1. INTERNATIONAL FINANCE – HISTORICAL DEVELOPMENT AND EVOLUTION

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1. MONEY AND COINAGE

2. BANKING AND CREDIT

- **(a) Ancient Period**
- **(b) Italian and Dutch Banking**
- **(c) English and Scottish Banking**

3. INTERNATIONAL FINANCE

- **(a) Euro Deposit and Inter-bank Market**
- **(b) Euro Term Lending**
- **(c) Euro Loan Market**
- **(d) Euro Bond Market**
- **(e) Euro Clearing and Representation**

4. INTERNATIONAL CAPITAL MARKETS

- **(a) Floating Rate Notes (FRNs)**
- **(b) Euro Notes and Note Issuance Facilities (NIFs)**
- **(c) Euro Commercial Paper (ECP)**
- **(d) Euro Medium-Term Notes (MTNs)**
- **(e) Multi-Option Facilities (MOFs)**

5. FINANCIAL DERIVATIVES

- **(a) Swaps**
- **(b) Futures**
- **(c) Options**
- **(d) Synthetic Securities**
- **(e) Hybrid Instruments**

6. ASSET-BACKED FINANCE AND SECURITISATION

7. CREDIT DERIVATIVES

- **(a) Credit Default Swaps (CDSs)**
- **(b) Total Return Swaps (TRSs)**
- **(c) Credit Spread Swaps (CSSs)**

8. STRUCTURED FINANCE

- **(a) Collateralised Loan Obligations (CLOs)**
- **(b) Collateralised Mortgage Obligations (CMOs)**
- **(c) Credit Linked Notes (CLNs)**
- **(d) Collateralised Debt Obligations (CDOs)**
- **(e) Credit Instruments**

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International financial markets have been subject to substantial growth and expansion in recent decades. This has resulted in a fundamental restructuring of many money (credit) and debt (securities) and other connected (derivatives) markets. The total global stock in financial assets was in excess of US$194tn before the 2007 and 2008 financial crash with over US$1.9tn moving round the world every day in the international currency markets.[1]

Markets have been subject to fundamental change especially since the early 1970s following the collapse of the Bretton Woods system of managed currency arrangements. Equally substantial adjustments followed during the 1980s, 1990s and the early 2000s. There has been an explosion in almost all types of international banking and financial market activity during this period. This has been accompanied by an increasing shift in debt from more traditional loan based bank instruments to tradable securities based assets. A number of new complex products have been developed beginning with financial derivatives in the 1970s, shorter duration notes and paper in the 1980s, to structured finance in the 1990s with a number of new institutions becoming increasingly important cps including hedge funds, private equity funds and sovereign wealth funds. Markets have been characterised by dis-intermediation and larger securitisation, repackaging and structured financing, privatisation and the deconstruction and separate rating and trading of financial risk.

All of this has been driven by liberalisation and deregulation in many markets, associated technological advances and consequent improvements in risk management, relentless market integration and globalisation as well as relatively benign financial conditions for much of this period. All of this led to a 'great moderation' or 'great stability' with low and stable global inflation and high real GDP growth in a low interest rate environment.

All countries in the world have been able to participate in this process as a new global financial capitalism has replaced the earlier merchant, industry, managerial and global capitalism of earlier centuries. A separate global marketplace has almost been created distinct from the underlying trade and mercantile based economies from which it originally evolved. Financial markets have then assumed a new significance and dominance in national and international trade and commerce and international relations more generally.

The history of the markets has nevertheless been one of cyclic growth and correction. Markets have brought significant advantage and wealth which has supported further investment, growth and expansion at the same time as raise the living standards of many across the world. Markets are nevertheless inherently volatile and unstable and prone to crisis and collapse. The great moderation that lasted into the beginning of 21st century was most severely disrupted by the credit contraction in 2007 and even more severe financial collapse in 2008 and subsequent global recession. The market will nevertheless stabilise, correct reform and recover over time.

The purpose of this chapter is to consider the origins and historical development of money, banking and credit. The development of international finance is considered with the growth of earlier foreign debt markets and then the spectacular expansion of the euro-dollar markets with the international syndicated loan and euro bond market. Shorter duration capital markets are noted including the euro note and commercial paper markets with other revolving and multiple issuance facilities. The origins of the modern markets in financial derivatives are considered and then the latest securitisation and structured finance markets. Reference is made to other innovative sectors including Islamic finance. The development of the international finance system is reviewed with some recent instances of financial crisis and scandal. Final conclusions are drawn with regard to the need to preserve international financial stability and avoid crisis and collapse.

1. MONEY AND COINAGE

Money carries out a number of key functions including acting as a unit of measurement, means of exchange and store of value. A number of other more general and specific functions can also be identified.[2] Money was originally used as a unit of account to measure value in barter transactions[3]. Early forms of money took various forms including glass beads,

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[1] G A Walker, *Introduction to Financial Markets - Financial Function, Financial Regulation and Financial Future* (2009) unpublished. See also Mckinsey 'Global Capital Markets – Entering a New Era' (September 20 2009).

[2] Specific functions including unit of account and common measure of value, medium of exchange and means of payment and standard for deferred payment and store of value. General functions include acting as a liquid asset, providing a framework of prices for a market allocative system, acting as a causal medium within the economy and as a means of control within the economy. Glyn Davies, *A History of Money* (University of Wales Press Cardiff 2002) 27-28. See also John Chown, *A History of Money from AD 800* (Routledge London 1994); and Niall Ferguson, *The Ascent of Money* (Penguin London 2008).

[3] E H Quiggin, *A Survey of Primitive Money: The Beginnings of Currency* (Methuen London 1949).

seashells and salt as well as livestock and agricultural produce and later various forms of metal coinage including copper, silver and gold.[4] The first coins were made from an alloy of silver and gold electrum in 800 BC. Modern silver 'pounds', 'shillings' and 'pence' units were reintroduced by Charlemagne in 800 AD.[5]

Kindleberger refers to the history of money as one of continuous innovation in the discharge of its functions of measuring value and exchange while avoiding the limitations of barter.[6] The objective has always been to protect the value of money from damage or debasement and ensure sufficient quality to support trade. Attempts were also made to develop new forms of money (in the form money substitutes) to deal the problems of transportation and security difficulties in moving heavy coinage or gold or silver bullion. This would subsequently be achieved through the development of bills of exchange and promissory notes (including banknotes) and cheques (which are legally bills of exchange drawn on bankers) and other more modern forms of electronic payment.

2. BANKING AND CREDIT

The provision of finance and credit was historically initially limited either to close family relations or within land holding relationships and then later to immediate merchant or trade counter parties. The intervention of formal financial institutions more generally only become necessary where longer term credit was involved or some geographic distance existed. The development of more formal financial or credit facilities has then occurred with the increased trade that took place at the end of the medieval period and associated increases in national and regional commercial mercantile dealings. This was associated with the emergence of the early towns and cities during this period and with the expansion of local, regional, country and then cross-border markets and fairs.

(1) Ancient Period

While modern banking is generally credited to the Italians in the 12th and 13th centuries, early forms of credit, deposit-taking and money-changing did exist in the ancient world. Banking was practiced in the temples of Babylon in Mesopotamia as early as 2500 BC[7]. These practices were then taking forward by the Greek money-changers and money-changer bankers. These *grapezites* carried out a range of money exchange or changing, deposit-taking and payment services.[8] Money changers increasingly became deposit takers as coinage was standardised. By the first 3rd century BC payment could either be made through a written order for payment, a giro transfer (with a bank as intermediary) or an early form of advice note or cheque (payment direction to a bank).[9]

The Greek city states developed early forms of monopoly banking to guarantee income. Public or state banks (*demosiaia trapezai*) were also developed from the late 4th century BC. Money-changers operated in Rome from the end of the 4th century BC before the city even minted its own currency. Early managers of silver (*argentarii*) then evolved into money-changer bankers by the 2nd century BC (*trapezita* or *trapessita*).[10] These early forms of banking generally fell into disuse between the 5th and 11th centuries.[11]

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[4] On money as a social institution and public good, James Tobin, *The New Palgrave Dictionary of Money and Finance* (Macmillan London 1992) vol.2 770-779.

[5] Chown (n 2) 4 and 18.

[6] C P K Kindleberger, *A Financial History of Western Europe* (Allen & Unwin London 1984) 17.

[7] Valuable assets including cereals and money were placed in the storerooms in the temples for safekeeping. The priest could then lend portions of these assets to those requiring food or money. Michael Rostovtzeff, *The Social and Economic History of the Hellenistic World* (Oxford 1953) Vols. I-III. See also B Bromberg, 'The Origin of Banking: Religious Finance in Babylonia' *The Journal of Economic History* (1942) 2, 77-88. For discussion, R Bogaert, R Brion, G Kurgan-Van Hentenryk, J-L Moreau and H Van der Vwee, *A History of European Banking* (Mercatorfonds Antwerp 2000), Part I.

[8] Early money changing was complex due to the large number of different standards in operation and up to 2,750 different coins in circulation.

[9] Bogaert *et al* (n 7) Ch. 2.

[10] While all of the earlier banking techniques were applied by the Greeks and Romans including deposit taking, on-lending, payment transfers and account entries, the scale of these operations was still relatively limited. Early bankers did not finance and support industry and commerce in the same manner as today. Bogaert (n 7) 68. Bogaert (n 7) 44-70. See also T Frank *et al* , *An Economic Survey of Ancient Rome* (Baltimore 1933-1940) 4 vols; A H M Jones, *The Later Roman Empire 284-602: A social, economic and administrative survey* (Oxford 1964) 3 vols.

[11] Rome was sacked by the Germanic tribes in 476 AD with the only banker surviving by AD 600 working for the Pope. Classical banking on a limited scale did continue in the Eastern Roman Empire although only on a small scale. The collapse of trade and commerce during the Middle Ages restricted its development. The only principal activity to survive in the West was money-changing. Herman Van der Vwee, *European Banking in the Middle Ages and Early Modern Times (476-1789) in Bogaert* (n) Part II. [Ginette Kurgan-Van Hentenryk, 'European Banks in the 19th and 20th Centuries' in Bogaert (n 7) Part III.] [Ginette Kurgan-Van Hentenryk, Rene Brion and Jean-Louis Moreau, 'European Banks since the Second World War (1944-2000)' in Bogaert (n 7) Part IV.]

(2) Italian and Dutch Banking

The business of modern banking began with the pawnbrokers, money-changers and deposit banks in Italy in the twelfth and thirteenth centuries.[12] The early banks developed in the Tuscan towns of Florence, Sienna and Lucca, although they subsequently spread to Venice and Genoa and later to all of the major cities in Europe including Amsterdam and London.[13]

Following the Bardi and the Paruzzi in the fourteenth century, the largest bank in Italy in the fifteenth century was the Medici. In the sixteenth century, the Italians were replaced by the Germans from Augsburg and Nuremberg, who dominated the fair at Lyons and Frankfurt, the Bourse of Bruges and later Antwerp.

Of particular importance were the Fuggers of Augsburg who developed from wool traders to bankers to the House of Hapsburg to elect Charles V as Holy Roman Emperor, although the Bank collapsed in 1557 when Philip II, son of Charles V, ordered payments to his creditors to be stopped.[14] The Fuggers were, however, particularly significant in developing modern financial intermediation involving borrowing funds from retail customers and then lending wholesale with a return based on the saving in transaction cost for the borrowing government.

At the end of the sixteenth century and the beginning of the seventeenth century, financial supremacy moved to Amsterdam, with the Bank of Amsterdam being established in 1609, which was the first deposit bank outside Italy and Spain whose bank money went to a premium over coin because of its assured high-quality and ease of handling.[15] The first state deposit bank had been the *Casa di San Giorgio* in Genoa in 1407. The early deposit banks did not create money as such and operated on a system of 100 per cent reserves with no discounting or lending facilities. Although the Bank of Amsterdam was not a lending or discounting bank as such, and operated of a full reserves basis, lending was made to the City of Amsterdam and the East India Company during the seventeenth century and in the 1780's. Following the Napoleonic Wars and the movement of the precious metal trade to Hamburg, the Bank turned into the Netherlands Bank.[16]

The first central bank was the Capital Bank of Sweden (Riksbank) which was taken over by the state in 1668, although it had been formed in 1656 as an exchange and lending bank with the two departments being operated separately. The exchange section was modelled on the Bank of Amsterdam with the lending operations modelled on the Bank of Lending which had been set up in Holland in 1614, although it had failed to develop. The strict division between operations is similar to the separation of the issue and banking operations of the Bank of England established under the Bank Act of 1844.The Bank issued the first banknotes in Europe in 1661, following the issuance of 'copper' notes by copper companies in Sweden as a substitute for payment in coin. Although goldsmith receipts in England were circulated in the seventeenth century, the Swedish copper notes of 1661 were the first banknotes.

Usury had remained a problem in the development of banking with the Church's ban on charging interest on the lending of money to others. Usury was banned under the Bible in Deuteronomy 23:19-20 and Exodus 22:25. Usury by the members of the clergy was banned under the Council of Nicea in 321 which was extended to all church members by Leo I. Various means of avoiding the restrictions were developed including payments for actual loss (*damnum emergens*) and opportunity loss (*lucrum cessens*) as well as penalty payments made on the rolling over of loans (*poena conventionalis*) as well as partnership arrangements (including *contractus trinius*)[17]. Charging interest was permitted in England under Henry VIII and Elizabeth I although ceilings on permitted interests rates were lowered from 10% to 5% under Queen Anne in 1713[18]

(3) English and Scottish Banking

In England bankers developed from jewellers and lapidaries (working with stones, gems or other minerals) in the seventeenth century, although the paper of scriveners (scribes) became as important as that of the banks.[19] While the goldsmiths did lend to James I and Charles I, the main source of funding was from tax farmers.[20] It has been claimed that

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12 The money-changers which later became exchange bankers originally had benches or *banca* from which the word 'bank' was derived.

13 Lending to English kings in the thirteenth and fourteenth century resulted in considerable losses to the Cicciardi of Lucca and the bankrupting of the Bardi and the Paruzzi of Florence following Edward III's default in 1348.

14 Kindlberger (n 6) 45.

15 Kindlberger (n 6) 18.

16 (n 6) 49.

17 Chown (n 2) 119-122.

18 Kindleberger (n 6) 41.

19 Tawney, 1925 at 98.

20 See Ashton, 1960 at 14.

English banking developed from goldsmith's paper although this is questioned by a some scholars.[21] While paper money began with repayment orders issued by the Treasury with *Tallies* which were made assignable by Parliament in 1667, the origins of more durable paper money began with the Bank of England in 1694.

England had undergone a period of considerable trade expansion in the second half of the seventeenth century although it was slow to develop banking markets, in particular, on model of the Dutch Bank of Amsterdam. By the time the Bank of England had been founded in 1694 there were 30 public banks on the Continent.[22] There had been a number of early proposals for a public bank in England before 1694, although none received any general support. The earlier proposals included the establishment of several banks in England to lend to needy persons for consumption in 1571 and the establishment of municipal, commercial and deposit banks and clearing houses in every town, the profits from which were to be used to rebuild London in stone or brick instead of wood. This was not achieved before the fire of 1666. Other proposals against usury, to promote deficient payments, to develop public improvements, to spread credit through England. Another proposal was to introduce banks in a number of towns 'to issue negotiable bills for deposits' and quicken the revolution of money and credit. Another suggestion involved operating a national bank on the security of public land designed to capture the business of 'all nations' under a syndicate that would otherwise employ the poor at improving and cultivating land and developing inventions as well as operating the herring fleet and using the profits to run the Navy.

There were also other less complex proposals concerned with improving the transfer of payments in trade. Rather than serve any more general social or public purpose, however, the Bank of England was established to assist the marketing of national debt to finance the Nine Years' War with the French from 1688 to 1697 and to profit from lending newly issued bank notes. Kindlberger notes that this tension between the private and public purposes of the Bank continued through the nineteenth century. The immediate effect of the establishment of the Bank, in particular, did not improve money supply but worsened it through exacerbating wartime inflation and brought forward the decision to undertake a silver recoinage.[23]

The stockholders of the Bank, who included a wide range of City financiers, Amsterdam investors including the Huguenots, recently expelled from France, Jews and English residents abroad, provided the state with £1,200,000 in exchange for a perpetual annual payment of £100,000. Rather than evolve from goldsmiths or a merchant elite serving its private interest in achieving a more efficient payments mechanism, Kindlberger notes that the largest part of the capital may have been provided from the cash surpluses of wine merchants as a result of the cutting-off of England from wine imports. It is, however, significant that the Bank was established six years after the Glorious Revolution of 1688 which, in particular, involved Parliament taking back the power to spend from the Crown and with it the power to borrow money. This limitation of the powers of the monarchy also reduced the risk of arbitrary seizures of concentrated assets as occurred in 1640 and 1672. Kindlberger notes that it was not an accident that banking was initially most advanced in the Netherlands and England where absolutist government had been overturned.[24] The subsequent conduct and practice of banking would then be most fully developed in Scotland during the eighteenth and nineteenth centuries.[25]

3. EURO-DOLLAR MARKET

Foreign securities issues developed in the early half of the nineteenth century through to the beginning of the twentieth century in the form of domestic security issues in the currency of the country of issuance.[26] Until the beginning of the First World War, the stable conditions which developed during this period allowed the substantial growth to be achieved within this market.[27] Although markets were established in London, Paris and Berlin during the nineteenth century, the most substantial growth was in London.[28]

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21 See Tawney and De Roover cited in Kindlberger (n 6) at 51.

22 Kindlberger (n 6) 52.

23 Kindlberger (n 6) 53.

24 *Ibid.*

25 G A Walker, *Scottish Banking* (2009) unpublished. See also C G Checkland, 'Banking History and Economic Development: Seven Systems' *Scottish Journal of Political Economy* [1968 15:144-66]; and S G Checkland *Scottish Banking: A History, 1695-1973* (Collins Glasgow 1975). The Scottish model was re-examined by White in 1984 and 1990. L H White, *Free Banking in Britain: Theory, Experience and Debate, 1800-1845* (Cambridge University Press Cambridge 1984); and L H White, 'Scottish Banking and the legal restrictions of theory: A comment' *Journal of Money, Credit and Banking* [1990 22:226-36]. See also Tyler Cowen and Randall Kroszner , 'Scottish Banking before 1845: A model for laissez-faire?' *Journal of Money, Credit and Banking* [1989 21:221-31]. For comment, Tyler Cowen and Randall Kroszner, 'Scottish Free Banking' *The New Palgrave Dictionary of Money and Finance* (Macmillan London 1992) 398-200.

26 While lending was principally provided by the major banking families during the first half of the century, this shifted to wealthy individuals in the second half. The Gold Standard also eliminate currency and revaluation risk. George Dosoo, *The Eurobond Market* (Woodhead-Faulkner, Hemel Hempstead 1992) 4-5.

27 Through the century the demand for foreign bonds by wealthy individuals developed as a result of the unequal distribution of wealth and income and regressive tax regimes with no restriction on the import or export of capital.

This was interrupted by the currency and market disruption created as a result of the First and Second World Wars.[29] After the Second World War, New York replaced London as the leading international financial centre although this was still only through the issuance of Dollar debt to domestic and foreign investors with the debt being traded in New York[30].

The emergence of separate Euro-dollar market begins in the late 1950s and earlier 1960s. The first Euro-bond was issued by the Italian highways company Autostrade in July 1963 backed by S G Warburg & Co.[31] The bond was a 5.5% guarantee bond for US$50m maturing between 1972 and 1978. The first syndicated Euro loan was entered into in Hungarian Aluminium Industry in June 1968.[32]

The creation of the Euro-dollar markets arose as a result of certain political events and financial opportunism as well as the general availability of dollar surpluses in Europe during the later post-war period. Soviet and Eastern Bloc countries initially transferred US dollar balances from the US to European banks to avoid potential forfeiture and loss.[33] Once the European banks realised that these deposits could be profitably applied, further funds were actively attracted.[34] London banks were particularly anxious to use the new dollar deposits to avoid restrictions imposed on the use of sterling after the Suez crisis in 1957.[35] As Euro-dollar deposits were not subject to domestic bank reserves requirements, this also increased the profitability.

During this period of relative peace after the Battle of Waterloo in 1815, the expansion of the market for foreign bond issues was increased as governments could not cover balance of payment and budget deficits with domestic savings or taxation while the development of the underwriting system for new issues created a high level of stability in the market for international capital (n 3) pp 4-19.

[28] Dufey and Giddy, *The International Money Market* (1978), 36.

[29] Foreign loans were still issued in sterling until the late 1920s. The US dollar and French franc had nevertheless become the strongest currencies after WWI due to the stabilisation measures adopted. Some co-ordination of issues was exercised in London and a capital issues committee later being established. The markets were otherwise generally unregulated until the early 1930s. The international capital markets were significantly damaged with the stock market crash in October 1929 and the following Great Depression with the loss of confidence caused. Dosoo (n 26) 6.

[30] New York and Zurich were the only markets not damaged by WWII. Europe had a US$25bn trade deficit with the US between 1946 and 1950. All of the major currencies apart from the US dollar and Swiss franc were devalued in 1949 which created further concerns with regard to the available of dollars and international liquidity. Aid was provided through the Anglo-American Financial Agreement and the Marshall Plan with foreign issues also being raised on the New York Stock Exchange. The World Bank issued the first international bond after WWII in 1947 with other issues being made by the Canadian Government in 1949, Norway in 1951, Belgium in 1952 and the European Coal and Steel Community (ECSC) in 1954. Foreign denominated issues were nevertheless limited due to concerns with currency risk and lack of available funds with the high demand for domestic borrowings.

Between 1950 and 1957, earlier US surpluses switched to US$10bn deficits. This increased to US$28bn by 1964. Council of Economic Advisors, *The Annual Report* (1970) 277. European borrowers also obtained a further US$14bn of funding on the US (Yankee Bond) market between 1946 and 1963 despite the high costs and regulatory burdens imposed by the SEC. Exchange controls were then relaxed between 1956 and 1958 with currency convertibility being restored in a number of countries. The United Kingdom and the Netherlands made a number of issues although denominated in their own currencies. Dosoo (n 26) 8-9.

[31] Philips had issued US$ debt in the Netherlands in 1949 and 1951 with the Portuguese company Saccor issuing a US$5m European Unit Account (ECU) 17 year bond in 1961. The 1963 Autostrade was nevertheless the first bond issued in a foreign currency of the borrower which was internationally syndicated and distributed outside the issuer's home country with the bonds being in a bearer form but listed on two public exchanges with interest being paid gross and free from withholding taxes. Dosoo (n 26) 26-27. The bond was a 5.5% guaranteed for US$15m maturing between 1972 and 1978. The bonds were for US$250 each with an annual coupon payment. Warburg had initially structured the bond for the European Coal and Steel Community (ECSC) although it was subsequently taken to the Italian state holding company of Autostrade, the Instituto per la Ricostruzione Industriale (IRI). The bonds were to be listed on the London and Luxembourg stock exchanges. It is reported that it took six months to deal with all of the legal and regulatory issues that arose. Dosoo (n 26) 26.

[32] (n 59).

[33] Dosoo (n 26) 10; and J Revell, *The British Financial System* (1973) Ch.11. The funds were, in particular, placed with Moscow Narodny Bank in London and the Banque Commercial Pour Europe du Nord in Paris. The telex address of Moscow Narodny was 'Eurobank' which is one explanation for the origin of the term 'Euro-dollar'. Dosoo (n 26) 10.

[34] The London acceptance house Brown Shipley & Co Ltd, in particular, enticed dollar balances of British insurance companies from the London clearing banks. Revell (n 33) 295.

[35] The US Government had also actively sold sterling in disapproval of the UK Government's involvement in the Suez war. In response, the Government attempted to reduce the role of sterling in international trade, the effect of which was for UK banks to look for US dollar deposits to support their trade finance activities. Dosoo (n 26)

A large number of US banks and investment houses had also set up branches in London which attracted US dollar deposits. These had been established to support US corporate investment in Europe in the post-War period. The expansion of the market was also supported by the Bank of England[36] and by other Western European governments. [37].A number of US regulatory obstacles also contributed to the subsequent growth and expansion of the market.

The highly regulated nature of European financial markets during the post-War period and maintenance of restrictions on capital mobility meant that London emerged as the natural centre for the new markets. The City of London's open and liberal trading environment as well as stock of professional expertise and resources allowed it to become the natural focus for the new Euro-dollar based capital market. This new marketplace then arose partly as a result of the highly regulated nature of both the US and European markets as well as the financial opportunities available in London. While London lost its position as the centre of the international gold standard, it then emerged as the champion of the euro-dollar markets from the 1950s onwards.[38]

Once established, growth in the new markets was spectacular.[39] Subsequent expansion was supported by a number of parallel factors. This included sharp rises in inflation and increased interest rate volatility and exchanges rates after the introduction of floating currencies during the early 1970s. Adjustments in international savings and investment patrons, deregulation, technological advances and increased domestic and international competition as well as a more general expansion in the demand for financial innovation.[40]

Although referred to collectively as the Euro-dollar markets, this is made up of threes separate sub-markets involving a separate loan-based syndicated credit market as well as a transferable security or bond market and an underlying inter-bank or deposit market.[41] While early growth was most substantial in the syndicated loan markets, the bond markets became increasingly dominant especially during the early 1980s as part of a larger process of securitisation of international claims. While bonds were initially principally sold to private investors[42], institutional investors later played an increasingly substantial role. The US authorities had also attempted to attract dollar lending back with the re-opening of the Yankee bond market in 1975 although this was unsuccessful due to the continued unattractiveness of the domestic regulatory controls and withholding tax imposed and prohibition on the use of bearer instruments. Further growth in the early 1980s was stimulated by the low interest rates both in 1982 and 1986 and de-regulatory initiatives adopted in many other countries. Average issue size grew from US$70m in 1980 to US$120m between 1981 and 1987 and to US$250m by 1991.[43] While high creditworthy borrowers can often obtain financing at lower costs on the bond markets, the international syndicated loan market still remains of importance for lower quality borrowers and in connection with more complex funding arrangements.[44]

The Euro dollar markets principally then consist of the Euro deposit and inter-bank market, the syndicated loan and bond markets, although this also includes the a certificate of deposit (euro CD) sector and floating rate certificate (euro FRCD) sectors. Banks may also make available credit lines denominated in one or more euro currency (which are referred to as 'euro lines'). Interest rate and currency swaps may also be used.[45]

(a) Euro Deposit and Inter-Bank Market

The Euro market or Euro dollar market refers to the market for dollar deposits that banks can borrow from each other. Euro-dollar deposits date from 1949 with the Chinese government and then the Russian government transferring dollar assets to Paris and London to insulate them US freezing orders. The Chinese transferred the dollars to the Soviet-owned *Banque Commerciale pour l'Europe du Nord* with the Russians later transferring funds to *Banque Commerciale* and to the Moscow Narodny Bank in London.[46] The cable address of the *Banque Commerciale* was 'Eurobank' with the

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[36] Governor of the Bank of England, Lord Cromer, *Bank of England Quarterly* (1962) 11, 265.

[37] West Germany realised that the market would be a useful device for off-loading its US dollar reserves. Italy also initially supported the availability of additional funds although subsequently resented the flight of capital from Italy to Switzerland during the 1960s. Dosoo (n 26) 11.

[38] G A Walker, *International Banking Regulation – Law, Policy and Practice* (Kluwer Law London 2001) Ch 1.

[39] The total volume of Europe currency loans, for example, grew from US$4.7bn to US$459bn between 1970and 1988. Walker (n 37) n13

[40] BIS, *The International Inter-Bank Market: A descriptive study* (July 1983). See also the Cross Report (n) 7-15.

[41] Walker (n 37) Ch.1

[42] Often referred to as the 'Belgian Dentist' individuals were attracted by the bearer nature of the instrument and absence of withholding taxes.

[43] Dosoo (n 26) 2

[44] Scott and Wellons, *Cases on International Securities Regulation* (University Casebook Series).

[45] Arun Kumar Sarwal, *International Handbook of Financial Instruments and Transactions* (Butterworths London 1989) 89.

[46] Sarwal (n 45) 93.

deposit funds being referred to as 'Euro-dollars'. The market developed through the 1950s with London emerging as the principal international centre. A substantial balance of dollar deposits was accumulated in Europe after the War[47] with the stability of the markets being secured under the Bretton Woods system of fixed exchange rates.[48] High reserve requirements were also imposed on US dollar deposits under Regulation D[49] with interest rate ceilings being introduced between 1968 and 1980 under Regulation Q. A further interest equalisation tax (IET) was also imposed in 1964 on the purchase of foreign bonds by US investors.[50] Currency convertibility was also restored in 1958 with London having the most open and lightly regulated markets in contrast with those in US and Continental Europe.[51] London also had the natural advantage of being between the US and Asian time zones and with being politically neutral.[52] Other banks were attracted to London to deal in the new dollar inter-bank deposit markets or by using tradable certificates of deposits (CDs) evidencing underlying dollar deposits.[53]

(b) Euro Term Lending

Euro dollar syndicated lending can be considered to have had its origins in US domestic syndications. The first corporate term loan in the US was to American Metals Company by First National Bank of Boston (FNB) under Serge Semenenko in 1934.[54] Following Glass Steagal in 1933, commercial banking business had developed on the basis of using short 3-6 month advances to companies to fund trade transactions or working capital.[55] Rolling short-term advances were then converted into a longer-term loan to create parallel financing to the US domestic bond market. Corporate medium-term lending then became increasingly important after 1954 with the relaxation of the rules on accelerated depreciation by the US Internal Revenue Service (IRS). Syndicated term loans were then introduced to provide larger facilities on the borrower's request. Separate loans would then be provided using common documentation with lead bank not receiving any separate agency or management fee but providing a larger proportion of the total credit. The process was managed by the borrower with no separate underwriting.[56]

US banks were then able to obtain further funding through the expansion of the US domestic certificate of deposit (CD) market led by First National City Bank (subsequently Citicorp) in 1962 and then with the euro dollar CD market. Negotiable CDs allowed US banks to avoid the interest ceilings imposed under Regulation Q[57]. The Federal Reserve was concerned about the expansion of euro dollar credits although it was unable to restrict this. McDonald notes that repeated attempts were made between 1966 and 1974 to limit credit growth by US commercial banks including through Regulations D and M and Regulation Q interest ceilings. US banks were able to obtain US$3.3bn in 1966 and US$13bn in 1969 to profit from arbitrage opportunities that arose. The imposition of reserve requirements on euro dollars forced the banks to issue commercial paper with repurchase agreements and bankers' acceptances not subject to re-discounting. This was followed by the creation of euro-CDs and regional centres through which US banks could access euro dollar including Bahrain, Singapore and the Bahamas.[58]

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[47] Walker (n 38) 51.

[48] Walker (n 38) 50.

[49] Walker (n 38) 52.

[50] Walker (n 38) 53.

[51] The development of the euro-dollar markets was supported by the Government and the Bank of England. See Governor of the Bank, Lord Cromer, *BEQ* (1962) No.11, 265. It was nevertheless not expected that the markets would grow substantially during this early period. The Governor also noted after the first euro bond issue in 1963 that 'I think it unlikely that the volume of this type of operation will grow to grow to any very great extent' Kynaston, *The City of London* (1995) vol.4, 280. It is also reported that trading in dollars was taken forward by Sir George Bolton, the foreign exchange trader and Executive Director at the Bank of England between 1948 and 1957, following his move to the Bank of London and South American (BOLSA). Richard Fry, 'Introduction to Sir George Bolton' *A Banker's World* (1970) 32-7.

[52] Charles P Kindleberger, *A Financial History of Western Europe* (n 6). Kindleberger refers to the debate that arose with regard to the extent to which the euro-dollar markets created money and extended the monetary base. Milton Friedman argued that the amount of dollars within the system would be multiplied as banks on lent this (subject to retaining a reserve). Klopstock noted that this would not occur where the dollars were spent in the US and not returned to the euro currency markets. Kindleberger notes that Klopstock was correct during the initial stages where multiplier effects were limited although Friedman's effects arose where the funds were retained within the market as it expanded over time. (n) 451.

[53] The euro currency dollar market expanded to US$3,000bn by 1989 with average euro CDs being in amounts of US$100bn. Sarwal (n 45) 89.

[54] Martin Mayer, *The Bankers* (W H Allen 1976) 57.

[55] This was referred to as 'classical business'. Robert P McDonald, *International Syndicated Loans* (Euromoney publications 1982) 24.

[56] McDonald (n 54) 25.

[57] Marcia Stigum, *The Money Market: Myth, Reality and Practice* (Dow Jones-Erwin 1978) [399-416].

[58] McDonald (n 54) 30.

Euro medium-term lending developed with 5-7 year durations based on 3 to 6 months euro deposits which terms were later extended to between 40 and 50 years. The first full syndication would appear to have been the US$15m facility for the Hungarian Aluminium Industry in June 1968 managed by Bank of London and South America (BOLSA).[59] Syndication business quickly expanded from US$2b in 1968 to US$11bn by 1972 and US$25bn by 1974. Syndicated lending was almost US$180bn by 1981. Market growth expanded as more overseas banks opened offices in London[60]. Business was originally dominated by UK merchant banks and then US investment and money centre banks either through London Eurocurrency departments or full subsidiaries. Initial borrowers were principally US corporates although the market shifted in 1972 with US companies returning to the US and European public entities, corporates and sovereign borrowers entering the euro dollar market[61]. The market enjoyed an initial boom and bust cycle in 1973-75 and then substantial expansion during 1975-76 and then a more protracted slowdown in 1977-79. Issuance recovered again between 1980-82.[62]

(c) Euro Loan Market

The Euro loan market refers to the lending of dollar deposits obtained in the euro-dollar markets to sovereign borrowers and multinational companies or governments rather than solely on an inter-bank basis. As these were in large amounts, loans would be made by banks on a syndicate or group basis with the first syndicated euro loan being in 1958.[63] Loans would be advanced on the basis of a term loan agreement which set out all of the relevant terms and conditions with additional provisions being included governing the rights and obligations of the bank syndicate members.[64] Although initially issued on bank or law firm terms, these would later be standardised such as under the Loan Market Association master agreement.[65] Euro currency lending grew substantially from US$5bn to US$500bn between 1970 and 1988.[66] Euro lending did decline during the 1980s as the euro bond market expanded although this remained a key area of activity especially for less creditworthy borrowers or more complex transactions including project finance deals.[67]

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59 Eight banks were involved with the issue being guaranteed by the National Bank of Hungary. McDonald (n 54) 31.

60 There were 28 foreign banks in London in 1900, 66 in 1950, 163 in 1970, 263 in 1975 and 353 by 1980. McDonald (n 54) 29.

61 US companies had used the euro dollar market in 1968-70 due to high domestic rates and tight money although this was reversed with the introduction of lower rates, monetary relaxation and 7.9% devaluation in the dollar under the Smithsonian Agreement in December 1971. This had led to the press referring to the end or demise of the euro dollar market within less than a decade of its creation. See, for example, McDonald (n 54) 33.

62 Volumes and spreads were specifically affected by the Iranian debt crisis in 1979, the Polish debt crisis in 1981 and the Latin American debt crisis in 1982. McDonald (n 54) 37-56. The euro dollar market has been described as being fundamentally an inter-bank market with inter-bank liabilities making up two-thirds to three-quarters of aggregate liabilities of euro banks. Richard J Herring, 'The Inter-Bank Market' in Paolo Savona and George Sutija, *Euro Dollars and International Banking* (Macmillan Basingstoke 1985) ch.3.

From a policy perspective, the euro inter-bank market significantly expanded liquidity and intermediation although this avoided national regulatory and fiscal control. There was also concern from an early stage that the effectiveness of the market itself could increase the risk of contagion and instability. For comment, Herring, 'The Inter-Bank Market' (n) 118-119 [By 1982, there were over 1,000 banks in the market from over 50 countries. G30, (1982) 16.

63 McDonald (n 54) 24. Sarwal refers to the first syndicated loan being in 1968 (n) 89. [The London acceptance house Brown Shipley & Co Ltd also enticed dollar balances of British insurance companies from the London clearing banks. J Revell, *The British Financial System* (1973) 295 cited in Walker (n 37) 6.

64 These would include the principal financial terms (principally amount, duration and interest), obligations (including conditions precedent and subsequent, representations and warranties and continuing obligations) and events of default. The syndicate roles would generally deal with severality, equality and pro rata payment. Chapter

65 The LMA was set up [ ]. It now provides a range of standard terms and conditions for single and multi-currency term lending including . These provide standardised definitions and general rights and obligations although certain provisions are adjusted on a bank, firm or ad hoc basis such as with regard to financial covenants. Chapter

66 The total volume of euro currency loans increased from US$4.7bn to US$459bn between 1970 and 1988. Walker (n 37) n13.

67 The gross size of the total euro currency market reached US$1,930bn by 1981. The syndicated loan market nevertheless fell from US$100bn to an annual US$25bn between 1981 and 1985 as the international bond and note market expanded from US$44bn to US$160bn. This was part of a larger process of securitisation with the transfer of inherently non-transferrable loan-based debt to a tradable security based format. This was supported by the gradual decline in long-term interest rates, the need for liquidity and marketability after the international debt crisis during the 1980s and comparative lending damage following national and foreign bank debt exposures. BIS, *Recent Innovations in International Banking* (April 1986) [The Cross Report] 2-5 cited in Walker (n 37) n16. [The euro dollar markets would later be driven by sharp rises in inflation and increased interest rate volatility and exchange rates following the introduction of floating currencies, changing flows of international savings and investment patterns, new regulatory

While the syndicated loan market contracted during the first half of the 1980s with the development of securitisation, it expanded again between 1986 and 1990 which principally reflected the need for increased funds by industrial borrowers in major OECD countries. Central government lending declined as sovereign borrowers switched to medium-term note and commercial paper programs.[68] The syndicated credit market retained a number of advantages[69] with its use expanding with the development of multi-option facilities (MOFs)[70] merger and acquisition related lending, the expansion of mezzanine debt[71] and expansion of the secondary market.[72] The market expanded again between 1991 to 1995 and contracted again following the Russian default in 1998.[73] The international syndicated loan market has been able to continue to develop and evolve as market conditions have changed. It remains a valuable and flexible form of funding especially in more complex deals and markets.

(d) Euro Bond Market

The euro bond market emerged as a parallel securities bond euro-dollar sector. This can be considered to be an extension of the short-term euro CD money market. This is considered to be the beginning of the modern international capital markets. While there had been foreign bond issues during the 19th century and during the 1920s and 30s, this was denominated in the local currency. The significance of the euro bond market was that the securities were issued in a country other than the country of issuance. The first euro bond issue was considered to be that by the Italian motorway operator *Autostrade* in July 1963.[74] The issue was led by Sir Siegmund Warburg of S G Warburg & Co with a syndicate of Banque de Bruxelles SA in Belgium, Deutsche Bank AG in West Germany and Rotterdamsche Bank NV in the Netherlands.[75] The offering was for US$50m on a 5.5% guaranteed bond maturing 1972-1978 with each bearer bond being in the amount of US$250. Allen & Overy were the legal advisors and Strauss, Turnbull & Co and L Messel

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developments in the form of deregulation and increased capital requirements, technological improvement and increased domestic and international competition levels as well as a more general expansion in the demand for financial innovation. BIS, *The International Inter-Bank Market: A Descriptive Study* (July 1983); and Cross Report 7-15 cited in Walker (n 37) n19.]

[68] Central government borrowing declined from 20% to 5% of the market after 1982. Industrial borrowings expanded from 45% to 81% and 88% by 1988 and 1989. Dollar facilities remained the largest section comprising over 60% of all syndicated loans. 'Developments in the international syndicated loan market in the 1980s' 30 *Bank of England Quarterly Bulletin* 71 (1990).

[69] The borrower obtains a stable source of funds through a committed credit facility. Larger sums can be raised rather than through the euro bond or short-term equity market. The deals can be arranged quickly and discretely. Commitments to lend can be obtained which can be used or cancelled easily without loss of investor confidence and price damage. (n).

[70] A MOF consists of a number of supporting credit and money market mechanisms including a committed revolving credit with other facilities to allow the borrower to raise funds on an uncommitted basis such as through 'tender panels' for multi-currency cash advances and bankers' acceptances or commercial paper or no issuance programmes.

[71] Mezzanine or subordinated debt was used to support corporate acquisitions and restructurings during the 1980s. US mezzanine debt consisted of non-investment grade (junk) bonds with European debt generally consisting of bank debt with equity warrants attached. (n).

[72] The secondary market in credit participations grew during the 1980s especially following the Less Development Country (LDC) debt problems at the beginning of the 1980s and the subsequent expansion of leveraged buyouts (LBOs). Banks would generally use novation, assignment or sub-participations to transfer commitments in the secondary markets. (n).

[73] Growth during the 1990s was focused on re-financing loans or acquisitions, infrastructure projects and core national industry investment such as in the telecommunications sector. 'Jumbo' loans were then used between 1999 and 2000 to support major mergers and acquisitions with US$30bn being borrowed for the hostile takeover by Vodafone of Mannesmann AG in Germany. A Green 'Surge in M&A comes to the rescue' *Financial Times* (19 May 2001).

[74] Vivian Jonckheere claims that the first euro bond issue was in 1949 and 1951 by Phillips NV in Amsterdam for US$25m with other private placements being offered by Jean Godeux and *Banque Lambert* in 1957, 1959 and 1960. Christian Hemain maintains that the first euro bond issue was for US$5m denominated in European units of account (EUA) for the Portuguese SACOR in January 1961. Evan Galbraith argues that the first syndicated share issue was by Neckerman Versand in February 1963 for DM81m organised through Morgan & Cie Paris. Ian Kerr *A History of the Euro Bond Market* (Euromoney Publications London 1985) 16.

[75] Warburg had wanted to offer the first euro bonds through the European Coal and Steel Community (ECSC) although there was no immediate interest. Warburg accordingly approached the Italian state holding company *Istituto per la Riconstruzione Industriale* (IRI) with its subsidiary *Autostrade*. George Dosoo, *The Euro Bond Market* (Woodhead-Faulkner Hemel Hempstead 1992) 26. The ECSC was considered to be the most sophisticated borrower in the international markets at that time although it was not in need of immediate funds and was reluctant to sever with its US fund providers. Kerr (n 75) 11.

& Co the stockbrokers.[76] The subscription agreement was signed by Alexandre Lamfalussy on behalf of *Banque Bruxelles.*[77] The term 'euro bond' is credited to Julius Strauss at Strauss, Turnbull in place of the 'foreign dollar bond' terminology.[78] The *Autostrade* issue was the first internationally syndicated foreign currency issuer distributed outside the borrowers' home country with the bonds being listed on an overseas stock exchange and being in bearer form with interest being paid gross and free from withholding taxes.[79]

These were followed by the euro-deutschemark bonds following the imposition of a 25% coupon tax in Germany and the first euro-Swiss franc bond. These were followed by the first convertible debentures for Japanese borrowers and bonds with equity warrants.[80] The first US issues were in 1964.[81]

The effect of these issues was to restore London's position as an international financial centre.[82] The market had grown to US$1bn by 1967 and then almost doubled the following year and tripled by 1971 and grew by over five times by 1972.[83] London's position had been strengthened by the imposition of the Interest Equalisation Tax (IET) by President Kennedy on 18 July 1963 which had the perverse effect of undermining rather than equalising US cost of borrowing.[84] President Lyndon Johnson announced the Voluntary Restraint Program (VRP) on 10 February 1965 to attempt to limit the outflow of US dollars which voluntary limits were formalised under the Foreign Direct Investment Program in 1968.[85] Issues were initially sold to wealthy private individuals or private banks acting for them including the main Swiss banks.[86] Individual investors would subsequently enter the market including Scandinavia and Greek shipping companies and Scandinavian insurance companies as well as the Central Bank of Israel and then the Fiduciary Trust Company of New York from 1964, the Commonwealth Crown Agents from 1967 and other banks including Moscow Narodny Bank and Hong Kong & Shanghai Banking Corporation[87]. The US measures in 1968 forced multinationals to borrow overseas led by Union Carbide, General Foods, 20th Century Fox and Gillette supported by US investment banks.[88]

Issuer credit quality was tightened up during the early 1970s following a rise in defaults and scandals including the collapse of Investors' Overseas Services (IOS) and fraudulent disclosures by Equity Funding Corporation NV.[89] The

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76 Preparations lasted six months which included negotiating with the Inland Revenue, the Stamp Office and the Bank of England and obtaining a listing on the London and Luxembourg stock exchanges. Dosoo (n 26) 26. Ian Fraser acted at Warburg and Geoffrey Sammons and Robin Broadley at Allen & Overy. Sir George Bolton assisted remove some of the obstacles at the Bank of England. Kerr (n 75) 14.

77 Kerr (n 75) 14 and 15.

78 Kerr (n 75) 14.

79 Dosoo (n 26) 26.

80 The first convertible debentures were issued at the end of the year on behalf of Canon Cameras, Takeda Chemical and Tijin with the first bonds with equity warrants being issued in 1964 on behalf of IRI's other subsidiary Finsider. The first major project finance related bond issue was for US$27.5m for the Trans-Alpine oil pipeline between Italy and West Germany in 1966. The first euro-Dutch gilder issue was in 1965 and euro-French franc bonds in 1967.

81 Mobil Oil launched a 15-year £10m/deutsch mark issue followed by US Cyanamid first US$ bond and Monsanto with the first convertible euro bonds. Dosoo (n 26) 28.

82 Ian Fraser of the Warburg advised *The Times* newspapers that he hoped that the Autostrade issue 'would mark a step forward in the process of re-establishing the position which the London capital market held before the War'. Kynaston (n) 279.

83 US$1.96m was issued in 1968, US$3.3bn in 1971 and over US$5.5bn in 1972. Kerr (n 75) 29.

84 (n).

85 The VRP guidelines operated on a voluntary basis and were intended to curtail direct investment outflows. These were made mandatory in January 1968 following the devaluation of sterling in November 1967 and the US balance of payment deficit. Kerr (n 75) 23.

86 Reference is commonly made to the 'Belgian Dentist'. This arose from the highly bureaucratic nature of Belgian tax system with domestic Belgian bonds being subject to tax at source. Bearer euro bonds could then be held in Luxembourg with the Luxembourg Bank collecting interest and crediting the account with a tax deduction. The largest private market was nevertheless in Switzerland rather than Belgium with up to 80% of all euro bonds being placed in Switzerland. Kerr (n 75) 20-21.

87 Kerr (n 75) 21.

88 The main US banks were Morgan & Cie (subsequently Morgan Stanley), White Weld (acquired by Credit Suisse First Boston), Kuhn Loeb (acquired by Lehman Brothers), Kidder, Peabody & Smith Barney. Major London firms included S G Warburg, Hambros Bank, N M Rothschild with major European banks including Deutschebank, Kredietbank, Dresdner Bank, Commerzbank, West LB and Paribas.

89 IOS had been set up in 1956 by Bernie Cornfeld to assist US servicemen and expanded to become the largest global international funds manager including investor in the euro bond market. IOS had purchased a number of bonds from questionable issuers introduced by Investors Bank Luxembourg. IOS was acquired by Robert Vesco who was later jailed for fraudulent misappropriation of funds with his company, International Controls Corporation (ICC) also going

Granite Overseas 6.25% convertibles also defaulted in 1976 which had been re-managed by *Banca Commerciale Italiana.*[90] Defaults in the market were nevertheless minor.

(e) Euro Clearing and Representation

The development of the euro bond markets was supported by the creation of clearing systems with Euroclear and Cedel. Euroclear was set up in December 1968 in Brussels by Morgan Guaranty Trust Company of New York[91] with Cedel being established in Luxembourg in 1970.[92] Euroclear and Cedel introduced computer based data processing and communication systems to deal with the difficulties that had arisen with delayed delivery and settlement on the euro bond markets by the end of the 1960s. The clearing houses allow for the safe custody of initial single global and subsequent definitive bonds on primary issuance and then secondary trading on a book entry basis. A ‘bridge’ was set up in 1971 to allow the settlement of transactions between the systems which was computerised in 1981.[93]

Securities lending and borrowing was introduced by Euroclear in 1976. Stock and cash lending was introduced in 1987. This allows efficient, low cost and secure transactions with the removal of settlement or delivery risk with the clearinghouse acting as a central counter party. Growth has been substantial subsequently. Transaction rates have grown from US$3bn weekly in 1980 to US$15bn per day by 1980. The systems process euro bonds, government bonds, euro notes, domestic and euro commercial paper, bankers’ acceptances and international equities in 26 currencies with over 2,200 participants. Euroclear processed approximately 75% of the market with Cedel have 35% although that had grown to around 40% by 1989.

A self-regulated trade association was set up for the euro bond markets with the Association of International Bond Dealers (AIBD) in 1969.[94] The AIBD was renamed the International Securities Markets Association on 1 January 1992. It was recognised as a designated overseas investment exchange and international securities self-regulatory organisation by the Securities and Investment Board (SIB) in the UK in 1988. While the ISMA was concerned with secondary trading, the International Primary Markets Association (IPMA) was set up to deal with primary issuers. Both organisations issued rules concerning primary and secondary dealing with other publications.[95] ISMA and IPMA were subsequently merged to create the International Capital Markets Association (ICMA) in [2005].[96]

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into default. The balance sheet of Equity Funding has been supported by the issuance of non-existent insurance policies. Kerr (n 75) 29-33; and Dosoo (n 26) 28-30.

[90] Equity Funding Corporation NV had offered US$25m 5.25% convertible debentures due 1989 in January 1969 through Paribas, New York Securities and *Banca Commercialie Italiana* and guaranteed by Equity Funding Corporation of America. Significant other banks were involved in the underwriting. Kerr (n) 33.

[91] Euroclear was set up with 40 participating banks. The creation of Euroclear was led by John M Meyer, Evan Galbraith, James Chandler and Jack Bochow. Concerns with the US single bank ownership of Euroclear by Morgan Guaranty led to its being sold on 4 December 1972 to 118 financial institutions with Morgan Guaranty International Finance Corporation only taking up the same number of shares as the other largest shareholders to remove its majority voting. A 5-year operating agreement was entered into with the Brussels office of Morgan Guaranty which was continued subsequently. Kerr (n) 98-100. Euroclear adopted the EUCLID system based on General Electric Mark III programming. Euroclear Clearance Systems was transferred to a Belgian co-operative company and then renamed Euroclear Clearance Systems Societe Co-operative in 1987.

[92] Cedel SA was set up in Luxembourg on 28 September 1970 as the *Centrale de Livraison de Valeurs Mobilieres*. Cedel was established to create an independently managed settlement system and one that could compete with the US dominated Euroclear. 71 banks from 21 countries subscribed for its initial capital with its first Chairman being Edmond Israel.

[93] This included interest collection and payment. Dosoo (n 26) 30. This followed an AIBD AGM resolution in 1971. Early transaction rates were low at 60-80 transactions per day although this has grown subsequently. Kerr (n) 101.

[94] The first official meeting was at the Great Eastern Hotel in London on 18 April 1969 although an original association was set up at the offices of Weeden & Co, Gillette House, Basinghall Street, London in 1967. Walter Imthurn looked to establish a London based association on the model of the Montreal and New York bond clubs. A Steering Committee was subsequently set up following a meeting of 19 bond dealers at N M Rothschild & Sons, St Swithins Lane, London on 28 October 1968. An 11-man Executive Committee was appointed at the Great Eastern Hotel meeting in April 1969. Rolf Hallberg was appointed first Chairman, Armin Mattle the Secretary and with Walter Koller chairing the Committee for New York and European Settlements and Stanley Ross the Standard Market Practices Committee. The agreed objectives of the group were (1) to promote friendly relations between member firms and representatives; (2) to provide a basis for joint examination, discussion and elimination of mutual technical problems; and (3) to maintain a close liaison with the international bond issuing houses.

[95] The ISMA issued the weekly Euro Bond Guide with a separate price-listing service and CUPID raw data service.

[96]

4. EURO NOTES AND PAPER

The fixed rate euro bond market would continue to develop with this being particularly attractive for sovereign and major corporate borrowers during low interest rate periods. Durations have nevertheless shortened from 10-20 years or more down to 3-7 years during the early 1970s. This would remain an important funding mechanism especially for international financial organisations or institutions such as the World Bank or the European Union agencies. The most significant early innovation was the creation of a parallel floating rate note (FRN) market with the fixed bond market beginning in 1969.

This was followed by the introduction of shorter duration instruments that could be rolled-over beginning with 3-6 months euro notes in 1978 and even shorter euro commercial paper based on the US domestic commercial paper market. Longer duration euro medium-term notes (euro-MTNs) were then introduced from 1985 with multi-option funding facilities (MOFFs) having been first used in 1984. Each of these new shorter duration instruments is considered in turn. With the introduction of floating rates and shorter durations, the markets were also characterised by 'pre-priced' deals and 'bought' deals and then with the development of revolving and then multiple option structures.

(a) Floating Rate Notes (FRNs)

Floating rate notes (FRNs) were developed in the early 1970s to allow companies to borrow on a floating rather than fixed basis. The first FRN was for 0.75% above LIBOR US$50m by the Italian national energy agency, *Ente Nazionale per L'Energia Elettrica* (ENEL), managed by S G Warburg and Bankers Trust International in May 1970.[97] Bankers Trust International raised a further US$75m for Pepsico in February 1970. The floating rate formula was developed by Evan Galbraith at Bankers Trust to create a more secure form of borrowing bridging the loan and bond markets. Debentures with floating interest rates had been offered previously such as with the Dreyfus Offshore Trust NV US$14.7m 5-year participating debentures although this was tied to a common share offering.[98] Opinion differs as to which was the first FRN issue. FRNs became common with rising interest rates during the early 1970s and the difficulty in placing fixed rate debt.

The first US$100m issue was by Morgan Stanley for Esso Overseas Finance NV in March 1971[99] and a further US$100m offer for New Zealand in 1971 by Kidder Peabody. Kidder Peabody also launched the first pre-price deal for New Zealand with a US$50m bond in 1975 without any open pricing[100]. Convertible issues became increasingly popular during the early 1970s[101] with other currencies also being used including specifically the Deutsch mark as the value of the dollar fell.[102] Growth was strong until October 1973 with the outbreak of the Middle East war and quadrupling of oil prices in 1974. US President Richard Nixon had announced the closure of the 'gold window' which precipitated the collapse of the fixed currency arrangements under Bretton Woods and the introduction of floating currencies. Nixon was forced to resign after Watergate with Edward Heath and West German Chancellor Willie Brandt also being removed from office. The FRN market closed during 1975 with low interest rates although bond maturities were cut from 10-20 years to 5-7 years.[103] The first euro yen issue and the first floating rate certificates of deposit (FRCDs) were in 1977[104] and the introduction of the 'grey market' in 1978[105] and the first currency linked swap and

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[97] The notes provided for 0.75% interest above 6 months LIBOR subject to redemption if the rate exceeded 13%. Warburg had identified ENEL following discussions between Peter Spira and Siegmund Warburg with Guido Carli, the Governor of the Bank of Italy, although the FRN mechanism was developed by Evan Galbraith and Dimitri de Gunzberg at Bankers Trust. Kerr (n) 35.

[98] The Dreyfus offer was in May 1969 and lead managed by Kuhn Loeb Inc with Kuhn Loeb advising Howard Stein, President of Dreyfus in the US, to use a floating rather than fixed rate coupon. Kerr (n) 36.

[99] The Esso issue was for US$100m euro bond with a 7 and a 15-year tranche.

[100] The pre-priced deal allowed for smaller syndicates to be used with fewer managing and selling agents although the risk of mispricing the issue increased. Dosoo (n 26) 36.

[101] The Eastman Kodak US$70m convertible in May 1968 was reported to have been US$530m oversubscribed. Jardine Matheson International NV offering 7.75% 15-year debentures with equity warrants attached in November 1971. Kerr (n) 41.

[102] The Deutsch mark had been revalued by 9.3% in 1969 and 13.6% in December 1971 following the Smithsonian Agreement.

[103] [The first dual currency bond was for A$30m for the Rural and Industries Bank of Western Australia with repayment either in Australian dollars or Deutsch marks in 1972 managed by the Orion Royal Bank.]

[104] The first FRCD was for US$10m for Dai-Ichi Kangyo Bank in April 1977 managed by Credit Suisse First Boston. Japanese city banks had been prevented from borrowing through the FRN market by the Ministry of Finance in 1977 with the FRCD mechanism being developed to allow them to obtain 3-5 years funds. This was followed by an issue on behalf of Sumitomo Bank with 'tap' FRCDs being introduced by Credit Suisse subsequently. Kerr (n) 48.

opening of the 'grey market' in 1979.[106] The first 'drop-lock' issue was in April 1979 for TVO Power.[107] The first convertible issue with the option to exchange into fixed debt was by Goldman Sachs for US$50m 10.75% convertible debentures for NICOR Overseas Finance NV in April 1980.

Markets were disrupted again by the second oil price crisis in 1978 and 1979. Paul Volker was appointed Chairman of Federal Reserve Board on 5 August 1979 and had to attempt to deal with a collapse in the value of the dollar with rising interest rates. (Jimmy) 'Carter' bonds were issued with separate Deutsch mark and Swiss franc tranches to support the dollar. Bond markets rallied between March and July 1980 following Carter's monetary and credit restraint program although the market fell between July 1980 and 1982. Credit Suisse introduced 'bought deals' in 1980 for General Motors Acceptance Corporation (GMAC)[108] with the investment bank undertaking to manage the whole issue including arranging the syndication, participation and underwriting[109]. The first US$1bn issue was for the Kingdom of Sweden on 5 January 1982.[110] The FRN market grew between 1980 and 1981 with the US 30% withholding tax being removed in July 1984. Commercial banks issued US$19bn of perpetual FRNs in the mid-1980s before the collapse of the market at the end of 1986.[111] Despite further innovations, the FRN as a whole collapsed in 1987 through increased competition and the availability of better rates in the fixed bond market or new shorter duration euro commercial paper market.[112] The dollar was supported under the Louvre Accord in February 1987 by the G7 although tensions continued, particularly, between the US and West Germany.[113] The New York Stock Market crashed on 16 October 2007 and the London market on 19 October 2007 despite the earlier promise of the UK 'Big Bang' under the Financial Services Act 1986. This led to a collapse in the FRN and fixed rate bond markets with investors only looking for higher quality sovereign debt.

(b) Euro Notes and Note Issuance Facilities (NIFs)

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[105] The grey market required managers to quote prices for issues before being officially priced. This replaced the earlier non-transparent system of discounting. Dosoo (n 26) 37-38. This led to bond brokers moving from the US to the UK. Brokers would typically charge a fee of 0.0625%. US style broking was transferred to London in August 1978 with Sandy Joyce of Purcell Graham. While initially resistant, bond brokers are now treated as an essential of the market. Kerr (n) 110-111. [On defaulted bond issues, Kerr (n) 113-114.]
Stanley Ross was considered to be the first to publish pre-issue prices for bonds at the end of 1978 with the first official grey market pricing for a US$200m Dow Chemical 9.625% loan in February 1979. This effectively brought the primary and secondary markets together. Kerr (n) 57.

[106] The first currency swap related bond was for the Royal Bank of Canada subsidiary, Royalease, in September 1979 for DM60m 6.75% notes due 1984 managed by Orion Bank with the Royal Bank of Canada and Westdeutsche Landesbank. The funds could be immediately converted into Canadian or US dollars with low cost original borrowing in Deutsch marks. Dosoo (n 26) 37; and Kerr (n) 56.

[107] Credit Suisse managed the US$30m issue with a 0.25% premium over LIBOR on the FRNs which would automatically be converted into 9% 12-year fixed rate bonds if the LIBOR fell below 9%. This was later used again for the Kingdom of Sweden with a US$150m FRN issue in 1979. The formula was nevertheless criticised with its mandatory rather than optional conversion and was not commonly used. Kerr (n) 57.

[108] This was a US$100m 13.35% 5-year note issue offered on 8 April 1980 managed by Credit Suisse. The deal had been initially offered to IBM. Kerr (n) 62.

[109] This is distinct from a 'standby' commitment (for any unsold issue) and a 'best efforts' commitment (best efforts to sell the issue). With the deal also being 'pre-priced', the bank assumes the market risk although it can still profit from selling the issue to investors at a price higher than the bought price. The underwriting can still be managed through smaller 'clubs'. Bought deals allow for competitive bidding which would not be possible under more traditional syndication. Dosoo (n 26) 40.

[110] US$1.2bn 10-year notes had been issued at 0.25% above LIBOR managed through Credit Suisse First Boston. This was followed by an EC US$1.8bn offering for France with a further US$1bn 20-year floating rate bond for Sweden in December 1983. Dosoo (n 26) 42; and Kerr (n) 75.

[111] Regulators had been concerned that banks had become the main purchasers as well as issuers of perpetual FRNs which concentrated rather than diversified risk. Bank ratings were reduced as the secondary market dried up and prices collapsed. Many perpetuals were repackaged although it was not expected that they would be commonly used again. Dosoo (n 26) 45.

[112] The FRN market had expanded substantially between 1984 and the beginning of 1986 with new currencies being introduced and market entrants such as UK building societies which were allowed to use the market under the Building Societies Act 1986. 'Reverse FRNs', 'high margin' FRNs and 'collateralised mortgage obligations' (CMOs) were also introduced. Margins had nevertheless narrowed with early redemptions increasing with a collapse in liquidity and market prices. Dosoo (n 26) 45.

[113] James Baker called on West Germany to increase growth on 12 October 1987 rather than contract contrary to the Louvre Accord.

Euro notes are short duration promissory notes issued by non-banking borrowers. These have durations for between 5 and 7 years and emerged as floating rate alternatives to shorter fixed bonds. The first euro notes were in the late 1970s and were issued by a non-US corporate borrower and then by a sovereign entity. The notes were generally underwritten which distinguished them from the even shorter duration commercial paper market which originally developed in the US in the late 19th century.[114] The first euro note was for the New Zealand Shipping Corporation in 1978 and managed by Citicorp with 3 or 6 months notes over a 6-year period.[115] The market for euro notes grew substantially during the early 1980s from US$1.03bn in 1981 to US$33.14bn in 1985.[116] Euro notes subsequently grew from US$50.3bn in 1985 to US$77.1bn in 1988.[117] Euro note issuance fell to US$40.5bn in 1987 as investors preferred shorter euro commercial paper programs with dealership rather than panel structures. Secondary trading was also always limited.[118]

As shorter duration instruments, euro notes were typically issued under a Note Issuance Facility (NIF) with the underwriting banks being committed to sell or purchase the notes issued. Notes were generally issued in amounts of US$500,000 or more. Revolving underwriting facilities (RUFs) were introduced in 1982 with the lead bank acting as a 'sole placing agent' to distribute the notes with a separate underwriting group taking up any unsold amounts or providing loans to the same value. 'Tender panels' were introduced in 1983 to allow the panel group to bid for the notes with only the residue being taken up by the underwriters under a 'backstop facility'. 'Continuous tender panels' were created in 1984 to allow underwriters to purchase the notes up to a pro rata share during the offer period. Underwriters can sell their commitments under a transferable revolving underwriting facility (TRUF). The borrower can also issue smaller amounts under a 'tap issue' as investor demand varies.

(c) Euro Commercial Paper (ECP)

Euro commercial paper is a specific form of commercial paper which is a short negotiable unsecured promissory note. Commercial paper began in the US with companies attempting to raise funds in other states through the sale of bankers' acceptances of commercial paper to avoid the restrictions of the McFadden Act.[119] UK companies were only allowed to issue sterling commercial paper (SCP) from April 1986 under exemption from the need to obtain authorisation under the Banking Act and now the Financial Services and Markets Act 2000[120]. Relevant conditions were amended in 1989 and [ ] with standard procedures being issued by the British Bankers' Association.[121] Banks and building societies previously issued short-term paper in the form of certificates of deposit (CDs) or London CDs.[122]

The first euro commercial paper (ECP) was reported to be in 1985[123] although commercial paper was used in the euro markets by US firms in the early 1970s[124]. Minimum denominations are US$100,000 with maturities of between 2 and 365 days. The domestic and euro markets can be accessed through 'global commercial paper' (GCP) using 'global notes'.[125] The market was damaged by corporate defaults in the late 1980s[126] although the market has recovered since.

(d) Euro Medium-Term Notes (MTNs)

[114] Subsection

[115] Dosoo (n 26) 73.

[116] Sarwal (n 45) 122.

[117] Bank of England quoted in Sarwal (n 45) 125.

[118] Sarwal (n 45) 125.

[119] Consumer finance companies also began to issue commercial paper during the 1920s with bank holding companies, foreign companies, banks and sovereign borrowers also issuing US commercial paper subsequently. Issues are for between US$25,000 and US$5m. US paper may be backed by a separate letter of credit guarantee. The US commercial paper was worth US$375m in 1987. Sarwal (n 45) 78-79.

[120] See generally Michael Blair QC, George Walker and Robert Purves, *Financial Services Law* (Oxford University Press Oxford 2nd ed 2008).

[121] http://www.bba.co.uk .

[122] Sarwal (n 45) 80-81.

[123] Sarwal (n 45) 81.

[124] Dosoo (n 26) 73.

[125] Some global notes were issued in the form of 'grid notes' with a grid agent managing transfers by book entry. 'Universal notes' have also been used with non-specific bearer notes being issued and security printed notes only being used if delivery is necessary outside the clearing system. Sarwal (n 45) 82-83.

[126] These included Integrated Resources (US$63m) June 1989; Wang Laboratories (US$96m) August 1989; Lomas Financial Corporation (US$70m) September 1989; DFC New Zealand (US$270m) October 1989; and Drexel Burnham Lambert (US$30.5m) February 1990. Dosoo (n 26) 74.

Euro medium-term notes (euro-MTNs) were introduced in 1985 from the US medium-term note market.[127] Euro-MTNs had greater flexibility in term of speed, timing and size of issuance. Notes can be issued on short notice as market opportunities open at attractive rates. Later euro-MTNs were issued with currency and interest rate swaps or other ad hoc features.

US medium-term notes (US-MTNs) were again developed in the early 1980s to bridge the corporate bond and commercial paper markets. Typical maturities were between 9 months and 15 years. Issues grew from US$12bn in 1984 to US$36bn by 1986. As revolving facilities, MTNs were issued under SEC Rule 415 (shelf registration) or exempt under Regulation D. Foreign banks were also allowed to issue deposit note MTNs from September 1986 in place of certificates of deposit.[128]

(e) Multi-Option Facilities (MOFs)

Borrowers can also set up multiple component facilities or multiple option funding facilities (MOFFs) or multi-option facilities (MOFs). The first MOFF was by a sovereign in 1984 with additional flexibility being provided in achieving the best maturity, currency and interest rate availability. This can be considered to be an extension of the NIF with further borrowing options provided. These include short-term multi-currency advances, swing-line facilities, domestic and euro commercial paper, bankers' acceptances and medium-term notes (MTNs). This allows a mixture of committed and uncommitted facilities to be made available at any time. A multiple loan facility (MLF) is a combination of committed credit options such as a revolving credit and short-term advances and acceptances option.[129] A 'BONUS' (Borrowers' Options for Notes and Underwriting Standby) is a specific type of MOFF.

5. FINANCIAL DERIVATIVES

Derivatives are a sub-set of off-balance sheet contingencies and commitments the traditional examples of which include credit substitutes, such as acceptances, guarantees, letters of credit, forward asset purchases and general commitments to lend, including standby facilities and credit lines.

Although basic forms of derivative transaction have been available throughout history, the very substantial growth in the use and form of modern derivative contracts began in the early 1970s following the introduction of floating exchange rates and high interest rate volatility of the 1970s. The first products were foreign exchange forwards which were followed by the development of exchange traded currency and interest rate futures contracts with central clearing systems with the market in foreign exchange swaps also emerged in the early 1970s with the growth of the Eurocurrency market and increasing exchange rate instability.[130]

While dealers in the early derivatives markets simply acted as brokers by finding counterparties with off-setting requirements, they subsequently began to act as counterparties themselves by actively taking positions which would then be hedged by either entering into matching transactions or warehousing the position until a suitable opposing contract could be found with the futures market being used to hedge unwarranted risks.[131]

As a result of these developments, more complex forms of exchange and off-exchange derivatives were possible with financial intermediaries managing total risk on a net basis rather than in terms of the individual contracts involved. With regard to derivative exchanges the first formal futures market in international currencies was opened on the Chicago

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[127] Issues grew from 2 in 1985 with a value of US$800,000 to 165 with a value of US$89.9bn in 1990. Dosoo (n 26) 78.

[128] Sarwal (n 45) 202 and 202-205.

[129] MOFFs grew from US$1,500m in 1984 to US$7,118m in 1985 with a drop to US$5,724m in 1986 and then increased to US$7,898m in 1987. Multiple loan facilities grew from US$250m in 1985 to US$5,487m in 1986 to US$32,170m in 1987. IFR quoted in Sarwal (n 45) 131-132.

[130] Out of the basic Forex swap, which involved a simple foreign exchange arrangement, back-to-back or parallel loans were developed through 1970s with straight currency swaps emerging in the 1980s. For a discussion of the three 'generations' of swaps see, P. Goris, *The Legal Aspect of Swaps - An Analysis Based on Economic Substance*(1994), Part II, Ch 2.

[131] See T. Siems, 'Financial Derivatives: Are New Regulations Warranted?,' 5.

Mercantile Exchange (Merc) in 1972,[132] mortgage futures on the Chicago Board of Trade in 1975,[133] and currency options on the Philadelphia Stock Exchange in 1982.[134]

During the period between the end of 1986 and the end of 1994, there has been a gradual, but now very noticeable, change in the basic nature of modern banking in that the activities of banks have fundamentally shifted from traditional lending to derivatives markets activities.[135] During this period the total volume of global derivatives contracts has been subject to great expansion.[136] This trend has occurred in many countries, although it is most obvious in the activities of large United States banks.[137] This change in bank activities has also been accompanied by advances in technology, the globalisation and liberalisation of financial markets and the general rapid growth of the OTC derivative market. During this period new and more complex financial products have been continuously introduced while linkages have been developed between traditionally distinct financial markets and institutions. Financial market conditions and the value of bank portfolios have changed very quickly while banks have been able to change their risk exposures through portfolio adjustment. As a result of this, market and operational risks have become much more important for banks in addition to basic credit risks.[138] As a result of these developments, supervisors have had to reconsider their regulatory approach to the new market environment.

(1) Swaps

Swaps originally developed from UK back-to-back or parallel loans used to avoid exchange and foreign investment controls. The most notable early swap was the currency swap entered into in August 1981 between the World Bank, IBM and Salomon Brothers with US$290m being raised under a fixed rate euro bond with a supporting Swiss franc and Deutsch mark swap. While the market was originally US$ based, other currencies were commonly used from 1986 onwards including Belgium francs, French francs, Ecu, Australian dollars, Japanese yen, Canadian dollars and others.[139]

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[132] A trading pit was opened in the Chicago Merc for foreign currencies on 16 May 1972 by its then Chairman Leo Melamed. MILLMAN 107-110.

[133] This had been lead by Richard Sandor following an invitation from the management of the Board of Trade to develop a futures contract in mortgages; see Millman, note above, pp 111-117.

[134] Currency options had to be developed in by Arnie Staloff on the Philadelphia Stock Exchange. They had to be introduced in Philadelphia since any form of commodity option had been prohibited in Chicago since 1934. The contract was developed A dispute with regard to proper supervisory authority had also arisen between the Securities and Exchange Commission (SEC) which supervised the New York Stock Exchange and other exchanges and the Commodities Futures Trading Commission (CFTC) which was responsible for the Chicago futures exchanges. The issue was resolved under the Futures Trading Act of 1982 which endorsed a compromise position agreed between the chairmen of the two agencies ('the Shad-Johnson Accord') that the CFTC would be responsible for futures contracts and options on futures contracts while the SEC retained its jurisdiction in respect of stocks and bonds and options on securities. Since the Philadelphia Stock Exchange was regulated by the SEC it could trade currency options once it had been established that options on currencies were securities even though currencies themselves were commodities. see Millman, note above, pp 1-15.

[135] IMF, *International Capital Markets: Developments, Prospects and Policy Issues*, August 1995; pp 135.

[136] During this period the total notional principle of outstanding exchange-traded derivative contracts grew at an annual average rate of 140% from US$ 0.6 trillion to US$8.8 trillion (this includes interest rate futures and options, currency futures and options and stock-market indexed futures and options). In the same period, annual turnover grew about 400% from 315 million contracts to 1,140 million contracts a year; see IMF, note above, Tables II 1 and 2. With regard to OTC markets, the notional principal of outstanding interest rate and currency swaps increased from US$1.0 trillion at the end of 1987 to just under US$ 8.0 trillion at the end of 1993. US$ 2.4 trillion new interest rate swaps and currency swaps were transacted in the second half of 1993 alone; IMF, Tables II. 3 and 4. Total notional principal of more complex swap-related OTC derivative contracts including caps, collars, floors and swaptions increased from US$ 0.6 trillion at the end of 1984 to US$ 1.4 trillion at the end of 1993.

[137] Interest rate income has declined from 70% of total revenue to less than 50% between the end of 1987 and the end of 1993 among the seven major US money centre banks. During the same period, trading income has more than doubled from 5 2/3% of total revenue to more than 13.5% with fee income increasing from 12.5% to 17 3/4%. The increasing concentration of OTC derivative activity is also clear from the fact that US$ 1.7 trillion notional principal of interest rate swaps were almost twice total balance sheet assets of US$ 854 billion at the end of 1992; see IMF, 136.

[138] Bank risk includes the following: credit risk is the risk where a counterparty might default on its own position; market risks arise as a result of unexpected general market price activity and interest rate changes; operational risks are concerned with losses due to human error, fraud or the lack of internal control; legal risk is related to the legal status of particular contracts; liquidity risk arises where a position cannot be sold quickly without a large price reduction; settlement risk is concerned with market and credit exposure during a settlement period; and specific risk involves a decline in the value of a particular position not caused by any general movement in market conditions; IMF, 136.

[139] Dosoo (n 26) 197.

The swap market had grown to US$1.3tn by 1990. US banks were able to net swap positions under the Financial Institutions Reform Act 1991.[140]

Plain vanilla interest rate swaps were developed out of currency swaps during the early 1980s. Early forms included coupon swaps (exchange of fixed for floating rate payments in same currency), basis or basis rate swaps (different floating rates) and cross-currency rate swaps (different currencies and different interest rates). The market had grown to US$250bn by 1986 (with US$190 dollar swaps) and then US$350bn by 1986 and US$500bn by 1987.[141] A number of variations have been developed.[142]

(2) Futures

Substantial interest rate and exchange rate volatility arose during the early 1970s partly as a result of the collapse of the Bretton Woods system and rising inflation. The Chicago Mercantile Exchange (CME) created in May 1972 the first traded financial currency future as an alternative to the bilateral forward foreign exchange contract. The first interest rate financial future was introduced by the Chicago Board of Trade (CBOT) in October 1975.[143]

The CME has set up an International Monetary Market (IMM) for futures in five currencies (sterling, Canadian dollar, Deutsch mark, yen and Swiss franc). 320 contracts were traded on the first day which rose to 200,000 by 1976 and 25m by 1988.[144] Traded futures were attractive due to their standard size, limited credit risk (with a central market counter party) and ability to close out (by purchasing and offsetting opposite contracts).

Stock index futures contracts were introduced by the Kansas City Board of Trade in 1982 followed by the Standard & Poor's 500 stock index future on the CME. These were followed by the CBOT's 'Major Market Index' (MAXI) and the New York Stock Exchange 'Corporate Index'.

The alternative to an interest rate future is a forward (or future) rate agreement (FRAs) to allow parties to agree on the interest to be paid on a notional deposit at a specified future (settlement) date. FRAs grew out of 'forward/forward deposits' with the parties agreeing to make a specified deposit with another on a predetermined date and rate. FRAs are in essence over-the-counter future traded contracts. These were first introduced in the UK in late 1983.[145] FRAs use base rate rather than LIBOR are referred to as 'base rate agreements' (BRAs) with long-dated forward rate agreements (LDFRAs) also being available. The British Bankers' Association (BBA) introduced standard terms and conditions for FRAs in August 1985 (the FRA BBA terms). FRAs nevertheless still have the advantages of being customised rather than standardised with greater flexibility and exposure is limited to the interest variation rather than full principal amounts.[146]

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[140] Dosoo (n 26) 197-198.

[141] Sarwal (n 45) 314-315.

[142] These include extendable (term) swaps, puttable swaps (with termination rights before completion), draw down (or accreting) swaps (with principal increasing to match draw down), amortising swaps (with principal decreasing with stepped repayments), deferred (or forward) swaps (current rates at a future agreed date), swap-options (option to enter into interest rate swap at future date at current rates), short-dated swaps (less than 2 year duration), syndicated swaps (large facility supported by number of intermediaries), zero coupon swaps (between a zero coupon security and floating rate borrower), contingent swaps (exercisable on a contingency), collateralised swaps (using security or collateral), 'schlock' swaps (with high interest rates), hi-tech swaps (complex customised swap), blended interest rate swaps (combined forward swap and rates), discount swaps (low coupons with final balloon payment), drop lock swaps (with reduction or increase rate trigger), off-market coupon swaps (using separate non-market rates), flow-ceiling swaps (floating rate bands), seasonal swaps (following cash flow patterns of borrower), roller-coaster swaps (option to switch between fixed and floating rates), saw-tooth swaps (variable notional amount in accordance with schedule), spread lock swaps (option to fix floating rate at fixed spread over benchmark), step-up swaps (periodic increase in fixed rate), tax-exempt swaps (cash flow interest rates swap following adjustment in tax rate for exempt securities), yield curve swaps (interest follows separate defined spread relationship), cocktail (or multi-legged) swaps (combined separate bilateral swaps with number of counter parties and single intermediary), index swaps (index linked) and mortgage swaps (linked to benchmark mortgage security). Sarwal (n 45) 319-323. Swap warrants allow for the notional principal amount to be increased with a correspondingly higher payment rate being made. Asset swaps combine unattractive or more illiquid interest rate and currency swaps to create more marketable instruments through a form of repackaging. Asset swaps operate in the same manner as synthetic FRNs. Sarwal (n 45) 319-326.

[143] Sarwal (n 45) 268.

[144] Sarwal (n 45) 279.

[145] Sarwal (n 45) 309.

[146] Sarwal (n 45) 310-311.

(3) Options

Options provide the buyer with the right but not the obligation to buy (call) or sell (put) a specified financial instrument at a predetermined price (the exercise or strike price) up until or on a certain defined future date (exercise date or period). An European option can only be exercised on maturity with an American option being open at any time between writing and maturity.

Exchange traded interest rate options were launched on the European Options Exchange in Amsterdam in 1980. Growth was substantial with rising interest rates during the early 1980s with over 15 interest rate options being available in major currencies by 1986.[147]

Stock index options were launched by the Chicago Board Options Exchange (CBOE) in 1983 which included an S&P 100 stock index option (OEX). The CME created an equivalent S&P 500 index option with LIFFE in the UK offering UK stock index options.

(d) Synthetic Securities

Synthetic securities are created by banks repackaging other instruments using derivatives and, in particular, swaps. A synthetic floating rate note (FRN) can be created through the purchase of a fixed rate bond with a swap to convert the fixed for a floating repayment rate. This is similar to an asset swap although the transaction is set up by the investment bank rather than the borrower. The synthetic security can also be sold directly with market liquidity being improved with a secondary market. Offshore special purchase vehicles (SPVs) can be used to hold the assets and issue separate notes and commercial paper to end investors. The first issue to the public is reported to have been by Trust Obligation Participating Securities (TOPS) in January 1987 for US$200m FRNs supported by a Danish 7% 2-year bond[148]. Early structured finance products can then be considered to have evolved out of the asset swap market with banks using warehoused swaps to support repackaging. Early transactions were led by major swap players including Citicorp Investment Bank with commercial banks and Japanese investors being the main purchasers[149].

6. ASSET-BACKED FINANCE AND SECURITISATION

Asset-backed finance is sometimes referred to as structured receivables finance (SRF) or more simply securitisation. Asset-backed finance includes either more traditional ‘pass-through securities’ or ‘pass-through certificates’ (where the underlying asset pool is owned directly with interest and principal being paid through) and ‘asset-backed’ bonds or securities (with the assets remaining with the issuer or being sold to a separate entity).

Securitisation is concerned with the transfer of the separate income streams on a pool of underlying assets, such as mortgages, car loans, student loans, credit cards or other receivables, into a fixed or floating rate security through the use of an intermediate special purpose vehicle (SPV). US asset-backed finance began in the 1930s with the promotion of mortgages under the National Housing Act 1934.[150] The Government National Mortgage Association (GNMA) was then created in 1968 which guaranteed pass-through securities through ‘*Ginnie Maes*’.[151] ‘Fanny Maes’ were then issued by the Federal National Mortgage Association (FNMA) and ‘participation certificates’ by the Federal Home Loans Mortgage Corporation (FHLMC or Freddie Mac).[152]

Private pass-through certificates were first issued by Bank of America in 1977 with a AAA rating. ‘Adjustable rate mortgages’ (ARMs) were then created to deal with the problem of only fixed rate mortgages being available in the US

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147 Sarwal (n 45) 293-295.

148 TOPS 2 involved a US$100m FRN issue on a portfolio of Japanese bank guaranteed equity stripped (*ex warrant*) bonds and then further issues with equity warrants. Other issues in 1987 included STARs (Securities Transferred and Repackaged) and STRIPES (Securities Transferred and Repackaged into Pound Equivalent Securities) using Danish 10-year FRNs. LIVES (Latest Investment Vehicle for Ex Warrant Swaps) was based on US$190m (ex warrant) Japanese bonds. Other issues included TOP3, TOP4, TOP5, LIVES2, SABRE, CIVAS, GETS and GEWEL. Floating rate notes have also been repackaged into synthetic fixed rate securities using UK gilts with BECS (Bearer Eurodollar Collateralised Securities), MECs and FLAGs. Sarwal (n 45) 327-328.

149 Sarwal (n 45) 329.

150 Sarwal (n 45) 219.

151 The US mortgage market was based on ‘mortgage pass-through securities’ or certificates. Mortgage pass-through securities (or certificates) provide for the direct ownership of a pool of mortgages with payments being passed through directly to the investor. Under a ‘modified pass-through’, interest is paid regularly with principal only being repaid on collection with payments being guaranteed in all cases under a ‘fully modified pass-through’ security or certificate. Sarwal (n 45) 211.

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until 1975. 'Mortgage-backed bonds' (MBBs) were introduced in 1977 after the US Federal Home Loan Bank (FHLB) allowed thrift institutions insured by the Federal Savings and Loan Insurance Corporation (FSLIC) to issue debt supported by residual mortgages.[153] ERMs and MBBs still suffered from variability in cash flows and unpredictability of maturity making them less attractive to investors and the development of more liquid markets.[154]

The first floating rate CMO (FRCMO) was issued in September 1986 with US$6.5bn of FRCMOs being issued that year. The market was further supported by the creation of 'real estate mortgage investment conduits' (REMICs) under the Tax Reform Act 1986 which removed the taxation on the trusts used under the earlier mortgage-backed securities[155]. Later variations in 1981 included 'pay-through bonds' (builder bonds)[156] and stripped mortgage-backed securities (STRIPs)[157] as well as other forms of structured receivable financing using non-mortgage assets.[158]

7. CREDIT DERIVATIVES

Credit derivatives are specific types of derivative product that allow the transfer of default or non-repayment on an asset to be transferred from one party to another without any separate transfer of the underlying asset concerned. The holder of the credit derivative effectively purchases credit protection against default on the instrument. This constitutes a form of insurance or guarantee although one made available in the form of a standard form product that is separately tradable. Credit derivatives grew from US$1.95tn in 2002 to US$4tn by end-2003 and then US$17tn by end-2005. The principal instruments used are Credit Default Swaps (CDSs), Total Return Swaps (TRSs), and Credit Spread Swaps (CSSs).[159]

Total returns swaps (TRSs) were created in 1991 to provide credit risk protection in the secondary loan market.[160] Credit instruments were developed by banks to manage credit risk in specific sectors (such as real estate and cyclical manufacturing or service areas) or specific firms following the market instability. Investors, including hedge funds, took increasingly large positions between 1993 and 1994 as part of leveraged investment strategies. Leverage levels grew again in 1995 and 1996 with low interest rates and falling credit spreads with investors also looking to emerging markets and leveraged loan markets.

The market was then undermined by the Asian crisis in 1997 and collapse of Long Term Capital Management with further contagion across the markets including in the Russian GKO market and credit linked note sector. This led to the triggering of payments under many credit default swaps[161] and termination of TRSs. A number of operational and market problems arose with regard to the need to make substantial cash or physical settlements under the transactions for the first time. This also led to substantial litigation in a number of cases.[162] This nevertheless resulted in a new maturity in the market as counter parties become increasingly capable and confident with the full range of credit derivative products available.[163]

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[153] US$4m of MBBs were issued by thrift institutions between 1977-1980.

[154] Collateralised mortgage obligations (CMOs) were then first issued by the FHLMC in June 1983 to deal with the problems of cash flow and maturities with separate repayment tranches being created. Early CMOs had four tranches with an A tranche (1-3 years short maturity with full prepayment), B tranche (3-10 years with priority over other tranches), C tranche (5-15 years subordinated) and the Z tranche (15-25 years with no interest or principal being repaid until the other tranches have been fully discharged). AAA ratings were provided by over-collateralisation with 60%-100% additional cover.

[155] Sarwal (n 45) 217.

[156] These were issued by building companies to provide housing finance directly.

[157] These were first issued by Fanny Mae in July 1986 with the coupons removed (stripped) and with discount (higher collateralised and yielding) and premium (lower collateralised and yielding) variants. Interest-only and principal only STRIPs were also produced.

[158] These include certificate of automobile receivables (CARs), collateralised lease equipment obligations (CLEOs), certificates of amortised revolving debts (CRADs) and single property schemes (SPSs). SPS type schemes were originally issued by real estate investment trusts (REITs) in the 1960s. UK equivalent schemes include property income certificates (PINCs), single asset property companies (SAPCOs) and single property ownership trusts (SPOTs). Sarwal (n 45) 220-223 and 223-226.

[159] A credit spread swap (CSS) allows for the exchange of the credit spread (margin) on the underlying security necessary to compensate the investor for the risk of default. Ch. , subsection

[160] Under a TRS, the investor (total return receiver) is paid the interest on an underlying asset in return for a floating rate interest payment calculated at LIBOR plus margin with the dealer (total return payer) passing through all payments on the underlying asset to the investor. Ch. , subsection

[161] A periodic fee is paid by the protection purchaser in return for a contingent payment in the event that a specific credit event arises which is defined with reference to a specific identified reference entity. Ch. , subsection

[162] This included the action by the investment arm of the Greek ship-owning family against J P Morgan for losses on its GKO linked notes. *Spring Well*.

[163] Das, *Credit Derivatives, CDOs & Structured Credit Products* (John Wiley Asia 2005) 714-725.

Development of the market was supported by the provision of standard documentation for CDSs by ISDA beginning in 1998.[164] From a regulatory perspective, the advantage of credit derivatives is that they allow banks to hold lower capital levels with the credit risk being transferred to the protection seller. Capital cover can then be reduced from 100 to only 20% with additional relief possibly being made available under Basel II.[165]

The availability of credit derivatives has then supported the transfer of debt markets from being principally credit or loan based to market or security based as part of a larger process of securitisation in recent decades. The principal advantage is that credit risks are dispersed across the market although it is not always clear that these are ultimately being assumed by effective risk managers. Concerns also remain with regard to liquidity levels in the primary and secondary markets for credit default products. Significant difficulties remain in operational and settlement areas with substantial backlogs in unconfirmed trades having arisen. Industry action has been called for by the New York Federal Reserve Bank and the UK FSA, in particular, with continued work being undertaken within the industry and through ISDA including through its novations protocols. More generally, credit derivatives allow supervisors more effectively to monitor market information including on credit flows, credit quality and concentrations.

The specific difficulty that nevertheless arose during the 2008 financial crisis was the stability of American International General (AIG) was threatened which was the largest issuer of CDSs in the world. It was for this reason that the US authorities decided to provide an initial bailout package for AIG of US$80bn which was extended subsequently. While credit derivatives did not cause or aggravate the financial crisis directly, more information is required with regard to the extent to which credit risk has been effectively dispersed and managed.

8. STRUCTURED FINANCE

Structured finance principally consists of structured notes which are floating rate notes (FRNs) tied to other interest rate, currency, credit, commodity or other interest-linked facilities. A number of distinct types of structured notes were made available.[166] Structured finance also includes synthetic securities which are formed by repackaging an existing security purchased in the secondary market and combining it with a derivative product. Structured finance can be considered to constitute a form of capital market based risk transfer.[167] The structured finance market grew from US$48bn in 1997 to over US$488bn by end-2006.[168]

The structured finance market developed out of more complex swap transactions and repackaging and was supported by the development of new credit risk products including total return swaps (TRSs), credit spread swaps (CSSs) and credit default swaps (CDSs).[169] Securitisation refers to the conversion of a pool of underlying credit on loan based assets into a security usually in the form of an FRN or commercial paper issuance using an SPV (or SPE) as an intermediary holding vehicle. Repackaging refers to the transfer or conversion of the payment profile on an income stream or security again usually through an intermediate SPV. The structured finance market combines these techniques to create either standardised or tailored new security products that restructure credit relationships or payment streams.

Structured finance uses securitisation techniques. The difference between structured finance and securitisation is that securitisation is based on a pool of inherently non-transferable credit assets (such as mortgages, car loans or other credit receivables) with structured finance using income streams from securities or other already securitised products.

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164 ISDA produced a long form confirmation for its OTC Credit Swap Transaction (Single Reference Entity, Non-Sovereign) in 1998 with relevant definitions. This was replaced in July 1999 by Standard Definitions for Credit Default Swap transactions and a Short Form Confirmation. The 1999 Definitions were reviewed in 2002 and revised Credit Derivatives Definitions issued in February 2003. Ch. , subsection and (n90).

165 Das (n) 147 and 148-149. See also, 'The influence of credit derivative and structured credit markets on financial stability' 51-84.

166 (n5). Setyajit Das, *Structured Products and Hybrid Securities* (John Wiley & Sons Singapore 2ed 2001).

167 Risk transfer has traditionally been effected either through loan syndication or credit insurance in the credit market or through loan sales, bond trading or asset swaps in the capital markets. Structured finance provides an alternative range of capital market options based either on securitisation or credit derivatives. Securitisation then includes basic mortgage-backed securities (MBSs) or other asset-backed securities (ABSs) as well as higher-level collateralised debt obligation (CDOs) including collateralised loan obligations (CLOs) and collateralised bond obligations (CBOs). Other hybrid products are also available including regular hybrids (credit linked notes (CLNs) and synthetic CDOs), indexed hybrids and 'pools of pools' and leveraged hybrids (more complex CDOs). Jobst (n) 4, figure 1.

168 US$428.3bn cash, hybrid and market value CDOs were issued with US$60.2bn in funded synthetic CDOs. Outstanding CDO tranches had exceeded US$1tn by end-2005 excluding privately placed transactions and unreported or unsold bespoke tranches. Jobst (n) n12.

169 Sub-section 7.

Structured products principally include collateralised debt obligations (CDOs) based on a portfolio of underlying securities and credit-linked notes (CLNs) which combine a security with an embedded credit derivative. Credit derivatives can also generally be considered to constitute forms of structured finance. Tranching is used within structure instruments to create tiers of assets with different risk profiles (principally including a senior or super-superior AAA tranche, an intermediate *mezzanine* tranche and a higher-risk but higher-yielding lower, junior or ordinary tranche.[170]

The principal advantage of structured finance products was they created tailored risk profiles for investors which reflected increasingly sophisticated portfolio and risk management practices in the markets. Payment streams and credit risk could be adjusted to suit specific investor preference or need. This also allowed borrowers to raise funds at lower costs and with higher levels of market liquidity being available.

Securitisation and structured finance remain relatively safe and stable forms of funding and debt management. They simply constitute devices to aggregate and convert income streams which create more specific tailored products for investors and consequent higher levels of liquidity and lower funding for borrowers. Payment defaults are also dealt with through various credit enhancement mechanisms including subordination, over-collateralisation, separate collateralisation, guarantees or other insurance or cover. The principal difficult that arose in more recent years was that lower quality debts were initially securitised and then included within larger structured finance products. It was the growing level of defaults in the US sub-prime market during 2006 and early 2007 that triggered the collapse in the secondary market for CDOs which, in turn, led to the credit contraction in inter-bank markets between August 2007 and August 2008 and then the collapse in financial stocks and beginning of the global recession in September and October 2008. This can, at least, in part be explained in terms of the increasingly high risk lending that was undertaking during 2005 and 2006[171] and incorporation of this debt into larger CDO structures[172] and with the withdrawal of more cautious counter parties in the market including bond insurers and sophisticated investors.[173]

Structured finance CDOs and underlying securitisations were not then at fault directly although the incorporation of increasingly high risk, low quality sub-prime debt did lead to a collapse in the CDO market with the loss of the earlier oversight carried out by credit enhancement providers in the US market and lack of due diligence by purchasing investors across the world subsequently.

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170 Structured finance can be defined as referring to 'all advanced private and public financial arrangements that serve to efficiently refinance and hedge any profitable economic activity beyond the scope of conventional forms of on-balance sheet securities (debt, bonds, equity) at lower capital cost and agency costs from market impediments on liquidity' Andreas A Jobst, 'What is structured finance?' *The Securitisation* Conduit (2005/6) vol.8; and *ICFAI Journal of Financial Risk Management* (2007).

171 US mortgage originations grew to US$1tn in 1993 following the recession in 1991 but then fell in 1994 and 1995. Mortgage lenders then looked to the sub-prime market to support origination levels with the use of asset-backed securities (ABS) in the 'home equity' sector. Credit enhancement was provided through bond insurers who limited the riskiness of the underlying loans included. Subordination was then used for credit enhancement purposes from 1997 onwards with sophisticated investors who purchased the subordinate tranches also exercising a degree of credit control over the quality of underlying mortgage portfolios. Between 1997 and 2002, 40-55% of credit enhancement was provided through bond insurance and the balance by subordination. Spreads of triple B rated home equity ABS remained around 200 to 250 basis points over LIBOR between 2001 and 2004. These then rose significantly with the increased use of CDOs (including home equity ABSs) and creation of 'synthetic ABS' (credit default swaps on ABS) to satisfy investor demand. The more traditional bond insurers and sophisticated mortgage investors withdrew from the home equity ABS market with the tightening of credit spreads in 2005. Mark Adelson and David Jacob, *The Sub-Prime Problem: Causes and Lessons* (8 January 2008) available http://www.adelsonandjacob.com.

172 The quality of sub-prime lending fell significantly at the end of 2005 and into early 2007 as the growing demand for CDOs led to the inclusion of any home equity ABSs provided. Adelson and Jacob, *ABS/MBS Litigation Outlook* (19 November 2007). The inclusion of increasingly low quality sub-prime debt within the CDOs can partly be explained in terms of the lack of experience by CDO managers and lack of incentive as the risk was transferred to the CDO investors. The CDO investors, in turn, failed to undertake adequate due diligence applying incorrect or unsound models or simply following market herd behaviour.

173 The CDO investors, in turn, failed to undertake adequate due diligence applying incorrect or unsound models or simply following market herd behaviour. Even the CDO departments of the bond insurers purchased higher risk CDOs issued between end-2005 and 2006. Adelson and Jacob (n) 7.