limits, prompting a summer of trading losses, including at Lloyds Bank and Natwest in 1974 (Schenk 2014, 2017).⁸ In contrast, lower-fixed-cost strategic partnerships among leading European and American banks in the 1960s took several forms from loose Clubs to more formal joint-venture subsidiaries (Ross 1998, 2002, Drach 2022). Ultimately, this strategy also proved less fruitful than planned, but it was the foundation on which the standardisation of the European and global payments messaging system was built. To understand this innovation and the official response, it is important to turn first to the evolution of bank internationalisation and the role of correspondent banking.

The dramatic changes in international banking in the 1960s prompted several innovations that sought to reduce costs. In the USA, the New York Clearing House applied computer technology to standardise messages *and* to clear cross-border dollar payments among its members from 1970. The Clearing House Interbank Payments System (CHIPS) was a quick success for cross-border dollar settlement through New York correspondent banks and demonstrated the benefits (and also the challenges) of computerisation and standardisation of combined

⁸ Other losses and failures in other countries included the collapse of Franklin National Bank in the USA, Herstatt Bank in Germany and significant scandals and losses at Westdeutsche Landesbank Girozentrale, Banque de Bruxelles, Hambros Bank and Union Bank of Switzerland.

messaging and clearing (Schenk 2021).⁹ CHIPS also enhanced the position of members of the New York Clearing House who had privileged access to the system. In London, a similar system of electronic sterling clearing was first proposed by the British Bankers Association in 1972, which would eventually become CHAPS in 1984.¹⁰ At the same time, plans to streamline cross-border payments were also under consideration in Europe, but here implementation was prolonged by ICT challenges, and the complex cross-border and cross-currency nature of settlement. Instead of a combined clearing and messaging system, in 1977 only a common computerised messaging platform and standardised codes were introduced by the Society for Worldwide Interbank Financial Telecommunication (SWIFT).¹¹ The next section describes the emergence and development of this system with a particular focus on the link to cross-border European banking structures and the tension between public oversight and private control as the system was being designed.

Origins of SWIFT: Consolidating Private Interests

International standardisation was in vogue across several economic spheres including the International Standards Office (ISO) from 1946 and the United Nations Commission on International Trade Law (UNCITRAL) established at the end of 1966. As trade re-opened after the second world war, the transaction costs of multiple standards in production and international commerce grew, leading groups of enterprises, national governments and multilateral institutions to renew efforts to encourage and implement standardisation (Ballor 2022). In international payments, progress was slow. Telegraphic cables persisted as the main communications technology from the mid-19th century into the mid-20th century.¹² Priced by length of message, cables required elaborate code books to be shared confidentially between partners on each side of the transaction to be cost efficient and confidential. The labour costs of complex messaging and the risks of error made the system unwieldy as the volume of

⁹ CHIPS collected USD transactions throughout the day from terminals located in correspondent banks in New York and then netted and cleared payments at the end of each day for settlement.

¹⁰ Fedwire in the US is controlled by the Federal Reserve as an alternative to CHIPS although it was deliberately priced out of competition in the 1970s on instruction from Congress. Because of the public interest in its systemic stability, CHAPS was brought under the control of the Bank of England in 2017.

¹¹ Robinson et. al (2022) argue that the outcome of the separation between informational (messaging) and financial (settlement) geographies is important for understanding the infrastructure of global finance.

¹² The International Telecommunication Union grew out of a 19th century European initiative and became the UN's recognised agency. In 1956 two technical committees were merged to become the International Telegraph and Telephone Consultative Committee (CCITT), which set international standards.

transactions increased. From the 1960s Telex machines reduced staffing costs through greater automation and more continuous flows of information, but there was still considerable scope for reducing complexity and operational risk by standardising numerical codes for countries and bank names and summarising frequently repeated messages. Advances in computer technology allowed the potential for networking to replace bilateral communications and the payments system was an early adopter of this technology (Yates and Murphy 2019, p. 241).

SWIFT is still the dominant system for inter-bank cross-border payments messages. It was launched in 1977 as a non-profit cooperative owned by its member banks, and headquartered in Brussels. It is thus firmly in the private sector and invites only constrained oversight by central banks despite its importance to the architecture of globalisation. In its first years, SWIFT's physical infrastructure comprised a group of computing centres in key financial capitals (consolidator hubs) in Western Europe and New York, linked to member banks through local terminals. SWIFT leased capacity from national Postal, Telephone, Telegraph systems to provide an infrastructure to send instructions and messages from member banks' terminals to the consolidator hubs and back out to correspondent banks to adjust their accounts in response to customer orders. A key aspect was standardisation of bank names and amounts, which reduced the time required to key in these details. Settlement still took place by adjustment of bilateral correspondent accounts and there was no netting of payments; SWIFT merely increased the efficiency of instructions between banks. As in the case of cross-border clearing and settlement, there is a public interest in the stability and resilience of the messaging system that instructs correspondent banking transactions.¹³ Should the system fail, public authorities could be drawn in to support it.

Despite a growing historical literature, the origins and motivations for SWIFT remain somewhat murky. Several accounts highlight competition from American banks as the key motivation for European banks to develop their own solution. For Scott and Zachariadis (2012, 2014), the 'momentum that finally galvanized the adoption' of SWIFT was the launch of First National City Bank's (FNCB) own proprietary messaging standard. By 1973, FNCB had developed a system called MARTI (Machine Readable Telegraphic Input), which it

¹³ While not posing a systemic threat, in 2016 thieves stole \$81m from the Bank of Bangladesh by hacking the SWIFT system. The German firm Wirecard (that used SWIFT) is a recent example of payments-based fraud (Navaretti et al 2020).

implemented in 1975.¹⁴ Likewise, Rambure et al (2008, p 46–47) claim that it was ‘out of fear of a major competitive threat [that] a group of European banks launched the MSP {Message Switching Project}’.¹⁵ Cipriani et al (2023, p. 43) also credit FNCB’s MARTI for the founding of SWIFT in 1973. Robinson et al (2022, p. 7) call the FNCB competition ‘a crucial factor in driving the adoption of a collective solution’. But the European plans were already well advanced before FNCB’s initiative; 168 banks had already committed (and paid) to join SWIFT by 1973, including FNCB. Many other banks also had their own internal messaging systems and the US clearing house banks collectively used the CHIPS computer codes for dollar payments, but these did not challenge the need for a broader cross-border, cross-institutional solution. Instead of the FNCB initiative, this article emphasises the crucial role of groups of European banks formed in the 1960s in the adoption of SWIFT.

In 1969 at least three plans were underway in Europe to develop cross-border inter-bank communication networks. The basic designs were based on a hub and spoke structure of computer terminals in banks linked to central national message ‘consolidators’ through which messages would be distributed across borders.¹⁶ Although inspired within banking clubs or groups, they were not designed to be exclusive. The most influential proposal arose within the Societe Financiere Europeéenne (SFE), which was a consortium of Barclays Bank, Algemene, Banco del Lavoro, Bank of America, Banque Nationale de Paris (BNP) and Dresdner Bank. At the end of 1969 SFE’s members set up a Steering Group on cross-border payments representing all the countries represented in the consortium (UK, Germany, Italy, USA, France) *plus* Switzerland, Sweden and Belgium. Barclays and BNP wrote the feasibility report for an International Inter-Bank Message Switching System and circulated it to other banks both within and beyond the SFE for comment. Meanwhile Prince Bernhard of the Netherlands brought together another set of bankers in his Bildeberg Group to discuss inter-bank communications. A third computerised network for inter-bank communications was developed separately by Societe Generale de Banque (SGB, a member of EAC/EBIC). When the SFE proposal was under discussion, the SGB scheme was at an advanced stage and ready to

¹⁴ Scott, S. V. and Zachariadis, M. (2014, p. 30). See also Scott and M Zachariadis (2012). Cipriani et al (2023) p. 43 also credit Citibank’s MARTI for the founding of SWIFT in 1973.

¹⁵ D. Rambure and Nacamuli (2008) pp. 46-47.

¹⁶ Memo by P.J.V. Ashurst, 5 March 1971 enclosed in memo T.E.H.C. to Graham, ‘Automation Group – EAC, Minutes of the first meeting of the Automation Study Group held 10 February 1971. 0200/0838 Midland Bank Archives [hereafter MBA].

become operational to link Brussels, London and New York by 1971.¹⁷ These two competing banking group proposals created some friction.¹⁸ In the end, however, it was clear that multiple systems made no sense given the importance of network externalities to achieve the efficiency gains from a standardised messaging system, so other banks eventually fell behind the SFE proposal. The SFE plan was more inclusive and included more countries than SGB's scheme, albeit less well advanced.

The SFE plan was considered at a meeting in Frankfurt in December 1970. At this point, Dresdner Bank suggested that the group should set up a clearing system at the same time as the messaging but 'This proposal was declined by most of the participants; they prefer to consider both problems separately'.¹⁹ Dawans of SGB reported that his bank was studying not only message switching, but also a clearing system for the dollar (proposed by Bank Mees and Hope) and he also drew attention to an Association of International Bond Dealers study of a 'clearing system' for Eurobonds. A clearing system remained on the table during the ensuing years of negotiations about the messaging system. These early meeting also show that although the SFE scheme won out, other banks made important contributions since it was clear from the start that the participation of a wide range of banks was needed to make the scheme worthwhile. The scheme was not designed to be among a single banking group or club but much wider.

The breadth of participation in the planning is clear in the records of the banking club EBIC, which formed its Organisation/Automation Group in February 1971.²⁰ The group spent a lot of its time discussing the International Message Switching Project (pre-cursor to SWIFT) as they sought to develop a 'uniform EBIC policy' on the initiative.²¹ Five members of the EBIC

¹⁷ SGB was part of the EBIC consortium but did not develop its plan in cooperation with its partners – in the end this was likely a reason why it was not adopted over the more collective SFE scheme, although it was further advanced at the time.

¹⁸ Memo by P.J.V. Ashurst summarizing the February EBIC Automation Committee meeting. 5 March 1971. 0200/0838 MBA. In London the British Bankers Association set up a working party (in conjunction with IBRO: Interbank Research Organisation) chaired by G.F. Wheldon of the overseas branch of Midland Bank to consider the SFE initiative. 0200/0838 MBA.

¹⁹ Report of the meeting of the Automation Group held on 20 February 1971. Verhagen (EBIC) Behrendt (Deutsche Bank), Mecklenburg and Ashurst (Midland Bank), Streckstra and Jones (Amsterdamse-Rotterdamse Bank), Dawans and Franken (Societe Generale de Banque).

²⁰ EBIC was founded in 1963 and eventually included Amsterdamsche-Rotterdamsche Bank (Amro, Netherlands), Banca Commerciale Italiana (Italy), Creditanstalt-Bankverein (Austria), Deutsche Bank (Germany), Midland Bank (UK), Société Générale (France), Société Générale de Banque (Belgium).

²¹ European Advisory Committee (EAC), Memo by P.J.V. Ashurst 28 October 1974. MBA UK 0200/0749b. The EBIC Organisation/Automation Group met about four times per year.

Automation Group also sat on the SWIFT Board and additionally the Midland Bank representative and Group chair, P.J.V. Ashurst, joined the Advisory Committee ‘responsible for advising directly the SWIFT General Manager on policy and related matters’.²² He concluded in 1974 that ‘EBIC influence within the SWIFT Board is considerable and the interests of the Group and its constituent banks have not only been safeguarded but advanced’.²³ This paper draws on the records of Midland Bank as well as the Bank of England and Bank for International Settlements for fresh insights into the development of the system.

The challenge from US bank systems seems less prominent in this origin story than in Scott and Zachariadis’ widely cited evidence. SWIFT’s Board minutes first remarked on the Citibank’s competition in April 1975, noting that

During the last months First National City Bank, who is a member of SWIFT, has asked many of its correspondent banks to comply with the message standards of the Citycorp operated MARTI system in their mutual exchange of messages or to terminate their relationship. It seems that in some cases one of the arguments used to convince foreign banks to use the MARTI system has been that the SWIFT network is behind schedule.²⁴

A US banker on the board reassured his SWIFT colleagues that the MARTI system was destined to ‘expire in due course, that is as the implementation of SWIFT progresses’ and it was agreed that the SWIFT General Manager would write to Citibank ‘to state that no delay is foreseen in the start of [the] SWIFT network’.²⁵ Based on oral history, Scott and Zachariadis (2014) claim that ‘The MARTI ultimatum created a crisis in the international banking relationship’, but this is not reflected in the archival evidence. It seems that it was the slow pace of the development of SWIFT that prompted competition from MARTI rather than this US competition prompting innovation in Europe. It took another two years before the first SWIFT message was sent in May 1977. Even then, Societe Generale noted in July 1977 that:

²² European Advisory Committee (EAC), Memo by P.J.V. Ashurst 28 October 1974. MBA UK 0200/0749b. The Automation Group members that were also Directors of SWIFT were the representatives from Amsterdam-Rotterdam Bank, Credianstalt-Bankverien, Deutsche Bank, Societe Generale de Banque and Midland Bank. Four other members were not on the SWIFT Board.

²³ European Advisory Committee (EAC), Memo by P.J.V. Ashurst 28 October 1974. MBA UK 0200/0749b.

²⁴ Short Report of the 10th Board Meeting, SWIFT held in Brussels, 1 April 1975. Computer Experts Meetings 1 March 1975-30 April 1975. BISA 1/3A(4).

²⁵ Short Report of the 10th Board Meeting, SWIFT held in Brussels, 1 April 1975. Computer Experts Meetings 1 March 1975-30 April 1975. Prepared by the Banca d’Italia and circulated to the BIS Central Bank SWIFT Policy Group, it does not name the US bank present. BISA 1/3A(4).

There were difficulties in the programming. There were also hardware difficulties, Burroughs, which had undertaken to make the concentrator, did not keep its promise and there are currently rather delicate discussions between SWIFT and the manufacturer.²⁶

Nevertheless, the challenge from Citibank may have increased the vigour of the discussions outside the formal meetings and incentivised the recruitment of new banks to SWIFT as Scott and Zachariadis suggest. It is also important to recall that take-up of SWIFT was not universal. In October 1985 the BIS had shifted only about 40% of their traffic from Telex to SWIFT and the FRBNY had yet to get their SWIFT system operational.²⁷

Origins of SWIFT: Debating the Public Interest

Existing accounts of the origins of SWIFT focus almost exclusively on the initiative from the private sector, but there was also a public sector interest in the architecture of the global payments system as it evolved in the 1970s (Schenk 2023). There were two aspects: the systemic importance of a well-functioning, secure and stable international payments system, and the potential for an interaction between cross-border payments and domestic payments systems to disrupt the latter. But it took time for central bankers to surface these concerns. At the end of January 1969 the BIS convened its first meeting of experts on the use of computers in central banking.²⁸ At this point central bankers showed mixed enthusiasm for this new technology; the Banque Nationale Suisse had no computer and did not see that its operations would require one for the next five years, while the Bank of England used computing for a range of administrative purposes.²⁹ The Banca d'Italia used computers for the widest purposes including all large government receipts and payments as well as its own

²⁶ Minutes of the Comité d'Établissement, 07.07.1977, p. 39. Societe Generale archives. B241, nr. 456. It may be surprising that Burroughs won the contract for SWIFT since Barclays Bank had experienced long delays and underwhelming performance from the installation of its own Burroughs computers in its centre in Willesden in 1969-71. M. Ackrill and L. Hannah (2001) *Barclays: the business of banking 1690-1996*, Cambridge. Pp. 332-335.

²⁷ The Bank of England had not yet sent a SWIFT message to the BIS. The FRBNY had not yet moved to SWIFT at this date due to 'continuing major problems with their supplier'. Memo P.W. Allsop 1 November 1985. Memo T.J. Stremes, Departmental Services Division, 5 November 1985. Memo P.W. Allsop to Mr. Merry, 1 November 1985. Bank of England Archives [hereafter BoE] C6/49. In 1989 the Bank of England was still operating Telex alongside SWIFT. Telegram from Bank of England to Bank of India. BoE C6/49.

²⁸ Letter Gabriel Ferras to L.K. O'Brien, 3 December 1968. BoE 7A386/1. The initiative was not rushed – it was first discussed at the 17 November 1968 governors' meeting. Central banks represented from Belgium, Canada, FRBNY, Fed, Bank of England, Italy, Switzerland, Japan, Germany, Netherlands, Sweden, France.

²⁹ Appendix to report on meeting 27-28 January 1969. 25 February 1969. The Use of Computers at the Bank of England, circulated at the BIS meeting, filed 24 January 1969. BoE 7A386/1.

research.³⁰ A key obstacle to adopting the new technology was the ability to attract and retain skilled computing staff because of the relatively low salaries on offer at central banks compared to the private sector. Given the mixed levels of engagement and expertise in computerisation, it is not surprising that the initiative for computerised cross-border messaging came from the private sector. Nevertheless, this BIS group of experts became a main conduit between MSP/SWIFT and the BIS and governors of G10 central banks as they came to consider the computerisation of international payments.

More important than lack of expertise was the distinction that central bankers made between their interest in settlement of payments and their interest in the technicalities of the messaging network that instructed these payments to be made. The fall-out from the collapse of Herstatt Bank in 1974 exposed the cost of settlement failure due to counterparty risk rather than the operational risk of failed messaging.³¹ Nevertheless, they recognised that building a computerised interbank network could lead to changes in the way cross-border payments were settled. Until this impact was clarified, the G10 central bankers agreed to keep a watching brief. The Basel Committee, established in 1975 after the Herstatt crisis, focused on ensuring that there were no gaps in the supervision of the branches and subsidiaries of internationally active banks rather than making the payments system itself more resilient (Goodhart 2011). This neglect of systemic payments risks might seem justified by the restoration of the private sector controlled cross-border payments in New York (CHIPS) in the months after the Herstatt crisis, albeit with guidance from the Federal Reserve Bank of New York (Schenk 2021). Nevertheless, this benign neglect was contested and could be seen as a turning point in the design of the global payments system.

Even before the Herstatt crisis, a Vice President and Special Legal Adviser at FRBNY expressed concern and asked G10 central bank representatives meeting at the UN Commission International Trade Law [UNCITRAL] in December 1970 to seek a consensus that 'central banks interest themselves in proposals now being pursued by sectors of the commercial banking communities in several countries looking toward an international payments mechanism that

³⁰ Memo for Governor O'Brien on BIS meeting, 6 February 1969. BoE 7A386/1.

³¹ Before they collapsed, both Herstatt Bank and the Franklin National Bank, which also collapsed due to foreign exchange fraud, were founding members of SWIFT.

would be computerized on a multilateral basis'.³² At this point, he worried about the proliferation of incompatible standards and believed it was 'natural that the central banks should be the leaders' even if such a system was a long way off 'and may take a form now undreamed of'.³³ He tabled his paper, but he faced scepticism from, for example, the Bank of England.³⁴ Among the experts at the Bank of England, one expressed his view that the commercial banks could resolve any issues without central bank intervention. His colleague was more optimistic that there might be a role for central banks but left it up to the Bank of England's head of supervision, George Blunden.³⁵ As the central bank governing the world's largest foreign exchange market, the Bank of England's attitude was hugely influential.

In New York, by contrast, the FRBNY Special Legal Adviser continued to warn that 'one of the most serious problems facing international banking today is that of promoting and maintaining efficiency in effecting international transfers of funds'.³⁶ He suggested that the central banks at Basel set up 'possibly with commercial bank participation' an organisation to establish 'a computerized multilateral payments mechanism, harmonized standards for negotiable instruments'. He noted that European commercial banks were seeking to create their own message switching system for the international flow of payment orders 'as well as a clearing house type operations' without any central bank representation.³⁷ It is not clear what level of support he had at the FRBNY for his views that central banks should take the lead, which were firmly couched in personal terms, but he was not a lone voice.

At the start of 1971, the Banque de France was also concerned about the prospect of incompatible standards emerging and concluded that it was 'of some importance for the central banks to take up a position in this matter'.³⁸ Moreover, 'in view of the development of private projects, we believe that the central banks should rapidly come to an agreement to

³² Letter to Legal Adviser BIS, 23 October 1970. BoE 7A386-2. UNCITRAL efforts to standardise the international bill of exchange in cooperation with the International Chamber of Commerce. By this time CHIPS was already operational in New York..

³³ Ibid.

³⁴ Memo 31 March 1971 and 22 March 1971. BoE 7A386-2.

³⁵ Memo by D.C. Keys 31 March 1971 and Bennett 22 March 1971. BoE 7A386-2. Blunden later chaired the Basel Committee on international banking supervision and was a sceptic of formal cross-border monitoring of banks, preferring to rely on enhanced national responses.

³⁶ J.J. Clarke FRBNY, Establishment of an International Payments Mechanism and Related Matters, 26 February 1971. BoE 7A386-2.

³⁷ Ibid. At this point the scheme was known as 'Banks International Telecommunications System' (BITS) – a precursor to MSP.

³⁸ Banque de France paper 27 January 1971. BoE 7A386-2.

set up a permanent body to study the automated transmission of data concerning international payments'.³⁹ The National Bank of Belgium also pushed its peers to give more consideration to automated international payments.⁴⁰ Like others, they pointed out the risks of incompatible networks and the benefits of standardising codes etc but they also emphasised the special needs of the EEC as it moved toward monetary union. At this point, BIS staff sought views on whether the BIS itself could 'establish[ment of] a multilateral mechanism for effecting international payments, transfers and clearings on a computerised basis in an off-line or on-line mode, both for central and commercial banks'.⁴¹ There was no general enthusiasm for the BIS extending its role in this way, and it is unlikely that such a proposal would be met with a favourable response from banks for whom this was a lucrative business.⁴²

As central banks debated their role, commercial banks pushed ahead, setting up national working groups to broaden the scope of engagement with private sector stakeholders.⁴³ At this point, while the scheme was to be as 'widespread as possible with the stress on clean payments; the study of a clearing should not be excluded'.⁴⁴ A clearing system was still an ambition of some members of the group. Clearing had more direct systemic effects and integrated directly with national payments systems, so this aspect drew in central bankers at the highest level.

The meeting of Governors at the BIS in September 1971 formally agreed that the Computing Experts Meeting should 'study the possibility of using a communications system for effecting international payments similar to the one which was being studied at that time by the Central banks of the EEC' and that the Meeting should contact commercial banks that were 'considering establishing alternative networks with the aim of discouraging the development of a series of possibly incompatible telecommunications facilities'.⁴⁵ This proved too late for

³⁹ Ibid.

⁴⁰ National Bank of Belgium, 'Summary Note on the European System of International Payments', 4 March 1971. BoE 7A386-2.

⁴¹ Memo by BIS for the May 1971 meeting, 5 April 1971. BoE 7A386-2.

⁴² This process of how the Group became involved with SWIFT is from the summary report of the 9th Meeting of Experts on 4 September 1972. BoE 7A386-3.

⁴³ Extract from the Report on the Meeting of the MSP Steering Committee 15-16 June 1971. BoE 7A386-3.

⁴⁴ Ibid.

⁴⁵ Note for Governor of Bank of England for Meeting of Governors September 1972, 6 September 1972. BoE 7A386-3. The European Commission published the Werner Report on achieving economic and monetary union on 8 October 1970.

the MSP discussions, which by December 1971 had already moved to feasibility studies. Rather than their own system, central bankers tried to make a direct contribution to the design of the commercial banks' scheme.

A month later, the chair of the BIS Meeting of Experts wrote to the commercial banks' MSP Steering Committee to ask whether central banks and the BIS could join their Steering Committee. The Steering Committee considered this at its meeting in Rome in March 1972, but the outcome was not what central bankers had hoped for. The banks decided only to invite central banks to participate as individual members 'in the same position as the participating commercial banks'. Each Steering Committee member agreed to contact their national central bank to discuss the project, and to invite them to join through their national working group, but central banks were excluded from the Steering Committee itself. The banks also proposed to take advice from their national central banks on how the BIS should be involved rather than respond to this request directly. The preference by the Steering Committee at this stage was for the BIS to join merely as part of the Swiss national working group.⁴⁶

A BIS Meeting of Experts was quickly convened in April 1972 in Basel to discuss this outcome. Central bankers were urged to pay the required fee to join the MSP 'in order to obtain the full documentation presented to the existing membership'.⁴⁷ For most central banks, the MSP scheme itself offered few practical benefits because their own correspondent traffic was relatively small but they needed to know what was going on and try to introduce their own views as market supervisors. The exception was Deutsche Bundesbank that had a large volume of payments (up to 20,000 per month) to correspondent banks 'and can see prospects of making these payments faster, at lower cost and with greater security via MSP [SWIFT] than by present methods'.⁴⁸ The computing experts still hoped that the BIS could represent central banks on the Steering Committee, separate from the national committees, but this was rejected by the commercial banks.⁴⁹

⁴⁶ K Weber, Secretary Steering Committee MSP to d'Aroma BIS, 21 March 1972. BoE 7A386-3.

⁴⁷ Memorandum on BIS International Inter-Bank Message Switching Project, R.S. Bennett 19 April 1972. BoE 7A386-3.

⁴⁸ Memorandum on BIS International Inter-Bank Message Switching Project, R.S. Bennett 19 April 1972. BoE 7A386-3.

⁴⁹ D'Aroma to K. Weber, 21 April 1972. Weber to d'Aroma 15 May 1972. BoE 7A386-3.

Shelving the payments element reduced the impetus for central bank involvement. The MSP Steering Committee agreed that 'it is the only object of the project to forward messages relating to international payments by means of a message switching system. As such, the system will not affect actual banking activities and it was therefore that the members of the Steering Committee could not see why a special position would be taken by the central banks'.⁵⁰ Since payments were not being settled or cleared through the system, the MSP Steering Committee saw no special role for central monetary authorities.

Opinion among central bankers over whether to join was mixed. The Bank of England viewed the scheme mainly as a communications channel between banks, with no processing or settlement features, at least so far.⁵¹ Participant banks would still be subject to each country's exchange control for the payments entered through the network so that the scheme was not 'fundamentally different from the present system'. Most other G10 central banks 'had reservations as to the further evolution of the proposed network, with a number of participants feeling that it was as a mechanism for effecting clearing and settlement transactions that the MSP would in fact be of most value to the network users' and therefore was a likely outcome.⁵² The MSP was also likely to be expensive in terms of hardware and subscriptions compared to direct telex costs, and this could over-burden smaller banks or central banks with less correspondent bank business.⁵³ Nevertheless, by September all G10 central banks had joined except for the Swiss National Bank (for constitutional reasons), the FRBNY (because of issues with the ABA), the Bank of Japan and the National Bank of Belgium. The BIS computing experts identified five advantages that central banks could achieve by joining:

- protecting the interests of small banks and non-commercial credit institutions;
- establishing a link with national clearing systems;
- ensuring compatibility of standards;

⁵⁰ Weber to d'Aroma 15 May 1972. BoE 7A386-3.

⁵¹ Memo GHW Bennett to R.T.P Hall (who minutes his agreement with the memo's position, as does George Blunden), 29 June 1972. BoE 7A386-3.

⁵² Bennett reported to his colleagues in London that 'the Belgian-led campaign to the effect that SWIFT in some way (which is far from clear) threatens the interest of central banks did not make any headway. The bogey that commercial banks were in the process of setting up a new international clearing and settlement mechanism appears to have been dispelled'. Bennett report on the 12 July 1972 Meeting of Experts at the BIS, 2 August 1972. BoE 7A386-3.

⁵³ Summary Report of the 8th Meeting of Experts to Study Problems Concerning the Use of Computers in Central Banks, 12 July 1972, 20 July 1972. BoE 7A386-3.

- possible facilities for collecting relevant statistics;
- central banks' responsibilities as monetary authorities.

Given that the organisation was due to be based in Brussels, the position of the National Bank of Belgium was intriguingly negative. They agreed that it was useful to maintain informal contact with SWIFT developments but believed that central banks would not be able to influence it from inside or get access to data to enhance their supervisory responsibilities.⁵⁴ In the end, however, the Governor of the National Bank of Belgium did not oppose the general view that in principal the G10 central banks should join.⁵⁵ On this basis SWIFT was formally founded as a Belgian cooperative owned by member banks in 1973 but central bank governors continued to worry about whether they should be more active participants in the design of the system.

At the end of February 1974, the BIS Group of Computer Experts advised the Governors of the BIS of their ongoing concerns about the security and reliability of the newly founded SWIFT cooperative. As a result, the G10 central bank governors approved a proposal to set up a Working Party on Electronic Systems for International Payments that included representatives from the Banca d'Italia, the FRBNY and the Bank of England to determine whether central banks should take further action in regard to SWIFT before it became operational.⁵⁶ The Working Party turned first to the security and reliability of the system but it took until April 1975 to finalise their recommendations for a 'check list' to be completed by the Working Party and by SWIFT itself. They concluded that SWIFT 'did appear to provide sufficient safeguards as a financial message-switching network and that the staff of SWIFT were striving conscientiously to maintain and improve these safeguards'.⁵⁷ Most of the Working Party's deliberations focused on the implications of telecommunication systems for effecting international payments, rather than the messaging system itself. The main public interest concern identified by central bankers was the possible timing and implications of any evolution of SWIFT from messaging to settlement and/or clearing.

⁵⁴ Note for Governor of Bank of England for Meeting of Governors September 1972, 6 September 1972. BoE 7A386-3.

⁵⁵ Morse minute 10 September 1972 on the G10 Governors' meeting at the BIS of that day. BoE 7A386-3.

⁵⁶ Summary Report from the Working Party on ESIP to the Group of Computer Experts, 16 March 1977. The Working Party first met in early February 1976. BISA 7.31.1.2 File 19. These three central banks were selected 'on the basis of their previous experience and knowledge of automated data transmission networks'.

⁵⁷ Ibid.

The Working Party consulted with experts in foreign exchange and banking and found ‘widely differing views of the present, and likely future, importance of SWIFT in the field of international payments’. For some, it was merely an incremental development of existing Telex communications, while others thought that ‘it was already the vehicle for changes in the handling of payments’. As far as the latter, the Working Party thought that further consideration might be given to the possibility that ‘European banks may use SWIFT to produce net balances between themselves of deals denominated in US dollars in order to reduce the number of messages sent to correspondents in the United States’.

Central bank supervision or even oversight was considered but dismissed. The Working Party decided that SWIFT would probably not lead to any further concentration of foreign exchange dealing since it was already concentrated in larger institutions, so SWIFT would not make the situation of smaller banks any worse. In terms of supervision, ‘the general view was that central banks would probably not wish to monitor a payments system in order to extract statistical information’ since the information would be incomplete, and such monitoring would ‘complicate operational procedures and it might reduce the attractiveness to the commercial banks of using such a system for their business’.⁵⁸ After the scandals of the summer of 1974, central banks had already put national procedures in place to encourage banks to improve internal governance to reduce operational risk in foreign exchange markets (Schenk 2017).

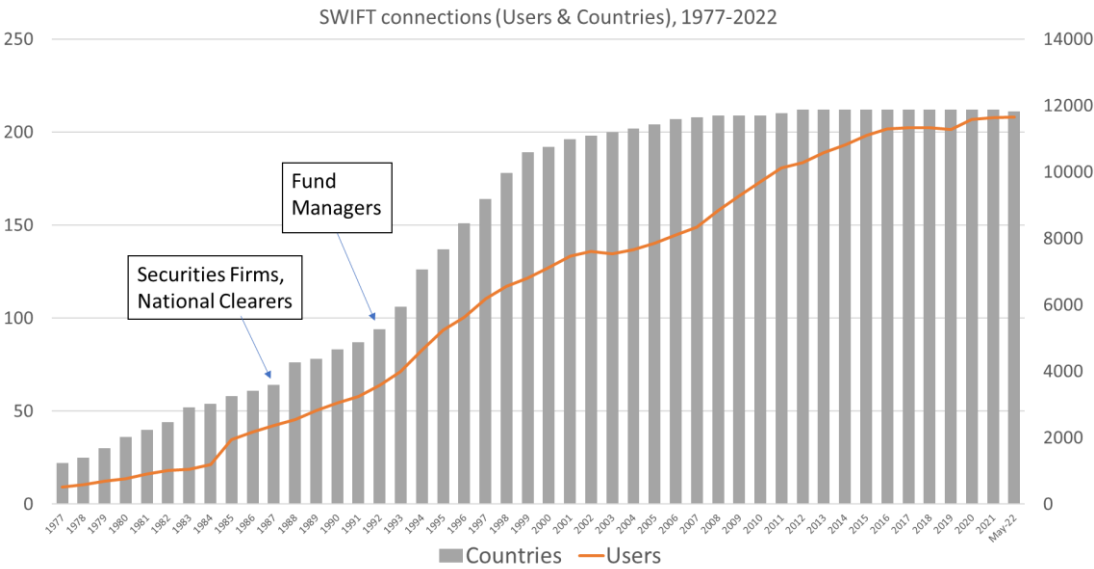
In the end, the Working Group decided that there was no role for central banks to play in SWIFT other than as participants. By this time, SWIFT was ready to launch so it is not clear what they could have done to contribute to the design. There appeared to be no enthusiasm among commercial bankers to expand the functionality beyond growing the geographical coverage of the messaging system. Settlement would remain between accounts in correspondent banks as before, it was just the notification of instructions to adjust these balances that was streamlined. As a result, the Working Party concluded that ‘for the next three years at least, SWIFT presents no major problems for the central banks’ and no action

⁵⁸ Summary Report from the Working Party on ESIP to the Group of Computer Experts, 16 March 1977. The Working Party first met in early February 1976. BISA 7.31.1.2 File 19.

was required ‘other than the need to monitor the progress of the system’. For this, it was ‘essential that some central banks belong to SWIFT’.⁵⁹

Figure 2 shows the rapid increase in members and geographic reach, especially after membership was extended to non-banks.

Figure 2



Initial optimism was disappointed in the first years of operation, which were plagued by uncertainties about legal finality, technical failures and managerial challenges.⁶⁰ Central bankers took the time to sit on national SWIFT user-group committees and kept in close contact with SWIFT management. A particular point of tension was SWIFT’s business model, which pushed it to diversify its products and customer base, and led to some neglect of the resilience of its core business. Already in 1980, three years after SWIFT was launched, the G10 Central Bank Governors set up a special Group of Experts to report on issues in the payments system (discussed below). Twenty years after SWIFT started operating, the G10 central banks negotiated formal ‘cooperative oversight’ because so many critical payments systems depend on it. As noted on the SWIFT website, in the absence of regulation, ‘the main instrument for

⁵⁹ Summary Report from the Working Party on ESIP to the Group of Computer Experts, 16 March 1977. The Working Party first met in early February 1976. BISA 7.31.1.2 File 19.

⁶⁰ The legal foundations for cross-border electronic payments continued to attract the interest of the United Nations Commission on International Trade Law, which set conventions on bills of exchange and letters of credit in 1987-92. <https://uncitral.un.org/en/texts/payments> [accessed 28 October 2022].

oversight of SWIFT is moral suasion'.⁶¹ With some caveats, the details of transactions through SWIFT remain confidential and beyond the reach of public authorities.⁶² More recently, public interest in global payments was reinvigorated by the apparent reduction in scope of the correspondent bank network (FSB 2015), lack of transparency and the persistently long time taken for cross-border settlement in many areas. As noted above, in 2020 the G20 launched a major programme to investigate ways to improve the system and to set targets and minimum standards.⁶³ As the FSB noted 'extensive engagement with the private sector has been integral to the Roadmap since its inception' and was operationalised through taskforces and expert groups and workshops as well as an annual Cross-border Payments Summit.⁶⁴ The approach aligns with the industry consultation embedded in the Basel Committee process.

Archival evidence in this section has demonstrated that the role of central banks in SWIFT was contested among central bankers themselves, but the early initiatives for a more proactive stance were successfully rebuffed by commercial banks who wanted to protect their independence, and by the Bank of England (inter alia) who resisted responsibility for the design of the system. Although national telecommunications and national payments systems were often in public ownership or control and carefully regulated in most countries, this was not considered necessary for this specific inter-bank computerised system. Once prudential concerns about settlement could be put aside, the systemic resilience of messaging was left to the private sector while central banks focused on their national mandates. In the end, however, the Bank of England and other central banks still found themselves drawn into supporting the management of the framework to ensure it was robust to the rapidly growth of international payments.

Origins of CLS: Netting out the Herstatt Risk

The Herstatt risk was not the central concern of SWIFT – this was more to do with operational

⁶¹ <https://www.swift.com/about-us/organisation-governance/swift-oversight> [accessed 31 October 2022]. In 2012 SWIFT was required under EU law to disconnect sanctioned Iranian banks and in 2022 Russian and Belarus sanctioned banks.

⁶² According to various reports the US authorities accessed SWIFT data under subpoena for strategic reasons to do with finance of terrorism before and after 2001. Opinion 10/2006 on the processing of personal data by SWIFT EU Working Party report 2006.

⁶³ FSB, Enhancing Cross-border Payments Stage 1 Report to G20 (2020)

⁶⁴ <https://www.fsb.org/work-of-the-fsb/financial-innovation-and-structural-change/cross-border-payments/private-sector-engagement/> The first summit was October 2022.

efficiency through harmonised codes and a single secure communications network. Almost immediately, however, it was clear that reducing liquidity and counterparty risk required reducing the time of settlement and the size of gross outstanding settlements. This could be achieved through bilateral or multilateral netting where inflows and outflows between banks on behalf of various customers or between each institution and a network could be netted before settlement. The collapse of Herstatt Bank, in the midst of the SWIFT planning and just a few years after the New York Clearing House introduced computerised US dollar clearing (CHIPS), demonstrated the dangers in complex network of banks across time and space. Bankhaus Herstatt was engaged in fraudulent FX transactions and was closed by the German authorities before it had sent the funds to meet its obligations to its correspondent bank in New York. Other banks in New York had paid out on behalf of Herstatt in expectation of these funds via Herstatt's main correspondent, Chase Manhattan Bank. This left a group of banks out of funds for which they eventually had to sue (Schenk 2017, Mourlon-Druol 2015). Trust was sucked out of the correspondent bank system; CHIPS was suspended and the time before settlement was extended for several days (Schenk 2021). The average value of CHIPS transactions did not recover until 1986. Soon after SWIFT was launched in 1977, attention turned to devising netting schemes to overcome this risk in future.

The history of efforts to reduce or eliminate Herstatt risk is very complex and protracted.⁶⁵ Here, the public interest in a stable payments system was uncontested but the solution was left to the private sector in the belief that the public and private interests aligned. In 1984, Chemical Bank spearheaded an initiative to offer bilateral USD netting among banks in London (drawing in Lloyds Bank International as local co-chair).⁶⁶ The initial aim was quite modest: to reduce the number of correspondent banking payments instructions received in New York, with a view to extending it to other European centres.⁶⁷ The British Bankers Association had considered introducing dollar clearing in London in the 1970s but since it would be costly to set up and the benefits would mostly be gained by New York correspondent banks, the proposals were rejected. Nevertheless, by 1984, the appetite for streamlining payments was demonstrated by the ability of Chemical Bank to quickly gather 75 attendees from 42 London

⁶⁵ In addition to the need to net to reduce risk, the proposed economic and monetary union generated schemes specifically for clearing and settling ECU and Euro payments.

⁶⁶ Chase Manhattan Bank's Tokyo branch provided USD clearing and netting for 180 banks in Tokyo. This scheme left Chase Tokyo open to a 16-hour settlement risk.

⁶⁷ BoE C40/1431, BoE C40/1532.

institutions to a FX Netting meeting in London in July of that year; the subsequent steering board membership included banks headquartered in Canada, Switzerland, Paris, New York, London and Tokyo. Attendees were asked to pay £6000 each for the next stage of consultancy (22 US/European/British banks in London paid up by September). The Bank of England was invited to join the steering committee for free as a 'neutral observer'. The plan quickly expanded to more generalised FX netting via instructions sent to a centralised computer in London that would detect and match instructions during the day, making them final, as a means of bilateral netting. Only outstanding unmatched balances would need to be settled at the end of the day. Meanwhile, the Federal Reserve Bank of New York sponsored an industry-led Foreign Exchange Committee to examine similar bilateral FX netting proposals there.

The Chemical Bank proposal (FXNET) went forward in both New York and London after investigations of the legal determination of finality and liability (in case of insolvency of one party or events in another jurisdiction affecting a bank in London). By 1986, a feasibility study among 23 banks in London, each with about 600 deals per day (totalling \$4.2 billion), determined that the system would reduce each bank's clean risk at settlement by about \$350 million per day. They estimated that if 50 similar banks in London joined, the savings could be \$23 billion each day. Due to the upfront costs, only nine banks went forward to the next stage to trial the system in summer of 1986. At this point the scheme was intra-London rather than cross-border (and cross-jurisdiction). It was fully launched in January 1987 with ten participants by the end of the year.⁶⁸

The initiative clearly came from the private sector, but included the Bank of England (as an observer in the steering committee, making comments and suggestions) and the FRBNY in consultation. The Bank of England did not seek statutory oversight nor licensing powers, but they were asked to declare that they had 'no objections'. The FRBNY also had a steady hand on the process at the Foreign Exchange Committee that it sponsored in New York. The FRBNY gave permission to US banks to participate in FXNET in London so long as the contracts were legally binding both in London and in the country of the banks that were their counterparties, *and* that banks reduced their bilateral counterparty limits with other banks to take account of the reduced netted balances (so as not to encourage 'an increased level of trading'). The Bank

⁶⁸ FXNET in New York took longer due to technical difficulties. A FXNET scheme in Tokyo was also planned with Bank of Japan encouragement.

of England offered ‘nil obstat’ or no objection to the scheme on the same basis. Table 1 below lists the main active schemes by 1996.

Table 1: Netting Schemes active in 1996

| Year | Name | Location | | Number of members 1996 |
|---------------------------|--------------|----------|----------------------------|---|
| 1987 | FXNET | London | Bilateral Novation Netting | 57 Live Users; 35 signed and in process of going live |
| 1990 | SWIFT ACCORD | Belgium | Advisory Netting | 420 Matching; 29 Netting Subscribers |
| 1992 | Multinet | New York | Bilateral Netting | na |
| 1995 | ECHO | London | Multilateral Netting | 14 banks (13 currencies) |
| Approved but not launched | Multinet | New York | Multilateral Netting | 0 |

Source, New York Foreign Exchange Committee (Jan 1997) *Guidelines for Foreign Exchange Settlement Netting*.

<https://www.newyorkfed.org/medialibrary/microsites/fxc/files/guidefx.pdf>

Meanwhile, the issues raised by the Group of Computer Experts over SWIFT prompted the G10 Central Bank governors to launch a new Group of Experts on Payments Systems, which began meeting in October 1981. They were asked to write a report to Governors on the major changes in payments systems of member countries, the causes and consequences of change, and how this was likely to affect the roles of central banks. George Blunden, not a supporter of supranational regulation when chair of the Basel Committee, was the Group’s first chair. Similar to the Basel Committee, a lot of the Group’s time was spent on ‘tours de table’ sharing details of national systems, culminating in the first so-called Red Book summary of national payments systems published in 1985.

While bilateral netting of multiple currencies within a single jurisdiction (New York or London) was relatively straightforward, multilateral netting across borders raised more complex problems and risks, particularly over legal liability and redress in case of insolvency or failure

of a participant and enforcement of contracts. In this case, two rival organisations emerged in the private sector; one in London (out of FXNET) and one in the USA. In the public sector, these issues advanced the agenda at the BIS G10 Group of Experts on Payments Systems, who began to compile a report on the problems of netting payments across borders in 1988. They formed a Committee on Interbank Netting Schemes in 1989, producing the Lamfalussy Report in 1990.⁶⁹ The particular focus was liquidity and credit risk in cross-border payments as well as the supervisory and legal frameworks for this quickly evolving area. The Lamfalussy Report defined best practice and minimum standards for private sector cross-border payments systems to ensure that they were robust and did not threaten the stability of the international payments system. These standards were used as a framework for central banks to vet proposals in their jurisdictions and to guide private sector actors in their planning. In recognition of the growing importance of these issues, the Group of Experts in Basel was reorganised into a permanent G10 Committee on Payment and Settlement Systems (CPSS) in 1990.

One of the findings of the CPSS was that although central bankers were increasingly concerned about FX risk, banks themselves were quite complacent. The CPSS surveyed 63 internationally active banks about their FX risk management in 1993 and again in 1996 and 1997. The results (presented in Table 2) were disappointing. Less than half had appropriate controls and only 11% were measuring FX risk properly. These shares increased over time, but still, less than half the banks had proper measurement of their risk at the end of 1997 despite the Asian Financial Crisis of that Summer, which had posed large losses for international banks.

⁶⁹ BIS Group of Experts on Payment Systems, Angell Report on Netting Schemes, February 1989. Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten countries, Lamfalussy Report, November 1990.

Table 2: Measures of FX Settlement Risk Management

| Percentage of Banks Meeting Criteria | | | |
|--|----------|----------|----------|
| | End 1993 | end 1996 | end 1997 |
| Clear senior level responsibility | 62% | 84% | 96% |
| Application of appropriate controls | 47 | 63 | 73 |
| Proper measurement of irrevocable trades | 16 | 27 | 43 |
| Proper measurement of uncertain trades | 12 | 26 | 39 |
| Proper measurement overall | 11 | 25 | 39 |
| Clear senior level responsibility. Appropriate controls and proper measurement | 9 | 20 | 35 |
| Irrevocable = payment instruction cannot be unilaterally cancelled to the time when final receipt of currency bought is due | | | |
| Uncertain = following irrevocable, the time between when bought currency is due and confirmation that it has been received: e.g. after statement from correspondent bank | | | |

Source: CPSS, Reducing Foreign Exchange Settlement Risk: a progress report, BIS, 1998.

The extent of the risks the banks were supporting was evident in another survey of 77 banks in 1997, which showed the number of hours between the point where a payment outward became irrevocable and the time when funds were confirmed as received to meet those payments. This marked a period during which the bank carried counterparty risk. For 81% of banks, this time extended to up to 24-48 hours for Yen/USD transactions.⁷⁰

⁷⁰ A 2020 survey of SWIFT gpi found that it still took up to 23 hours to complete processing for some countries (Nilsson et al 2022)

Table 3

| Outstanding Currency Exposure: Percent of banks responding to a survey that have outstanding currency exposure between USD and named currency | | | |
|---|-----------|-------------|-----------|
| | >48 hours | 24-48 hours | <24 hours |
| JPY | 12% | 81% | 7% |
| BEF | 9 | 80 | 11 |
| FRF | 8 | 81 | 11 |
| DEM | 5 | 79 | 16 |
| ITL | 7 | 77 | 16 |
| NLG | 9 | 76 | 15 |
| SEK | 8 | 73 | 19 |
| CHF | 5 | 73 | 21 |
| ECU | 7 | 72 | 22 |
| GBP | 4 | 72 | 24 |
| CAD | 3 | 59 | 38 |

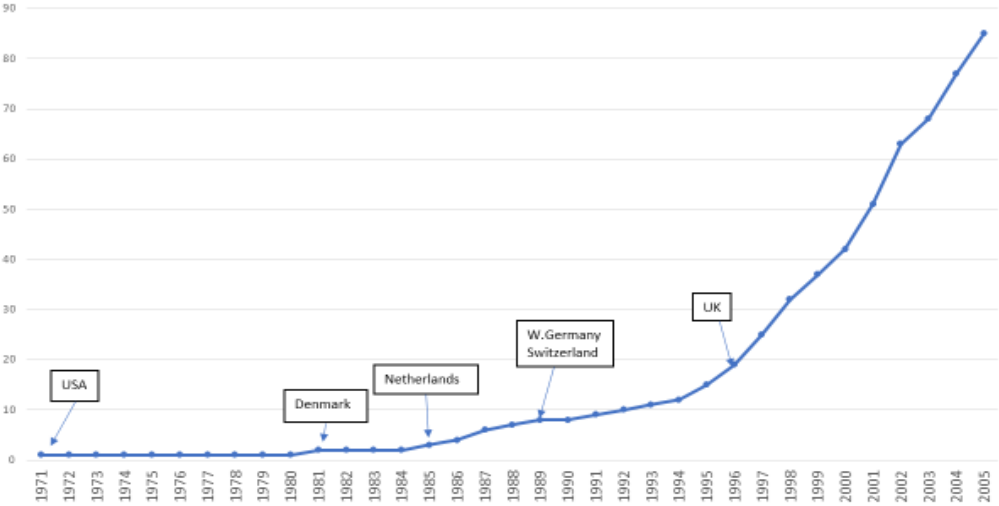
Source: CPSS, Reducing Foreign Exchange Settlement Risk: a progress report, BIS, 1998.

After setting the minimum standards in the Lamfalussy report in 1990, the CPSS repeatedly called for a private sector initiative to resolve Herstatt risk in FX markets but these appeals fell on unfertile ground. The CPSS noted that 'The chosen strategy was founded on the belief that the private sector, with the active support of the public sector, had the power to contain the risk that first came into focus at the time of the 1974 failure of Bankhaus Herstatt' (CPSS 1998). Two competing schemes emerged and sought central bank approval: ECHO among European banks and Multinet led by American banks, but they faced legal as well as technical challenges. Finally, the CPSS threatened to move the responsibility to the Basel Committee, where rules for increased regulatory capital against FX risk could be devised. This threat prompted a reconciliation between Multinet and ECHO who merged to form the Continuous Linked

Settlement (CLS) Bank in 1997. As Kahn et al (2014, p. 591) put it, CLS emerged ‘as a result of regulatory dissatisfaction with traditional arrangements for settling FX transactions’. CLS began operations in 2002 with 39 banks across 7 currencies and by 2013 settled about half of daily FX turnover (Kahn et al 2014, p. 592).⁷¹ By 2023 CLS included 18 currencies and 70 settlement members, so its reach does not extend directly to lesser traded currencies. Correspondent banking continues for third party users who are not direct settlement members. Members submit their FX orders for that settlement day by midnight and (after matching) CLS advises of the net amount that needs to be deposited into a multicurrency account held for each bank, usually by noon CET. Members make their payments through national RTGS systems so there is no intraday overdraft to create Herstatt risk. In this sense the private sector solution depends on the public sector Real Time Gross Settlement systems (and their opening times, which were gradually extended). Figure 3 shows the dates when these were introduced – the Bank of England’s RTGS was already in place for five years before CLS went operational.

Figure 3

National RealTimeGrossSettlement through central banks – takes another 10 years
 Number of National RTGS Schemes



⁷¹ USD, GBP, JPY, EUR, CHF, AUD, CAD

Conclusions

Correspondent banking was a prevalent, albeit less glamorous, vector for bank internationalisation alongside the subsidiaries, branching and clubs that have been so well documented for the globalisations of the 19th century and the late 20th centuries. Nevertheless, this paper has shown that the history of the payments system raises important issues of policy and governance of global banking systems. Where should the public/private boundaries be for critical infrastructure like SWIFT or cross-border settlements? Although the outcome is that these systems are firmly in the private sector (which benefits from the economies of scale and scope and where larger controlling banks are able to extract rents), this was a contested outcome during periods of their development. The systemic risks of messaging infrastructure were deemed low in the 1970s, which reduced the incentive for central banks to intervene (at a time when their own reputations for price stability were bleak), but these risks increased with the scale and scope of participants in global payments. By this time, however, central banks were side-lined to moral suasion. At the same time, no individual central bank (especially not the Bank of England) wanted to be formally responsible for the supervision (or potential bail-out) of the global payments system. They focused instead on developing robust national payments systems that did not require dilution of national sovereignty or extending their mandates beyond the nation-state.⁷²

In the midst of the planning for SWIFT, supervisory attention from central banks was attracted to settlement, especially after the Herstatt Bank collapse of 1974. Their immediate response was to set up a specialist committee in Basel to consider the governance of the foreign exchange market and the supervision of international operations of banks, but not the actual settlement risks that the Herstatt crisis had exposed. Likewise, the commercial banks' own planning for a more efficient messaging system does not appear to be directly affected by this event, even though it was the most serious systemic cross-border payments crisis of the post-war period. International bankers remained focused on reducing administrative costs and operational risk in this lucrative business through enhanced messaging technology and not on settlement risk. The innovation of SWIFT was not a disruption to the historic separation between flows of messages or instructions from the actual settlement of cross-border

⁷² The Bank of England did not have statutory responsibility for supervision until the 1979 Banking Act.

payments, which remained vested in the inter-linked bilateral accounts of correspondent banks.

As globalisation and financialisation accelerated, the persistence of Herstatt risk and inefficiencies in global payments attracted sustained attention from prudential supervisors. The CPSS contributed research and advice, but central bank entreaties to the industry to resolve it were frustrated by coordination failures and by a lack of urgency about the problem among banks themselves. The system was robust to a series of crises and bank failures in the 1980s and 1990s (albeit with some official support) which probably reinforced this complacency. In the end, it was the threat of higher regulatory requirements against foreign exchange risk that reinvigorated the industry-led solution, but even this took a further five years to launch. The underlying correspondent banking system has since supported unprecedented globalisation and survived a series of regional and global crises. In 2008 Lehman's correspondent Citibank was able to clear its payments through CLS with some official liquidity support. Despite ongoing public sector concern, an appropriate balance of public and private interests may have been achieved since the system has demonstrated its resilience, but the way that this balance emerged has been shown to be complicated and contested.

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