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The SWIFT Affair
Swiss Banking Secrecy and the Fight against Terrorist Financing

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Annex 1: The History and Detailed Functioning of SWIFT

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Annex 1: The History and Detailed Functioning of SWIFT

The History of SWIFT

- 1 Before SWIFT came into existence, international interbank telecommunication was handled through Telex-Messages. They were not very secure and not automated. Telex Networks were developed from the 1930s onwards and they have been on the decline since the 1980s. The financial industry was one of the first industries to replace the Telex network through a proprietary system.¹ In 1973, 239 banks from 15 countries founded SWIFT in order to create a shared worldwide data processing and communication link. One of its main tasks even today is to create common standards for the transmission of financial information. SWIFT became operational in 1977, when the first message was sent over the SWIFT network. Within a year, 10 million messages have been sent and the numbers of customers has grown to 518. In 1979, SWIFT connected to the US for the first time and established an operation center, followed a year later by connection to Asian countries. A major step was made in 1987, when SWIFT's membership voted to expand the user base to include broker dealers, exchanges, central depositories and clearing institutions. This expanded the range of messages carried in the SWIFT network, also including securities along the traditional payment messages.
- 2 Nowadays, only half of the messages transmitted over the SWIFT network are traditional payment messages. Over 40% of messages concern securities trading, but a whole range of different products are on offer, such as secured email and general bulk data exchange. Out of a total of 8,900 users, 2,265 are full SWIFT shareholders who may participate in decisional voting. 69% of SWIFT traffic concerns Europe, the Middle East and Africa. The American continent accounts for only 19%, and the Asia Pacific region for 12%² of global traffic.

The Functioning of SWIFT

3 General market transactions can be classified into three broad categories. (Geiger 2000) First, there are commercial transactions such as “business to business” or “business to consumer” transactions. Secondly, there are financial transactions such as “bank to business” or “bank to bank” transactions. “Bank to business” transactions involve a financial product or service, such as securities. Like “bank to bank” transactions, they are often of high value and electronically transmittable. The third category is “street side” transactions between banks and the banking system. All payments involving a seller and a buyer who do not have their respective accounts in the same bank, trigger secondary “street side” transactions, such as clearing and settlement. SWIFT plays the intermediary for transactions in the second and third categories of market transactions, where banks are involved.

4 “Street side” transactions, such as clearing and settlement procedures, can be resolved in three different manners: the traditional method to solve the problem of international payments involves correspondent banks. (Geiger 2000) In this system, every bank maintains an account in the other bank. In practice, specialized banks fulfill this role in different countries. The second method is a clearing system where banks clear their account after a certain time period at one central location, the clearinghouse. The third and most sophisticated system is the real time gross settlement system (RTGS) which settles payments continuously, transaction by transaction. National payment systems often rely on a clearing or RTGS system. International payments, however, are still largely managed through correspondent banks, a method facilitated by SWIFT. But even many clearing and RTGS systems, such as the European TARGET (Trans-European Automated Real-Time Gross Settlement Express Transfer) system use the SWIFT network to transfer their messages. (Poenar 2008)

5 SWIFT messages are programmed in a language known as FIN. It is heavily influenced by the Telex messages it replaced. A very simple SWIFT message could look like this:

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6 :20:MT101-Test
7 :28D:00001/00001
8 :30:040403
9 :21:Start B-Seq
10 :32B:EUR1,
11 :23E:CMTO
12 :50G:/Account Number
13 BANKDEM0XXX
14 :59A:/Account Number
15 BANKDEM0XXX
16 :71A:SHA
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17 This simple example contains the type of message (MT101), information on the message number, date, currency and account number.³ Today, due to FAFT anti-money-laundering regulations, every SWIFT message requires at least the actual name and address of both the sender and the recipient. SWIFT messages are stored for 124 days.⁴ Many different message types exist to fulfill the ever-growing necessities of SWIFT members. Message

type codes, such as MT101, describe individual SWIFT messages. This message code should not be confused with the BIC code (also known as SWIFT-BIC, SWIFT code or ISO 9362). BIC stands for Bank Identifier Codes and it is the unique identification code of a particular bank. It contains eight or 11 characters to identify the bank, country, location and branch. The BIC code registration is handled centrally by SWIFT.

- 18 New technological possibilities created a demand among financial actors for new and improved communication types. The classic usage for a SWIFT message is payments intermediation such as initiation, clearing & settlement and reporting of payments. Nowadays, SWIFT not only covers traditional payment functions, but also bulk credit transfers, cash management and corporate to bank payment initiations. Subsequently, new message types were introduced. Until the late 1990s, the proprietary FIN message language was sufficient for the communication of the financial instruments in use. But it became increasingly obvious that the Telex-based FIN language would not satisfy the needs of complex financial instruments such as equity derivatives, swaps and funds. The biggest deficit of FIN is its limited capacity to transfer Metadata. Metadata is used to describe the exact structure and format of a message, not the content itself. A message containing Metadata delivers along with the actual information the description how to treat this information. The standard SWIFT message has only a limited capacity to specify message processes. The structure of the message is not delivered with the message itself. It is described in the SWIFT User Handbook. This requires extensive manual programming if the message is to be integrated into existing applications.
- 19 SWIFT therefore decided in 1999 to adopt XML for future use.⁵ Contrary to FIN, XML is an open industry standard, mostly used in internet applications. XML was derived from older computer languages that contain Mark-Up language such as SGML and later HTML. Leading edge XML applications are now used on the internet to transmit within a document the information where the required software for that document is to be found. This way, data can be processed without having the actual software pre-installed on your computer. XML is often used in multimedia websites such as online video clip players. XML has become the program language standard in a variety of industries such as the automotive, travel, healthcare, insurance or telecommunication industry. It is specified by the World Wide Web Consortium. The transition from the standard SWIFT message system to XML messages is still under way. At the moment, both message types are carried in the SWIFT network.
- 20 SWIFT messages are transported over a highly secure electronic network. While details are kept confidential, it appears that SWIFT messages are transported using trusted providers over regular channels but with state-of-the-art technology. The network uses secure logins and encryption technology to prevent intercepted messages from being deciphered. A former SWIFT official described it as “arguably the most secure network on the planet”.⁶ Using the comparative advantage that a highly secure network constitutes, SWIFT nowadays also provides a service that transfers high value documents, such as contracts, in a safe and efficient manner around the globe.
- 21 Each member country has a data concentrator that connects to the main server in the Netherlands and the United States. In 2005, however, SWIFT changed its system architecture to an IP-Network infrastructure, which replaced the direct connection to the main servers. Banks transmit their data first to the country concentrator. This concentrator is then hooked up to the IP Network.

- 22 One of the main purposes of the SWIFT system was, and remains, standardization. Thus, information is transmitted in a harmonized manner which facilitates automation. Since the 1980s SWIFT messages have become the de facto financial transaction standard widely used inside and outside the SWIFT network. The International Organization for Standardization became involved and adopted the SWIFT message standard as an international standard. SWIFT is now an official “Liason Organisation” of the ISO and it is the unique official Registration Authority for all financial industry messages.
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NOTES

1. Telex Networks are still in place in many banks, but serve mostly the purpose of a backup communication tool.
2. Figures as of Mai 2009, <http://www.swift.com> (retrieved on May 19th 2009)
3. For an in-depth analysis and explanation of the SWIFT message code, please visit <http://www.iso15022/org/>, last accessed on May 12, 2009.
4. (2006). Avis relatif à la transmission de données à caractère personnel par la SCRL SWIFT suite aux sommations de l’UST (OFAC). C. d. l. p. d. l. v. p. – R. d. Belgique, Commission de la protection de la vie privée – Royaume de Belgique. AVIS N° 37 / 2006 du 27 septembre 2006.
5. Simple Coexistence: Paving the way to XML, SWIFT: Society for Worldwide Interbank Financial Telecommunication.
6. A former SWIFT official who spoke on the condition of anonymity said: “This thing is locked down like Fort Knox.” (Meyer and Miller 2006)