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As the commerce and economy expand, volume and variety of transactions expand where there is a need to exchange the money. Using cash for each of these transactions is neither feasible nor practically possible. There are concerns regarding the security and transportation of cash in cases where large amounts of money are involved. Banks support ease and velocity in such cases by offering various payment systems as solutions. What are Payment Systems? A Payment System is a mechanism that facilitates the transfer of value between a payer and a beneficiary by which the payer discharges the payment obligations to the beneficiary. Payment Systems are the medium to transfer funds from one person to another that facilitate businesses and economies. The payment system enables an exchange of goods and services in the economy. Payment systems help consumers to transfer funds to each other. Cash is the traditional and most widely used payment system. Consumers use cash to purchase goods and services. Banking channels also provide other payment instruments through different platforms and these are also widely used in commerce. Payment systems comprise of instruments through which payments can be made, rules, regulations, and procedures that guide these payments, institutions which facilitate payment mechanisms and legal systems, etc. that are established to facilitate the transfer of funds between different participant institutions. Payment systems are used by individuals, banks, companies, governments, etc. to make payments to one another. Classification of Payment Methods Payment Systems can be broadly classified into Large Value Systems and Retail Payment Systems. For the purpose of making things easy to understand we have classified the various payment methods in the following format: Large Value Payment System: Retail Payment System: Cash Payment Paper-Based Payments Cheques Demand Drafts Payment Orders or Banker's Cheques: Card-Based Payments Electronic Payments and Remittances Electronic Clearing Services: Electronic Funds Transfer: Real-Time Gross Settlement: Internet Banking: Mobile Banking: 1. Large Value Payment System: Large value systems typically process high-value critical payments. It is an essential payment system that ensures the smooth functioning of the economy and the financial system. If this system fails, it could trigger disruptions or transmit shocks within the economy. These systems mostly relate to interbank / inter-financial institutional transactions. Generally, these large value systems are strictly regulated by the Central Banks of respective countries and are electronic-based. . These systems enable payments to be made electronically and instantly in real-time. They offer speed, reliability, safety, convenience, cost, and accuracy. Some examples of Large Value Payment Systems are: Inter-Bank Cheques Clearing Systems (the Inter-bank Clearing) High-Value Cheques Clearing System (the High-Value Clearing) Government Securities Clearing System (the G-Sec Clearing) Foreign Exchange Clearing System (the Forex Clearing) Real-Time Gross Settlement (RTGS) System Systems Important Payment Systems (SIPS) FIJICLEAR to make large value payments Fiji SWIFT (System for the Worldwide Interbank Financial Telecommunication) Large Value Transfer System (LVTS) in Canada Retail Payment System (Retail) A payment system generally cater to the payment of transactions related mainly to settlement of obligations arising from the purchase of goods and services. This payment system is as important as the large-value payment system and has a larger user group. They typically handle transactions that are low in value, but very large in number, relating to individuals firms and corporates. The retail payment systems in any country comprise both paper-based as well as electronic-based systems. A person with a payment card of any kind is part of the retail payment system. At the retail level, most transactions involve cash, cheques, cards or electronic transfers. Retail payments can be classified as: Types of Bank Payments: Cash Payment Paper-Based Payments Card-Based Payments Electronic Payments and Remittances 2(a) Cash Payment: 2(a) Cash Payment: Cash payment is the oldest, most common payment system which is well known and is the most preferred method for small payments because it involves no credit. With cash, you can usually purchase goods and services easily as it widely accepted. Carrying too much cash is risky as it can lead to theft and other problems. However, people still carry cash for its convenience and flexibility. From the payee's point of view, transactions are completed immediately and this cash can be re-used for other transactions. This system is suited for small amounts of payments. 2(b) Paper-Based Payments: Paper-based payments are in the form of cheques, demand drafts, payment orders, banker's cheques, refund orders, warrants, etc. These are also referred to as negotiable instruments. For simplicity, they are generally referred to as cheques. The advantages of paper-based payments are that they are safer than cash for example a crossed cheque can only be deposited into the payee's account. They are preferred for large amounts and a large number of payments to avoid carrying large sums of cash. Payments can be made at the payer's convenience and posted to the payee. The biggest disadvantage of paper-based payments is that it can take up to 3 - 4 working days before funds are available to the payee. It might take up to three days for the money to be received and systems are operated by the cardholder and the merchant. A credit facility extended to a user is as important as the credit facility extended to a merchant. A cardholder can use a card to make any type of payment/purchase. Credit Card enables its holder to buy goods and services with a credit line given by credit card issuer. The institution which issues the card has a tie-up with the concerned merchant establishment and the card-issuing organization, if different, to facilitate this arrangement. The amounts charged to the customer are paid by the card issuer to the merchant and subsequently billed to the customer. Funds are settled at a later date. Cardholders are billed on a monthly basis and bear financial charges (interest) on outstanding amounts if payments are not made by the due date. Credit cards are issued through commercial banks and/or other issuers. A credit cardholder may not be an account holder in the bank which issues the credit card. 2(c)(ii) Debit Card: Debit Card is a payment card where the transaction amount is deducted directly from the card holder's bank account upon authorization. Debit cards can be of two types, one which is linked to an account and is issued by bank account holders only. Second could be pre-loaded cards where a certain amount is stored in the card. Generally, debit cards are also ATM cards. The mode of using debit cards and credit cards is generally the same. 2(d) Electronic Payments and Remittances: With the advent of computers and electronic communications, a large number of alternative electronic payment systems have emerged. These include electronic funds transfers, direct credits, direct debits, internet banking, and e-commerce payment systems. Payment systems are used in lieu of tendering cash in domestic and international transactions and consist of a major service provided by banks and other financial institutions. Standardization has allowed some of these systems and networks to grow to a global scale, but there are still many country and product-specific systems. 2(d)(i) Electronic Clearing Services: These are electronic payments offered by banking channels for receiving or making payments. Electronic Clearing Services is a mode of payment by an institution and receipt by individuals for interest-free transactions such as transferring funds from your savings to the current account or to a third party account. The major advantages are that the payments are made at the convenience of the account holder and are secured by the user name and password. This facility can be used at any time and anywhere in the world with internet access. Similarly, bank customers can make small value repetitive payments such as electricity bills, telephone bills, loan installments, insurance premiums, club fees, etc. The payer instructs their bank to make direct debit payments and the payee provides amounts and dates of the payments. The process operates on the basis of a large number of small debits and one consolidated credit from users to the service provider. The system provides the convenience of paperless payment on due dates by direct debit to the customer's account. This facility can be used for paying different amounts and is useful for paying regular bills. The advantages of this system are guaranteed payments and no need to remember payment dates. 2(d)(ii) Electronic Funds Transfer: This electronic mode of remittance of funds is enabled by the participating banks under the supervision of the central bank of the country. The amount sent from the sender's bank branch is credited to the receiver's bank branch on the same day or at the most the next day. This facility saves the effort of sending a demand draft through the post and the inherent delay in reaching the money to the receiver. Banks may charge a commission for using this service. 2(d)(iii) Real Time Gross Settlement: The real-time gross settlement system facilitates the instant transfer of money from one account to another across cities. This is basically a large value remittance system where funds are required to be transferred quickly. While all the above payment and remittance systems are settled between banks on a net basis, this system is settled on a gross basis which means that each transaction is settled independently. This facility is useful to banks for their fund's management, for companies to transfer large amounts for individuals who require urgent payments. 2(d)(iv) Internet Banking: Online Banking (or Internet banking or e-banking) allows customers of a financial institution to conduct financial transactions on a secure website operated by the institution. This is a very fast and convenient way of performing banking transactions such as transferring funds from your savings to the current account or to a third party account. The major advantages are that the payments are made at the convenience of the account holder and are secured by the user name and password. This facility can be used at any time and anywhere in the world with internet access. The only disadvantage is that for making this payment access to computers and internet services is required and the internet comes at an additional cost. 2(d)(v) Mobile Banking: Mobile banking is a service provided through the combined effort of a bank and a mobile service provider, to perform common banking transactions. An active bank account is needed and a mobile phone equipped with features required by the bank. The advantages of this system are that it is secured and available to user at all times, a very fast and convenient way of making payments as the payments can be made from anywhere that has mobile network coverage. Some disadvantages are security as mobiles need to be kept safely, otherwise, misuse may occur. In a monetized economy there are many different types of transactions that are conducted daily that facilitate the transfer of goods and services from one person to another and need to be settled by way of payment. Payment systems play an important role in any country and are very important for the effective functioning of the economy. The central banks of the country are an integral part of the payment systems as it monitors, supervises, and regulates the whole payment system processes. Related Links Creation Date Friday, 12 April 2013 Hits 175679 You May Also Like: Definition of Bank: Meaning of the term Bank and the Business of Banking What do we mean by the word bank? How did the word bank originate? What is the most simple and concise definition of a bank that explains the fundamentals of the banking process? Does the definition of banking vary from country to country? What are the key differentiators between any other business and a Bank? Get answers to all these questions and explore the basics of bank and banking as an industry. 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Read more Overview of Banking Industry: The Industry Basics Banks play a key role in the entire financial system by mobilizing deposits from households spread across the nation and making these funds available for investment, either by lending or buying securities. Today the banking industry has become an integral part of any nation's economic progress and is critical for the financial wellbeing of individuals, businesses, nations, and the entire globe. In this article, we will take you through the major events and developments in the history of the banking industry. Read more Overview of Banking Industry: Underwriting, caters to different types of customers from individuals to large corporates, serve diverse geographies from rural villages to cross-border operations. Thus the banking industry is made up of several types of banks, with their own objectives, roles, and functions. In this article, we will explore the various sectors, segments, and classifications of banking based on parameters like products, customers, types, etc. Read more Type of Banks: Different Types of Banks in India & their Functions This article explains the banking structure in India and how different banks are classified as per RBI Norms. The Indian banking industry has been divided into two parts, organized and unorganized sectors. The organized sector consists of Reserve Bank of India, Commercial Banks and Co-operative Banks, and Specialized Financial Institutions (IDBI, ICICI, IFC, etc.). The unorganized sector, which is not homogeneous, is largely made up of money lenders and indigenous bankers. Learn what we mean by nationalized banks, scheduled banks, public sector banks, private banks, and foreign banks. Read more Types of Banks: Different Banks & their Classifications (Global) The banking industry caters to various sections of society thus the focus of banking becomes varied, catering to the diverse needs of clients through different products, services, and methods. To meet this, we need distinctive kinds of banks addressing complex business & social needs. In this article, we will explain various types of banking institutions ranging from retail banks, commercial banks, co-operative banks, investment banks, central banks to various other types of specialized banks. Read more Banking Operations: Understanding Various Transactions & Activities Banks perform a variety of operations ranging from basic or primary functions like day to day transactions at a branch to others that maybe the agency or general utility services in nature. The transactions that are incidental to revenue/sales or sustaining the business are an important element of the banking industry value chain. 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I have over 17 years of experience in the payment industry, and I am still in love. But things have not always been that easy and lovely for me. It took me about 4 years to really understand domestic payments. So, the information that I am going to share with you is precious. If you follow me until the end, you will be able to understand fundamental concepts, and that will enable you to grow your skills faster. Let's begin with the definition of payment. What is a payment? According to the Bank of International Settlement, a payment is the payer's transfer of a monetary claim on a party acceptable to the payee. Typically, claims take the form of cash or deposit balances held at a financial institution or at a central bank. Put simply, a payment is a transfer of value from one party to another. The value transferred can be monetary like 10 units of currency. Or it can be of digital form like a cryptocurrency. A payment transaction involves two end parties: On one side, the debtor or payer who sends the funds, and on the other side, the creditor or payee who receives the funds. An end party can be the sender or receiver of the payment. It is a party involved in any side of a payment transaction. Payments are generally made in exchange for the provision of goods or services between end parties, or to meet legal obligations. Closely related to payments is the concept of payment instrument. In the expression "payment instruments", the word instrument is added to the word payment to emphasize that payments are made through instruments. There are two high-value payment systems in the USA: Fedwire, the RTGS system and CHIPS. CHIPS is a large value payment system that implements continuous net settlement with payments. CHIPS stands for Clearing House Interbank Payments System. It is owned by the financial institutions that use it for the settlement of ACH transactions after settling in the different regional systems. ACH stands for Automated Clearing House. It is a generic name for clearing systems used for low-value or retail payments. There is another ACH system called EPN or Electronic Payments Network. It is operated by a private-sector operator, the Clearing House Payments Company. Other market infrastructures in the USA are the Cheques Clearing system and the card networks. The cheque-clearing systems are used for the interbank transmission and clearing of cheques, bills of exchange, and promissory notes. These instruments are all settled in Fedwire through the National Settlement Service system. The card networks are of multiple types. We have not represented all of them so as not to make the diagram more cumbersome. There are Visa and MasterCard for debit and credit cards and there are closed-loop networks like Discovery and American Express. Closed loop networks are not connected directly to central systems. They rely on settlement banks, which are participants in Fedwire, for the settlement of their transactions. Finally, we see the CLS system that is used to process Dollar-leg of Foreign Exchange transactions. The Continuous Linked Settlement system is used for the settlement of FX transactions in central bank money. CLS was created to eliminate the risk associated with foreign exchange settlement across time zones. Cross-border payments go through SWIFT or the card networks. With such a model, isn't it simple to understand and study payment systems? Please post a comment below and tell me what you think about it. The great thing is you can use this model to easily identify the key market infrastructures in any country in the world. Here is a similar model for France: We have a similar model for India: Overseas Banking Services Banks offer financial services, such as payment accounts and lending opportunities, to foreign clients. These foreign clients can be individuals and companies, though every international bank has its own policies, most of them offer various products and services to cater to the needs of their international clientele. Banking products for this sector include offshore banking, savings, investments, and mortgages clubbed with a broad range of FX services including forward and spot transactions. Wealth Management Wealth management services offered by banks include a full range of financial services and products clubbed with advisory services from expert professionals. Wealth management services are provided to an affluent client and may relate to any financial product. The purpose of these services is to grow the wealth of the client, secure the financial position, and make most of the money over the long term. Various investment avenues could be mutual funds, international global trading, time deposits, foreign exchange solutions or dual currency placement, etc. Investment Banking Wide range of services are provided under this umbrella and may include assessment of investment needs, evaluation of asset structure and the liability-management requirements, managing portfolios of financial assets, trading in securities, fixed income, commodity and currency, corporate advisory services for mergers and acquisitions, corporate finance, and debt and equity underwriting. Banks may also offer services related to cash-flow analysis, development of investment policy, portfolio-construction, custody services, and portfolio rebalancing, fundraising, and philanthropic services. Banks may offer trading services offered by exchanges/brokers or dealers like buying and selling of shares and debentures on instructions from the client. Fulfillment of Social Objectives In the recent past, there has been a concerted effort by the policymakers in reorienting banking towards achieving social objectives. There has been a major shift in the banking policy to support more and more financial inclusion. Some trends in the recent past have been a shift from urban orientation to rural orientation by opening more rural branches, from class banking to mass banking by allowing zero balance account for poorer sections of society using innovative practices. Related Links Creation Date Friday, 06 April 2012 Hits 148223 You May Also Like: Definition of Bank: Meaning of the term Bank and the Business of Banking What do we mean by the word bank? How did the word bank originate? What is the most simple and concise definition of a bank that explains the fundamentals of the banking process? Does the definition of banking vary from country to country? What are the key differentiators between any other business and a Bank? Get answers to all these questions and explore the basics of bank and banking as an industry. Read more History of Banking: Evolution of Banking as an Industry Banking is one of the oldest industries and banking in the form that we know of began at about 2000BC of the ancient world. It started with merchants making grain loans to farmers and traders while carrying goods between cities. Since then, the banking industry has evolved from a simplistic barter system and gift economies of earlier times to modern complex, globalized, technology-driven, and internet-based e-banking model. In this article, we will take you through the major events and developments in the history of the banking industry. 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Read more Types of Banks: Different Banks & their Classifications (Global) The banking industry caters to various sections of society thus the focus of banking becomes varied, catering to the diverse needs of clients through different products, services, and methods. To meet this, we need distinctive kinds of banks addressing complex business & social needs. In this article, we will explain various types of banking institutions ranging from retail banks, commercial banks, co-operative banks, investment banks, central banks to various other types of specialized banks. Read more Banking Operations: Understanding Various Transactions & Activities Banks perform a variety of operations ranging from basic or primary functions like day to day transactions at a branch to others that maybe the agency or general utility services in nature. The transactions that are incidental to revenue/sales or sustaining the business are an important element of the banking industry value chain. 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We work alongside other financial regulators such as the Bank of England and the Financial Conduct Authority to foster secure and resilient ways to pay. This means everybody can send and receive payments effectively, within an ever-evolving environment. Whether it's by paying a friend on your mobile app, buying your lunch with a card, withdrawing cash from a cash machine, transferring savings online or paying a utility by Direct Debit. We regulated an incredible 40.4 billion payments made across the UK in every2011.\*Source: UK Finance (2022) Systems used to settle financial transactions through the transfer of monetary value A payment system is any system used to settle financial transactions through the transfer of monetary value. This includes the institutions, payment instruments such as payment cards, people, rules, procedures, standards, and technologies that make its exchange possible.[1][2] A payment system is an operational network which links bank accounts and provides for monetary exchange using bank deposits.[3] Some payment systems also include credit mechanisms, which are essentially a different aspect of payment. Payment systems are used in lieu of tendering cash in domestic and international transactions. This consists of a major service provided by banks and other financial institutions. Traditional payment systems include negotiable instruments such as drafts (e.g., cheques) and documentary credits such as letters of credit. With the advent of computers and electronic communications, many alternative electronic payment systems have emerged. The term electronic payment refers to a payment made from one bank account to another using electronic methods and forgoing the direct intervention of bank employees. Narrowly defined, electronic payment refers to e-commerce—a payment for buying and selling goods or services offered through the Internet, or broadly to any type of electronic funds transfer. Modern payment systems use cash-substitutes as compared to traditional payment systems. This includes debit cards, credit cards, electronic funds transfers, direct credits, direct debits, internet banking and e-commerce payment systems. Payment systems may be physical or electronic and each has its own procedures and protocols. Standardization has allowed some of these systems and networks to grow to a global scale, but there are still many country-specific and product-specific systems. Examples of payment systems that have become globally available are credit card and automated teller machine (ATM) networks. Additionally, forms exist to transfer funds between financial institutions. Domestically this is accomplished by using Automated clearing house (ACH) and real-time gross settlement (RTGS) systems. Internationally this is accomplished by correspondent banking (possibly using the SWIFT network) or a more centralised system like the CLS settlement system. An efficient national payment system reduces the cost of exchanging goods, services, and assets. It is indispensable to the functioning of the interbank, money, and capital markets. A weak payment system may severely drag on the stability and developmental capacity of a national economy. Such failures can result in inefficient use of financial resources, inequitable risk-sharing among agents, actual losses for participants, and loss of confidence in the financial system and in the very use of money.[4] The technical efficiency of the payment system is important for the development of the economy. An automated clearing house (ACH) system processes transactions in batches, storing, and transmitting them in groups. An ACH is considered a net settlement system, which means settlement may be delayed. This poses what is known as settlement risk. Real-time gross settlement systems (RTGS) are funds transfer systems where the transfer of money or securities takes place from one bank to another on a "real-time" and on "gross" basis. Settlement in "real time" means that payment transaction does not require any waiting period. The transactions are settled as soon as they are processed. "Gross settlement" means the transaction is settled on one to one basis without bunching or netting with any other transaction. Once processed, payments are final and irrevocable. Comparatively, ACHs are typically used for low-value, non-urgent transactions while RTGS systems are typically used for high-value, urgent transactions.[5] Countries and regions have also implemented real-time or instant (or faster) payment systems which typically operate 24x7x365 and perform the transaction from debit of ordering customer's account to credit of beneficiary customer's account within a timeframe of 10-15 seconds.[6] Globalization is driving corporations to transact more frequently across borders. Consumers are also transacting more on a global basis —buying from foreign eCommerce sites as well as traveling, living, and working abroad. For the payments industry, the result is higher volumes of payments—in terms of both currency value and number of transactions. This is also leading to a consequent shift downwards in the average value of these payments. Some of these payments can be cumbersome, error prone, and expensive. Payments systems set up decades ago might be retrofitted or force-fitted to meet modern business needs. Frequently, the systems become unstable or less reliable, for example, STEP2 (an upgrade from 2003), which processes only euros. As of 2014, STEP2 is the only Pan-European automated clearing house (ACH) system in operation. This type of system is thought to become less relevant as banks will settle their transactions via multiple clearing houses[7] rather than using one central clearing house. T2 is a RTGS system that covers the European Union member states which use the euro. It is part of the Eurosystem, which comprises the European Central Bank and the national central banks of those countries that have adopted the euro. T2 is used for the settlement of central bank operations, large-value Euro interbank transfers as well as other euro payments. It provides real-time financial transfers, debt settlement at central banks which is immediate and irreversible. For users of these systems, on both the paying and receiving sides, it can be difficult and time-consuming to learn how to use cross-border payment tools, and how to set up processes to make optimal use of them. Solution providers (both banks and non-banks) also face challenges cobbling together old systems to meet new demands. For these providers, cross-border payments are both lucrative (especially given foreign exchange conversion revenue) and rewarding, in terms of the overall financial relationship created with the end customer. The challenges for global payments are not simply those resulting from volume increases. A number of economic, political, and technical factors are changing the types of cross-border transactions conducted. Such factors include: Companies are making more cross-border purchases of services (as opposed to goods), as well as more purchases of complex fabricated parts rather than simple, raw materials. Enterprises are purchasing from more countries, in more regions. Increased outsourcing is leading to new intra-country and new cross-border intra-company transactions. More enterprises are participating in complex, automated supply chains, which in some cases drive automatic ordering and fulfillment. Online purchasing continues to grow, both by large enterprises as part of an automated procurement system and by smaller enterprises purchasing directly. There is continued growth in the number of cross-border commuters. Individuals are increasingly investing abroad. Automated clearing house Automated teller machine Clearing Credit card Debit card Direct deposit Digital currency E-commerce credit card payment system E-commerce payment system Electronic bill payment Digital wallet Electronic funds transfer Interbank network (ATM / EFT / EFTPOS ) Online banking Payment card Payment service provider Payments as a service Payment orchestration platform Real-time gross settlement Wire transfer \* "What is a Payment System?" (PDF). Federal Reserve Bank of New York. October 13, 2000. Archived from the original (PDF) on



time gross settlement Wire transfer ~ "What is a Payment System?" (PDF). Federal Reserve Bank of New York. October 13, 2000. Archived from the original (PDF) on 21 October 2011. Retrieved 23 July 2015. ^ Biagio Bossone and Massimo Cirasino, "The Oversight of the Payment Systems: A Framework for the Development and Governance of Payment Systems in Emerging Economies" The World Bank, July 2001, p.7 ^ "Payment Systems: Design, Governance and Oversight", edited by Bruce J. Summers, Central Bank Publications Ltd, London, 2012, p.3 ^ Biagio Bossone and Massimo Cirasino, Op.Cit, p.7 ^ Michael Tompkins, Ariel Olivares, "Clearing and Settlement Systems from Around the World: A Qualitative Analysis" (PDF). www.payments.ca. Archived (PDF) from the original on 20 November 2018. Retrieved 19 November 2018. ^ "Instant payments definition". www.ecb.europa.eu. European Central Bank. 2017. Archived from the original on September 9, 2018. Retrieved September 8, 2018. ^ Syrbe, Benjamin, "European Trend Survey 'Banks & Future'", Equens whitepaper, Equens. Archived from the original on 11 November 2013. Retrieved 15 October 2013. [verification needed] A Guide to Replacing Legacy Payment Systems Archived 2013-11-06 at the Wayback Machine Inside National Payment Systems The end of a monopoly - New consumer payment systems. The Future of Money-Like Things - Past, present, and future overview of consumer payment systems. Retrieved from " An efficient, effective, and safe U.S. and global payment and settlement system is vital to you and our economy, and the Federal Reserve plays an important role by providing the nation's currency and operating some elements of this system. What Is the Payment System? Whether you're paying your babysitter in cash, writing a check to the plumber, swiping your debit card at the grocery store, or getting your paycheck by direct deposit, you are a participant in the payment system. The payment system facilitates financial transactions and purchases of goods and services by individuals and institutions, consumers and businesses, and investors and securities issuers. It includes currency, or Federal Reserve notes, issued and circulated by the Federal Reserve; checks deposited by banks and collected by Federal Reserve Banks; automated clearinghouse transactions to process small-value electronic credit and debit transfers like recurring electronic payments; and wholesale payments processed via Fedwire® Funds and Fedwire Securities for large-value financial transactions among businesses, banks, and individuals. Download the Testbook APP & Get Pass Pro Max FREE for 7 Days!0,000+ Study NotesRealtime Doubt Support71000+ Mock TestsRankers Test Series+ more benefitsDownload App Now Many take payment systems for granted and some are not even aware of their existence. But the reality is that our world would be completely different without them. What is a payment? What are payment instruments and payment systems? To start with fundamentals, this first article provides a brief introduction to payments and payment instruments and systems in general. Read on to find answers to the above questions. What is a payment? Put simply, a payment is a transfer of funds or monetary value. A payment transaction involves two end parties. On one side, the debtor or payer who sends the funds, and on the other side, the creditor or payee who receives the funds. An end party can be the sender or receiver of the payment. It is a party involved in any side of a payment transaction. Payments are generally made in exchange for the provision of goods, services between end parties, or to meet legal obligations. What are payment instruments? In the expression "payment instruments", the word instrument immediately catches our attention. Let's look at its definition and see how to combine it with payment. An instrument is defined as a means whereby something is achieved, performed, or furthered. It can be compared to a tool that aids in accomplishing a task. Tools make things very easy. You can do gardening or cooking without tools, spending a huge amount of time to eventually achieve pretty limited results. But how easy things are when you have the proper tools. Likewise, payment instruments facilitate payments and make fund transfers easy between the end parties involved. Payment instruments can be divided in two categories: cash payment instruments and non-cash payment instruments. Cash is money in the physical form of currency, such as banknotes and coins. We are all used to it and use it, but it is probably the less understood payment instrument as we will see in future articles. Cash, unlike non-cash payment instruments, can be used anonymously on the part of both payer and payee and that makes it truly unique. Non-cash payment instruments are multiple: Checks, Cards, Credit Transfers, Direct Debits, e-Money, Bitcoin, Ripple, etc. As providers of most of these payment instruments, banks and other financial institutions play a crucial role in payments. They hold depository accounts opened by End parties, consumers and businesses. Nowadays, a payment consists most of the time in transferring monetary value stored in depository accounts from one end party to another. What are payment systems? The banks connect to various payment systems in order to process and settle payments on behalf of their customers (and also for themselves). A payments system is a set of payment instruments, processes and, usually, interbank fund transfer systems that enable and guarantee the circulation of funds. It operates within a single country (or region) and, this is a key point, transactions are settled in the currency of that country. A currency is closely tied to a country, its government and its banking system. When two or more countries share the same currency, they build a monetary area or union and generally share the same payment systems. Since payment systems play a fundamental role in an economy, they are of particular interest to governments. In fact, payment systems are subject to regulation by the government of the country in which they operate. Participants in a payment system, generally banks, are bound by the rules. They must comply with the regulatory requirements and other specific payment system rules. Finally, there is a risk associated with settlement for the participants that a payment system is expected to manage partially or totally. Traditional payment systems are modeled as a network composed of banks and similar financial institutions, interbank clearing systems (generally called ACH) and central bank systems. A payment transaction begins and ends with end parties and the funds transfer happens through banks and other intermediaries which are connected through interbank or central bank systems. The model depicted below is a very general one and can be used to explain many things. However, there are a few exceptions that will be examined in the future. It is a way to ensure you come back to the blog to read future posts. Payment systems in a country or a monetary area Now let's consider the different components of the model. Outside of the payment systems, you see end parties which are the consumers and businesses. End parties can be customers of one or more banks. An end party can open as many depository accounts with as many banks as it wants. The banks are participants to many interbank systems and to the central bank system for the clearing and settlement of their payment transactions. They participate as direct or indirect participants and they obviously play the roles of intermediaries between interbank systems and end parties. The central bank system is positioned in the middle of the model. That emphasizes the important role played by the central banks overseer of the banking and monetary systems in a country or monetary zone. The final settlement of claims originating from interbank operations is performed in the central bank system, considered as the core payment system whereas interbank systems are considered as ancillary systems. One remark: In the literature, the expression "payment systems" may be used for Interbank systems only or for central systems only or for the whole systems presented in the model and even more. So be careful when you read books or articles about payment systems. Now you may wonder why banks need to connect to multiple systems to process and settle their payment transactions. There are two main reasons for it. First, payments are classified in low-value payments or large/high-value payments. There are different processes and risk management associated with each category. This has led in many countries to the implementation of various systems to effectively and efficiently address the needs pertaining to each category of payments. Second, in many countries, for historical reasons distinct systems were developed for the interbank exchange of messages related to the different payment instruments. Bank had to connect to the various systems to provide clearing and settlement services to their client over the whole set of payment instruments. There are hundreds of payments systems around the world. Some are known only in their country (or region) of origin. Some are known all over the world. Look at the picture below. It contains logos of some payment systems. You have certainly recognized a few. Logo of few payment systems Cards payment systems like Visa, MasterCard or American express have a strong brand and are well known to the public. Union Pay is the Chinese Card system which has become very popular in the world with the growing economy of China. Unlike card systems, many payments systems are known only to professionals. Fedwire and Nacha are respectively the large-value and low-value payment systems of the USA. Transactions are therefore settled in USD currency. Fedwire is owned and operated by the Federal Reserve Bank. In addition to Fedwire, there is another payment system used to settle wire transfers with very high amounts in the USA: CHIPS. It is operated by the Clearing House. Nacha is used for the interbank exchanges of low value payments through checks, credit transfers, direct debits and other similar payment instruments. TARGET2 is the large-value payment system of the Eurozone. It is operated by the European Central Bank (ECB). EBA Clearing is an interbank payments corporation which operates EURO1 / STEP1 (equivalent to CHIPS in the USA) for large-value payments, STEP2 for low-value payments, IPS for instant payments, STET is a French corporation offering interbank fund transfers services for low-value payments in France and Belgium through a system called Compensation Retail (CORE). It is interesting to note that Banks in France and Belgium are also participants of EBA Clearing systems and TARGET2. TARGET2, EURO1 / STEP1, STEP2, IPS and CORE process and settle transactions in EUR currency. BACS, Faster Payments and CHAPs systems are all UK systems which facilitate fund transfers in the local currency, the GBP. BACS is the low-value payment system. Faster Payments is the instant payment system and CHAPs is the large-value payment system. Paypal, Facebook Messenger payments, Google Wallet, Apple pay and Bitcoin can all be considered as low-value payment systems. All of them except Bitcoin extensively rely on services provided by low-value payment systems for fund transfers. We will describe in detail how they work in next articles. Traditional payment systems are grounded on centralized models. In the recent years, technology has enabled the emergence of payment systems based on models which are decentralized. Non-traditional payment systems such as Bitcoin do not rely on the current banking system for the exchange of values. They do not operate within a country and but directly over the Internet. They are used for the exchange of digital currencies almost without intermediaries. In summary, a payment is a transfer of funds or monetary value. Payment instruments were created to ease the transfer of funds between end parties. They are offered by Banks which connect to various payment systems to exchange and settle funds in the currency of their country or region. In the next article, we will look at Payment systems models. Special report | Payments THE SELF-SERVICE tills at Home Depot, an American home-improvement store, offer customers an unexpected payment option alongside cards and cash: PayPal, an online-payments service that is trying to muscle into the offline sort. Users simply enter their phone number and a personal code; electronic magic takes care of the rest. Money is deducted from the user's PayPal account and a receipt with details of the transaction is sent to their e-mail address. Purses or wallets do not come into it.This article appeared in the Special report section of the print edition under the headline "The end of a monopoly" System used to settle financial transactions through the transfer of monetary value A payment system is any system used to settle financial transactions through the transfer of monetary value. This includes the institutions, payment instruments such as payment cards, people, rules, procedures, standards, and technologies that make its exchange possible.[1][2] A payment system is an operational network which links bank accounts and provides for monetary exchange using bank deposits.[3] Some payment systems also include credit mechanisms, which are essentially a different aspect of payment. Payment systems are used in lieu of tendering cash in domestic and international transactions. This consists of a major service provided by banks and other financial institutions. Traditional payment systems include negotiable instruments such as drafts (e.g., cheques) and documentary credits such as letters of credit. With the advent of computers and electronic communications, many alternative electronic payment systems have emerged. The term electronic payment refers to a payment made from one bank account to another using electronic methods and forgoing the direct intervention of bank employees. Narrowly defined electronic payment refers to e-commerce—a payment for buying and selling goods or services offered through the Internet, or broadly to any type of electronic funds transfer. Modern payment systems use cash-substitutes as compared to traditional payment systems. This includes debit cards, credit cards, electronic funds transfers, direct credits, direct debits, internet banking and e-commerce payment systems. Payment systems may be physical or electronic and each has its own procedures and protocols. Standardization has allowed some of these systems and networks to grow to a global scale, but there are still many country-specific and product-specific systems. Examples of payment systems that have become globally available are credit card and automated teller machine (ATM) networks. Additionally, forms exist to transfer funds between financial institutions. Domestically this is accomplished by using Automated clearing house (ACH) and real-time gross settlement (RTGS) systems. Internationally this is accomplished by correspondent banking (possibly using the SWIFT network) or a more centralized system like the CLS settlement system. An efficient national payment system reduces the cost of exchanging goods, services, and assets. It is indispensable to the functioning of the interbank, money, and capital markets. A weak payment system may severely drag on the stability and developmental capacity of a national economy. Such failures can result in inefficient use of financial resources, inequitable risk-sharing among agents, actual losses for participants, and loss of confidence in the financial system and in the very use of money.[4] The technical efficiency of the payment system is important for the development of the economy. An automated clearing house (ACH) system processes transactions in batches, storing, and transmitting them in groups. An ACH is considered a net settlement system, which means settlement may be delayed. This poses what is known as settlement risk. Real-time gross settlement systems (RTGS) are funds transfer systems where the transfer of money or securities takes place from one bank to another on a "real-time" and on "gross" basis. Settlement in "real time" means that payment transaction does not require any waiting period. The transactions are settled as soon as they are processed. "Gross settlement" means the transaction is settled on one to one basis without bunching or netting with any other transaction. Once processed, payments are final and irrevocable. Comparatively, ACHs are typically used for low-value, non-urgent transactions while RTGS systems are typically used for high-value, urgent transactions.[5] Countries and regions have also implemented real-time or instant (or faster) payment systems which typically operate 24x7x365 and perform the transactions from debit of ordering customer's account to credit of beneficiary customer's account within a timeframe of 10–15 seconds.[6] Globalization is driving corporations to transact more frequently across borders. Consumers are also transacting more on a global basis—buying from foreign e-commerce sites as well as traveling, living, and working abroad. For the payments industry, the result is higher volumes of payments—in terms of both currency value and number of transactions. This is also leading to a consequent shift downwards in the average value of these payments. Some of these payments can be cumbersome, error prone, and expensive. Payments systems set up decades ago might be retrofitted or force-fitted to meet modern business needs. Frequently, the systems become unstable or less reliable, for example, STEP2 (an upgrade from 2003), which processes only euros. As of 2014, STEP2 is the only Pan-European automated clearing house (or PE-ACH system) in operation. This type of system is thought to become less relevant as banks will settle their transactions via multiple clearing houses[7] rather than using one central clearing house. T2 is a RTGS system that covers the European Union member states which use the euro. It is part of the Eurosystem, which comprises the European Central Bank and the national central banks of those countries that have adopted the euro. T2 is used for the settlement of central bank operations, large-value Euro interbank transfers as well as other euro payments. It provides real-time financial transfers, debt settlement at central banks which is immediate and irreversible. For users of these systems, on both the paying and receiving sides, it can be difficult and time-consuming to learn how to use cross-border payment tools, and how to set up processes to make optimal use of them. Solution providers (both banks and non-banks) also face challenges cobbling together old systems to meet new demands. For these providers, cross-border payments are both lucrative (especially given foreign exchange conversion revenue) and rewarding, in terms of the overall financial relationship created with the end customer. The challenges for global payments are not simply those resulting from volume increases. A number of economic, political, and technical factors are changing the types of cross-border transactions conducted. Such factors include: Companies are making more cross-border purchases of services (as opposed to goods), as well as more purchases of complex fabricated parts rather than simple, raw materials. Enterprises are purchasing from more countries, in more regions. Increased outsourcing is leading to new in-country and new cross-border intra-company transactions. More enterprises are participating in complex, automated supply chains, which in some cases drive automatic ordering and fulfillment. Online purchasing continues to grow, both by large enterprises as part of an automated procurement system and by smaller enterprises purchasing directly. There is continued growth in the number of cross-border commuters. Individuals are increasingly investing abroad. Automated clearing house Automated teller machine Clearing Credit card Debit card Direct deposit Digital currency E-commerce credit card payment system E-commerce payment system Electronic bill payment Digital wallet Electronic funds transfer Interbank network (ATM / EFT / EFTPOS ) Online banking Payment card Payment service provider Payments as a service Payment orchestration platform Real-time gross settlement Wire transfer ~ "What is a Payment System?" (PDF). Federal Reserve Bank of New York. October 13, 2000. Archived from the original (PDF) on 21 October 2012. Retrieved 23 July 2015. ^ Biagio Bossone and Massimo Cirasino, "The Oversight of the Payment Systems: A Framework for the Development and Governance of Payment Systems in Emerging Economies" The World Bank, July 2001, p.7 ^ "Payment Systems: Design, Governance and Oversight", edited by Bruce J. Summers, Central Bank Publications Ltd, London, 2012, p.3 ^ Biagio Bossone and Massimo Cirasino, Op.Cit, p.7 ^ Michael Tompkins; Ariel Olivares. "Clearing and Settlement Systems from Around the World: A Qualitative Analysis" (PDF). www.payments.ca. Archived (PDF) from the original on 20 November 2018. Retrieved 19 November 2018. ^ "Instant payments definition". www.ecb.europa.eu. European Central Bank. 2017. Archived from the original on September 9, 2018. Retrieved September 8, 2018. ^ Syrbe, Benjamin, "European Trend Survey 'Banks & Future'", Equens whitepaper, Equens. Archived from the original on 11 November 2013. Retrieved 15 October 2013. [verification needed] A Guide to Replacing Legacy Payment Systems Archived 2013-11-06 at the Wayback Machine Inside National Payment Systems The end of a monopoly - New consumer payment systems. The Future of Money-Like Things - Past, present, and future overview of consumer payment systems. Retrieved from " Share — copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt — remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution — You must give appropriate credit , provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions — You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. National payment systems (NPS) are the conduits through which buyers and sellers of financial products and services make transactions and are an important component of a country's financial system. Global financial liberalization and advancements in information technology have enabled significant updates to the architecture of large-value, retail, and securities payment systems, as well as the processes and procedures carried out by operators, administrators, regulators, and users of the systems. In a large number of countries, a significant measure of responsibility for the integrity of the national payment system exists within the central bank. This article will provide an overview of financial payment systems and the role they play in the modern global financial system. A country's payment systems are the financial technology infrastructure that allows commercial and financial transactions to operate efficiently and unimpeded. These payment systems also connect a country's financial activity to the global economy. Because of their critical nature, these payment systems are maintained by a country's central bank and overseen by government regulators. A national payment system is a configuration of institutions supported by an infrastructure of technology-driven processes and practices to facilitate commercial and financial transfers between buyers and sellers. A country's payment system reflects its banking and financial history and the development of supporting communications and technology platforms. The market for payment system services operates according to supply and demand as with any market. On the demand side, users seek easy availability of payment instruments and services to meet their various financial transactions, from large-scale bank transfers to point-of-purchase transactions with retail credit instruments, such as credit and debit cards. Users favor low transaction costs, interoperability between different systems, security, privacy, and legal protection. On the supply side, payment services provide a source of revenue for banks and other financial organizations and open up markets for providers of technology and communications products and services. A typical national payment system includes the following institutions and infrastructure: Image by Julie Bang ^ Investopedia 2020 Banks and other depository institutions communicate with each other through a messaging and routing system. If you have a checking account with a U.S. bank, you are probably familiar with the nine-digit number on the bottom left-hand side of your checks: this is the American Bankers Association (ABA) routing transit number (RTN), which is used to identify the financial institution on which the check is written. If your U.S. employer pays your salary via direct deposit, the transfer instructions (the messaging) are going to your bank via the automated clearinghouse (ACH), a system administered by the nonprofit National Automated Clearinghouse Association (NACHA) and operated by the U.S. Federal Reserve System (FRS) and Electronic Payments Network (EPN), a private-sector payment network. As of September 2023, the U.S. government has spent \$5.3 trillion in 2023. The regulatory framework for the U.S. national payment system involves many government agencies and bodies at both the federal and state levels. Here are some of the key players of this framework. The U.S. Federal Reserve plays a central role in overseeing and regulating the national payment system. It operates the payment and settlement systems that facilitate the clearing and settlement of interbank transactions. The Federal Reserve also sets monetary policy which can indirectly influence payment system operations. The CFPB, established under the Dodd-Frank Wall Street Reform and Consumer Protection Act, has the authority to regulate and enforce consumer protection laws related to financial products and services. This may include aspects of the payment system that impact consumers. This may also include regulations governing payment cards, remittances, and electronic fund transfers. The OCC oversees and regulates national banks and federal savings associations, including those that participate in the payment system. It ensures that these institutions adhere to relevant banking and payment regulations. The FDIC provides deposit insurance to banks, including those involved in the payment system. While its primary focus is on ensuring the safety and soundness of banks, it also contributes to maintaining confidence in the payment system. This coverage is passed along to consumers based on their deposits. FinCEN, a bureau of the U.S. Department of the Treasury, focuses on anti-money laundering (AML) and counter-terrorism financing (CTF) efforts. It sets AML and CTF regulations that apply to financial institutions, including those involved in the payment system. If you happened to work for an employer in Europe but still wanted your salary paid to your U.S. bank account, the process would be similar to that described above, but rather than routing through the U.S. ACH system, the deposit message would most likely post through the Society for Worldwide Interbank Financial Telecommunication (SWIFT) network, a Belgium-based cooperative society linking financial institutions in more than 200 countries. The SWIFT code is similar to the ABA RTN number as a means to identify the bank initiating the transfer as well as the correspondent banks with which the bank has pre-existing agreements to facilitate international transfer and settlement of funds. The SWIFT platform is used by all central banks that are part of the Eurosystem, the monetary authority for the 19 European Union countries that are part of the Eurozone, including Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, and Spain. The concept behind cryptocurrency is to overtake national payment systems. For those not wanting their payments or currency tied to a specific country, decentralized payment systems are a solution. Clearing refers to the transmission and reconciliation of payment orders and the establishment of the final positions to be settled. Settlement is the event that actually carries out the obligations — the respective debiting and crediting of the accounts of the parties to the transaction. The integrity of the global financial system relies on the proper accounting for each transaction that takes place in the system; therefore, stability depends on the reliability and accuracy of the clearing and settlement systems. There are three main types of clearing and settlement systems. Retail systems are responsible for the processing of small-scale financial transactions. While there is no globally accepted definition of "small-scale," it often denotes individual transfers of less than \$1 million. Large value systems are responsible for the clearing and settlement of larger transactions. Securities systems handle the clearing and settlement of securities, such as common and preferred stock, bonds, and other types of instruments. Clearing and settlement systems may settle on a gross or a netting basis. Gross settlement is when the settlement of funds or securities takes place individually, one transaction at a time. Netting is when large numbers of individual positions (both credits and debits) are netted together into smaller batches for processing so that settlement takes place at specified times during the business day rather than on a continual basis. Some payment systems may operate more than one clearing and settlement platform, incorporating both netting and gross settlement. Real-time gross settlement (RTGS) has become the most widely adopted method for large value systems. Real-time in this context means that transmission, processing, and settlement of a transaction takes place as soon as it is initiated. The U.S. Fedwire system, the primary large value component of the U.S. national payment system, settles on a real-time gross basis, as does the TARGET (TARGET2) system, which is the main large value platform for the European Central Bank and its networks of Eurozone national central banks, such as the Banque de France and the German Deutsche Bundesbank. One of the major risks in a clearing and settlement environment is that one of the parties may default. If settlement takes place on a real-time gross basis, then the effect of a default is limited to the single transaction being processed. However, if the default takes place in a netting arrangement, then all of the parties in that arrangement—potentially hundreds or thousands—may also be at risk, and thus so may their counterparties in other transactions taking place at the same time and so on throughout the system. This is an example of systematic risk—the risk that a failure in one part of the system will spread like a contagion throughout the system. Technology has facilitated the ability to process trillions of dollars every day through the global financial architecture. Yet each country has only a small number of individual systems, and these systems interact with each other around the world, so the ramifications of a systemic failure are dramatic. One institution responsible for the study and development of guidelines for financial system risk management is the Bank for International Settlements (BIS), a Geneva-based institution that acts as a bank for central banks and uses various initiatives to promote cooperation between international financial and monetary systems. In 2001, the BIS Committee for Payment and Settlement Systems (CPSS) introduced a set of guidelines for high-importance payment systems called Core Principles for Systemically Important Payment Systems. This sets out 10 principles for the prudent operation and risk mitigation for those systems—in particular, the large value clearing and settlement systems described above—where a failure in one part of the system could spread rapidly. The Core Principles also set out recommendations for the particular responsibilities of the national central banks in operating, supervising, and using the critical systems in their jurisdictions. The sound operation of national payment systems is often explicitly set forth in the organizational mandate of a central bank. For example, the organizational mandate of the U.S. Federal Reserve System consists of five activities: Conduction monetary policyPromoting financial system stabilitySupervision and regulation of the banking systemFacilitation of smooth functioning of the national payment systemDevelopment and administration of laws and regulations governing consumer credit and community development. National payment systems are crucial for the functioning of an economy. They facilitate commerce, enable financial inclusion, promote economic stability, and enhance the overall efficiency of financial transactions within a country. National payment systems support various transactions, including everyday retail payments (e.g., buying groceries), salary payments, bill payments, interbank transfers, and government disbursements like tax refunds and social benefits. Payment service providers, such as banks and fintech companies, are essential participants in national payment systems. They offer various payment channels, develop innovative payment solutions, and connect consumers and businesses to the payment infrastructure. National payment systems have a significant impact on the economy by reducing transaction costs, enabling efficient capital allocation, and fostering economic growth. They also help stabilize the financial sector and support the central bank's monetary policy objectives. National payment systems are vital to the integrity of the global financial system. Technology and globalization have facilitated the rapid growth of systems for processing noncash electronic transfers between parties located anywhere in the world. The payment system in any country will consist of a small number of retail, large value, and securities settlement systems that link into the systems of other countries through various linkage platforms and correspondent relationships. The actualization of risk, such as a party defaulting on a large value transaction, has the potential to spread throughout and thus imperil the system's integrity, making the payment system a major priority for central banks and other key institutions in the financial community.