THE SECURITIES INDUSTRY AND INTERNATIONAL FINANCIAL INTEGRATION

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I. INTRODUCTION

This article seeks to understand the new financial environment in which domestic securities industries operate with some reference to New Zealand.[1] For some writers this environment, (more generally, the "global economy"), has profound political implications.[2] Although we do not wish to engage in this particular debate, we do characterize the new environment as part of the globalization process.[3] Arguably, New Zealand entered the global economy with the first European trader and settler contact.[4] Certainly the process accelerated in 1984 with the release of Treasury's and Reserve Bank's Briefing Papers to new Ministers following the foreign exchange crisis of July 1984. These papers, published as *Economic Management*,[5] viewed the failure to adjust the structure of the New Zealand economy to external conditions as the key factor in poor economic management.[6] The criticism was an explicit official recognition that the domestic economy must be responsive to change in the international economy - a recognition that underlies the liberalization of the New Zealand economy post-1984.[7]

1 This article draws on G Walker, "Change in the International Financial Markets: 1944 to the Present", a paper presented to The Asia-America Institute in Transnational Law (Duke University School of Law and Hong Kong University School of Law), Hong Kong, 7 July 1995. Thanks to Canterbury University School of Law for financial support to attend the Institute.

2 See, for example, R Ross, "The Theory of Global Capitalism: State Theory and Variants of Capitalism on a World Scale" in D Smith and J Borocz, eds, *A New World Order? Global Transformations in the Late Twentieth Century* (1995), 17; P McMichael, "The New Colonialism: Global Regulation and the Restructuring of the Interstate System" in D Smith and J Borocz, op cit, 37 and J Mander and E Goldsmith, eds, *The Case against the Global Economy* (1996). In New Zealand, this vein of analysis is associated with the work of Jane Kelsey: see, J Kelsey, *The New Zealand Experiment* (1995).

3 For a discussion of the term and its impact on New Zealand, see, G Walker and M Fox, "Globalization: An Analytical Framework" (1996) 3 Indiana J of Global Legal Studies, 375-411.

4 "Despite 150 years of transformation in the global economy and some dramatic changes in the nature of New Zealand's links to the world order, the importance of this basic key to understanding the character and direction of economic change has been underestimated.": R Le Heron, "Globalisation and the Economy" in R Le Heron and E Pawson (Eds), *Changing Places: New Zealand in the Nineties* (1996), 21. See generally, see J Belich, *Making Peoples: A History of the New Zealanders* (1996).

5 The Treasury, *Economic Management* (1984).

6 Id, 104.

7 See P Massey, *New Zealand: Market Liberalization in a Developed Economy* (1995).

Similarly, the domestic securities industry must be responsive to change in the international financial markets.

Domestic securities markets are a component of international financial markets. Over the past fifty years there have been dramatic changes in the environment in which domestic markets operate. International financial markets comprise a complex system. Their efficiency and performance is dependent on interactions of institutional and market factors. The interrelationships between these factors are both the agents and results of change - they operate in a dialectical fashion with one another.[8] Isolating and assessing causes and continuing vectors of change in the environment of international financial markets is inevitably difficult. The literature, however, suggests that the main factors have been change in the international financial system,[9] competition,[10] finance theory,[11] advances in and the fusion of information technology and telecommunications,[12] the rise of global business strategies in production, marketing and financing,[13] new political and economic structures,[14] new political imperatives such as economic liberalization, privatization and deregulation,[15] and the rise of institutional investors.[16]

8 D Ghosh and E Ortiz, "The Changing Environment of International Financial Markets: Introduction" in D Ghosh and E Ortiz, eds, *The Changing Environment of International Financial Markets: Issues and Analysis* (1994), 3, 4.

9 There is a full account in R Fraser and C Long, *The World Financial System* (2nd ed, 1992). The term "international financial system" is connoted here as the complex of international monetary and economic arrangements entered into following the collapse of the Bretton Woods system.

10 Competition is the wild card since it cannot be scripted. Competition is responsible for the type of regulatory arbitrage which led to the Eurodollar market. The collapse of Bretton Woods provided an impetus for the rapid growth of foreign exchange markets, a competitive response to the management of currency risk.

11 For a general review, see P Bernstein, *Capital Ideas* (1992). For our purposes, two developments are noteworthy. First, the development of modern portfolio theory by Harry Markovitz: see, H Markovitz, "Portfolio Selection" (1952) 7 (1) Journal of Finance, 77 and H Markovitz, *Portfolio Selection: Efficient Diversification of Investments* (1959). Markovitz's theories underlie the manner in which institutional investors manage their assets through diversification and lead inexorably to global investment via, for example, American Depositary Receipts (ADRs) and Global Depositary Receipts (GDRs). The second significant development is the Black-Scholes option pricing formula: see, F Black and M Scholes, "The Valuation of Option Contracts and a Test of Market Efficiency" (1972) 27 Journal of Finance, 399; F Black and M Scholes, "The Pricing of Options and Corporate Liabilities" (1973) 81 Journal of Political Economy, 637. The Black-Scholes formula was critical to the establishment of new derivatives markets in currencies: see, G Millman, *The Vandals' Crown* (1995), 23.

12 A leading account is S Bradley, J Hausman and R Nolan, eds, *Globalization, Technology and Competition: The Fusion of Computers and Telecommunication in the 1990s* (1993).

13 The seminal texts are M Porter, *Competition in Global Industries* (1986) and M Porter, *The Competitive Advantage of Nations* (1990). See also G Lodge, *Managing Globalization in the Age of Interdependence* (1995).

14 For example: the collapse of the Iron Curtain and the reunification of Germany; the breakup of the USSR; the shift towards a market economy in the Soviet Union and its satellite states; the passage of the Maastricht Treaty; industrialization of the Pacific Rim Basin; economic reform in China as a result of a shift to market socialism and the formation of the North American Free Trade Agreement (NAFTA).

15 Obvious examples are the abolition of restrictions on international capital flows, privatization of state enterprises and the deregulation of financial markets. On capital controls, see, K Davis and M Lewis, "Deregulation and Monetary Policy" in K Dowd and M Lewis, eds, *Current Issues in Financial and Monetary Economics* (1992), 128, 132-134. On privatization of state enterprises, see D Gayle and J Goodrich, eds, *Privatization and Deregulation in Global Perspective* (1990) and A Chua, "The Privatization-Nationalization Cycle: The Link Between Markets and Ethnicity in Developing countries" (1995) 95 Columbia Law Review 223. On deregulation of the financial markets, see S Khoury, *The Deregulation of World Financial Markets: Myths, Realities and Impacts* (1990). Because regulatory and technological barriers to shifting capital are minimal, the markets have become more sensitive to macroeconomic change. Steil comments, "Savers are now highly yield-sensitive ... The easing of US monetary policy which began in late 1990 motivated a huge shift in American private savings toward domestic and foreign equity markets and

Together, these changes have produced an overwhelming trend towards international financial integration.[17] As we shall see, the end result of change is a particular form of globalization. Understanding that result requires a considerable degree of explanation, hence a principal objective is to identify the forces driving the process of integration and show how these sources have transformed the market for financial services.[18] For example, ongoing change in the international context has profound and observable implications for New Zealand's domestic economy, its securities industry and the design of its securities regime. One way of grasping these trends is to construct a brief narrative of change in the international financial environment from 1944 to 1987. This is provided in Division II. Divisions III and IV attempt to deepen and extend this introductory narrative by focusing on key concepts and drivers of change.[19] In brief, the key drivers are technological and macroeconomic change: macroeconomic change forced deregulation which led to globalization and technology facilitated this process.

II. NARRATIVE OF CHANGE

At the Bretton Woods conference in 1944 an international monetary system was established within which currencies were pegged against the US dollar.[20] The US authorities exchanged dollars for gold in official transactions at a fixed price of $35 per ounce. By the late 1950s the US began to experience problems defending the value of the dollar.[21] In response to this depletion of its gold stocks the US, amongst other measures, restricted foreign borrowing in the US capital market and prevented US corporations

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long-term bonds. In 1993, Americans poured about $1 billion a day into mutual funds. Changes in national fiscal and monetary conditions also provoke large and rapid shifts in the pattern of net flows of international savings and investment. The marked rise in cross-border activity has in turn increased sensitivity to currency risks, and fuelled demand for derivative instruments to control them.": B Steil, "Effective Public Policy in a World of Footloose Finance" in B Steil ed, *International Financial Market Regulation* (1994), 1, 4.

16 The institutionalization of the markets is a critical and defining trend of recent years. "The US mutual fund industry in 1993 had over $2 trillion in assets; nearly double the level in 1990, and 15 times the level in 1980 ... At the very least, market institutionalization must force regulators to reevaluate the distinction between 'retail' investors and institutions. Retail investors have long been assumed to require far more regulatory protection because of their lack of sophistication, but when their main investment vehicle becomes a multibillion dollar mutual fund, the distinction becomes extremely blurred.": B Steil, op cit, 4-5. See also C Bernard, "Towards an International Market in Mutual Funds" (1996) 36 Virginia Journal of International Law, 467.

17 See, Statement by Gerald Corrigan, President, The Federal Reserve Bank of New York, US. Access to Japanese Financial Markets, Hearing before The Committee on the Budget, US Senate, May 6, 1987. When emphasizing the role of technology and innovation in the process of international integration, Corrigan stated that the globalization of financial markets could not be reversed. For an analysis of globalization and its impact on New Zealand , see G Walker and M Fox , op cit, 375.

18 There is an argument to a somewhat similar effect in M Perry, "A Challenge Postponed: Market 2000 Complacency in Response to Regulatory Competition for International Equity Markets" (1994) 34 Virginia Journal of International Law, 701. Here Perry reviews Division of Market Regulation, US Securities and Exchange Commission, *Market 2000: An Examination of Current Equity Market Developments* (1994) (hereafter "Market 2000"), and argues that globalization of capital questions assumptions about the competitiveness of the US regulatory system An earlier criticism that US regulatory costs outweigh regulatory benefits can be found in J Cox, "Rethinking US Securities Law in the Shadow of International Regulatory Competition" (1992) 55 Law and Contemporary Problems, 157.

19 There are a number of narratives on this point. Some are highly specialized. A good introductory account is R Smith, *The Global Bankers* (1989).

20 There is a good, non-technical account of Bretton Woods in Millman, op cit, 65-94.

21 Smith, op cit, 38. The US had a balance-of-payments problem (more money going out via import payments and capital outflows than coming in via export receipts and capital inflows), and money accumulated abroad was being used to buy gold from the US. The balance-of-payments is the current account plus the capital account. The term "balance-of-payments" is further defined below.

from exporting their capital for direct investments abroad. As Roy Smith notes, the "effect was that US corporations would shift from borrowing in the US market the capital needed for a plant in Brazil to borrowing the funds abroad. This simple shift had an enormous effect on the development of overseas capital markets and medium-term bank lending."[22]

Smith's reference to what was the creation of the Eurodollar market needs to be placed in context. First, the emergence of multinational banking in the 1960s was not a new phenomenon.[23] Second, the initial impetus for the Eurodollar market flowed from the financing needs of British merchant banks (following the Sterling crisis of 1957 restrictions were placed on the use of sterling bills for international trade), and the placement by Eastern Bloc countries of dollars in Western European banks (due to the deterioration in US/Soviet relations).[24] Third, US financial institutions were increasingly going offshore for funds. One reason for this was US regulatory restrictions in the financial markets, namely, Regulation Q and the Interest Equalization Tax, 1964. Regulation Q placed ceilings on interest rates paid by commercial banks on time and savings deposits. This caused US investors to seek higher returns abroad (international regulatory arbitrage) and prompted US financial institutions to look for business in the Euromarkets where interest rates were not regulated.[25] The Interest Equalization Tax led many US corporations to retain profits abroad, further strengthening the Eurodollar market.[26] Another reason was restrictive monetary policy which drove US banks to seek funds abroad.[27]

Stymied from borrowing in their domestic market, US corporations looked to offshore capital markets, specifically the Eurodollar market. The Eurodollar market consisted of US dollars on deposit in banks in London and other cities in Europe. Eurodollars accumulated in these places following the events just outlined and comprised those dollars not used to buy gold from the US. Eurodollars were regulated neither by the US nor by the country in which they were held. They were securitized by negotiable certificates of deposit, invented by Citibank. Shortly thereafter, in June 1963, the first Eurobonds were issued.[28] From 1965 to 1974 - when the restrictions on US corporations borrowing domestically were lifted - the majority of Eurobond

22 Ibid.

23 F Braudel, *Civilization and Capitalism 15th-18th Century, Vol II: The Wheels of Commerce* (rep, 1985), 97-114 and L Neal, *The Rise of Financial Capitalism: International Capital Markets in the Age of Reason* (1990), have shown the existence of international capital markets in the mercantile states of north-western Europe in the 1700s. Further, in the century prior to World War One, European and British banks were key players in a world capital market. As Reinecke notes, "It was mostly government controls on convertibility and international capital flows that reduced the role of international banking between 1914-1960": see W Reinecke, *US Commercial Banks and the Internationalization of Finance: The Politics of Regulatory Reform and Global Cooperation* (PhD Thesis, Yale University, 1991: UMI Dissertation Services, 1994), 73, fn 109.

24 Reinecke, op cit, 73.

25 Id, 74. See also, P Einzig, *The Euro-Dollar System* (1967); I Kerr, *A History of the Eurobond Market* (1984) and S Winningham and D Hagen, "Regulation Q: A Historical Perspective" Economic Review, Federal Reserve Bank of Kansas City, April 1980, 3-17. In passing, note that the response to Regulation Q provides a useful paradigm (hereafter "Regulation Q paradigm"), for many "artificial" domestic controls on investment, ie, domestic capital evaded domestic controls by migrating to an international market ruled by market forces. The Regulation Q paradigm has developed into a full-blown business strategy of regulatory arbitrage - see the discussion below of the McKinsey presentation to the International Swap Dealers Association in Paris in 1992.

26 Reineke, op cit, 74, fn 112. There is a useful discussion of the role US tax policy played in the formation of Eurodollar bond market in M Perry, op cit, 717-723.

27 Id, 74-75.

28 A $15 million issue for Autostrade, the Italian state highway system.

issues were by US companies, resulting in the expansion of the Euromarket.[29] Except for the strong expansion of US multinational banks, however, financial markets in the 1960s remained insular. National financial markets developed independently and their regulatory structures primarily reflected domestic concerns.[30]

Restrictions placed on US corporations were insufficient to defend the value of the dollar and in the early 1970s the United States unilaterally discontinued the sale of gold reserves to foreign holders of dollars.[31] Thereafter the fixed-rate system established by Bretton Woods was scrapped and replaced by a floating rate: the "consequences of this change were enormous [leading] directly to a period of deregulation of capital and other controls around the world, ultimately freeing up financial resources to be invested wherever the opportunities were attractive."[32]

In the 1970s and 1980s international and domestic markets became increasingly integrated. Integration transformed the market for financial services to such an extent that we can clearly identify a *pre-transformation* and *post-transformation market for financial services* stemming from a series of shocks to the international economy, specifically, the collapse of Bretton Woods and the oil shocks of the 1970s.[33] The oil-price shock of 1973 produced strains on foreign exchange rates and pressure on price levels in oil importing countries. Inflation in the US increased, leading the Federal Reserve in 1979 to change the way it managed monetary policy. Interest rates would no longer be set through direct intervention. Instead, they were determined indirectly by controlling the money supply via government debt programs.

29 Smith comments: "Their activity launched the Euromarket into a twenty-year period of continuing expansion and increasing sophistication. It is today comparable in size to the US corporate bond market and serves as a major source of finance for corporations and governments all over the world. It is a preferred market for international finance because it is easy to use, avoids the strict securities regulation of the United States, and is extremely innovative and cost efficient for major users. The volume of foreign bonds experienced in the 1930s in the United States never returned. It reappeared instead in the Eurobond market": Smith, op cit 39. B Scott-Quinn, "The Development of the Global Equity Market" in Euromoney, *Capital Markets Yearbook 1994* (1994), 2 discusses the activities of the Zurich-based, International Securities Market Association (ISMA), the market regulator for what has been previously known as the Eurobond market and is now known as the international securities market, the market for the global issuance of debt securities. This market might also be called the "Regulation Q market" as a way of emphasising the distortionary effect of domestic regulation (the Regulation Q paradigm). Scott-Quinn comments: "This market came into existence to overcome the restrictions that individual countries, in particular the United States, imposed on the issue of debt securities in their domestic markets." Ibid.

30 Reinecke, op cit, 77-78. See also D Meerschwam, *Breaking Financial Boundaries: Global Capital, National Deregulation, and Financial Services Firms* (1991), 69ff.

31 Smith, op cit, 8.

32 Ibid.

33 In New Zealand, these events were preceded by Britain's entry into the European Community in 1972. At the time, New Zealand was primarily an exporter of agricultural products to Britain. C James commented: "Thenceforth New Zealand was on notice that its agricultural exports to Britain were to be phased down to negligible levels ... its status as farm to Britain's industrial cities was at an end. New Zealand was also on notice that selling agricultural produce to other markets would become more difficult, once British farmers expanded output in response to EC subsidies.": C James, *New Territory: The Transformation of New Zealand 1984-1992* (1992), 47. This resulted in an immediate decline in New Zealand's terms of trade (export prices versus import prices). In turn, the balance of payments current account (the balance between New Zealand's earnings and purchases from the outside world), went into deficit. C James notes: "[T]he deficit was made worse by rises in the price of oil [which was then] almost all imported, which pushed up the price of imports.": Id, 54. The blowout in the external deficit bought with it a rise in foreign debt. These factors were causal in the radical program of economic deregulation which commenced in 1984.

The result of these factors, "was a period of extremely high interest rates and exceptionally high volatility in the markets for financial instruments and foreign exchange."[34] This created an environment of macroeconomic instability.[35] An important consequence of increased instability was the impetus it gave to the internationalization and integration of the financial markets.[36] For example, Reinecke argues that macroeconomic instability contributed to the process of securitization of assets and that this in turn played a major role in fostering the internationalization of financial markets.[37] Macroeconomic instability also posed a challenge to fund managers. In response, managers became traders and not simply holders of securities. Innovative financial instruments were developed to facilitate trading and manage risk spurring the growth of the derivatives markets.[38] The trading of such instruments was facilitated by rapid advances in information technology and telecommunications.[39] Where domestic controls blocked the trading of new financial instruments, financial institutions switched to the more permissive international regime by expanding their international activities (the Regulation Q paradigm). These developments fuelled the financial boom of the 1980s.

The 1980s saw a dramatic increase in the issuance of US government securities as a result of continuing budget and current account deficits.[40] The Japanese, by contrast, experienced record financial surpluses.[41] Inevitably, trading in securities boomed. When interest rates fell, stock market activity reached record levels world-wide. As the equity markets reached record highs, the 1980s produced a new level of mergers, acquisitions and takeovers driven by new financing methods such as junk bonds. At the same time, the deregulation movement changed its focus from the removal of foreign exchange controls to internal financial markets. The process began in the US in 1975 (the so-called Mayday reforms of the New York Stock Exchange), and extended to the UK (with the "Big Bang" of 1986), and then to other Western nations.[42] One result was the dismantling of restrictions on participation in domestic securities markets by foreign financial firms. In Europe members of the European Economic Community (EEC) contemplated complete harmonisation of financial regulation by 1992.[43] That process would require deregulation (to open up access to individual

34 Id, 9.
35 Reinecke, op cit, 78, fns 119 and 120.
36 Id, 81.
37 Ibid. On securitization, see S Schwarcz, *Structured Finance: A Guide to the Principles of Asset Securitization*, 2nd ed (1993).
38 Four major new financial instruments in international financial markets were note issuance facilities, currency and interest rate swaps, foreign currency and interest rate options, and forward rate agreements. See, generally, D Thornton and C Stone, "Financial Innovation: Causes and Consequences": in K Dowd and M Lewis, eds, *Current Issues in Financial and Monetary Economics* (1992), 81.
39 See generally, D Chorafas, *The New Technology of Financial Management* (1992). For a contemporary review of the various financial instruments, see, R Klein and J Lederman, eds, *The Handbook of Derivatives and Synthetics: Innovations, Technologies and Strategies in the Global Markets* (1994).
40 For the reasons see Reinecke, op cit, 88.
41 R Wright and G Pauli, *The Second Wave: Japan's Global Assault on Financial Services* (1987) discusses this point and some of the consequences.
42 See generally, N Poser, *International Securities Regulation: London's 'Big Bang' and the European Securities Markets* (1991).
43 See D Servais, *A Single Financial Market*, 3rd ed (1995).

markets), and reregulation (to establish minimum standards across the EEC).[44]

Deregulation and the 1980s bull-market provided an opportunity for fund managers to invest internationally.[45] Prior to 1980 the most active international investors were Swiss, British and Dutch fund managers. In the 1980s these investors were joined by the large US financial institutions, and, in particular, US pension funds. The European and Japanese pension funds followed suit. These events signal the rise of the institutional investor.[46] The 1980s, then, witnessed an extremely active period of international investment, a point reflected in the academic literature. In particular, the legal literature of the late 1980s indicates a growing interest in the internationalization of the securities markets.[47]

The internationalization trend was slowed by the world-wide collapse of stockmarkets in October 1987.[48] The "domino effect" of the "crash" also illustrates the extent to which the international financial markets had become integrated. Whilst losses were heavy, the system coped surprisingly well: "no major bank or investment bank went out of business ... no major contracts were defaulted on, including the British Petroleum underwriting agreement. No major stock exchange closed."[49] Nonetheless, the "crash" of 1987 prompted inquiries by regulatory authorities, the most well-known instance being the study of the Brady Report.[50] A central finding of that report, namely that from an economic viewpoint, "what have been traditionally seen as separate markets - the markets for stocks, stock index futures, and stock

44 T Devinney and W Hightower, *European Markets after 1992* (1991); M Andenas and S Kenyon-Slade, *EC Financial Market Regulation and Company Law* (1993); E Wymeersch, ed, *Further Perspectives in Financial Integration in Europe* (1994).

45 The trend continues. A recent report states: "The last two years have seen a veritable explosion of portfolio investment by institutional investors ... in 'emerging markets' as stock markets become truly global in reach.": The Report of the Commission on Global Governance, *Our Global Neighbourhood* (1995), 136.

46 Smith comments: "The total of international investments of private pension funds in the eleven largest industrial countries, as estimated by InterSec Research, a leading pension-fund consulting firm, was $19 billion in 1980. By 1985, these had grown to $83 billion; by 1990 InterSec forecasts them to be over $300 billion, which would represent an incredible ten-year annual compounded growth rate of 32 percent. These pension funds, already a major factor in domestic markets, are becoming an equally powerful force in international markets.": Smith, op cit, 54. A more recent report states, "The total assets of institutional investors (excluding hedge funds) in 10 European countries, Japan and the United States at the end of 1991 is estimated to have been around $11.6 trillion.": H Blommestein and K Biltoft, "Trends, Structural changes and Prospects in OECD Capital Markets" in OECD, *The New Financial Landscape* (1995), 287, 299.

47 The canon is large but see, for example: Symposium, The Internationalization of the Securities Markets (1986) 4 Boston University International Law Journal 1; F Kubler, "Regulatory Problems in Internationalizing Securities Markets" (1987) University of Pennsylvania Journal of International Business, 107; Symposium, The Internationalization of the Securities Markets (1987) 11 Maryland Journal of International Law & Trade 157; Symposium, Internationalization of the Securities Markets (1988) 9 Michigan Yearbook of International Legal Studies, 1; Symposium, Can the International Securities Markets be Regulated? (1988) 14 Brooklyn Journal of International Law 249; Symposium, International Securities Regulation: Recent Developments in the United States, United Kingdom and the European Community (1990) 16 Brooklyn Journal of International Law 1; Nihon-Hastings Conference, Globalization of Securities Markets '90 (1991) 14 Hastings International and Comparative Law Review, 255; Committee on Internationalization of the Securities Markets of the American Branch of the International Law Association, "Transnational Aspects of United States Securities Regulation" (1991) Australian International Law News, 109.

48 J Toporowski, *The Economics of Financial Markets and the 1987 Crash* (1993).

49 Smith, op cit, 10.

50 *Report of the Presidential Task Force on Market Mechanisms* (1988).

options - are in fact one market"[51] applies *a fortiori* today - witness the concern in 1994 regarding the regulation of derivatives.[52] But as Smith notes:

> The fundamental characteristics of the new financial market that contributed so much to the expansion of activity - deregulation, institutionalization of investments, and heavy application of telecommunications technology - are not going to change because of the comparatively mild bottom-line effects of the crash of 1987, even if there is another crash. Today's markets are resilient, having pooled vast sums of money into a single global market that is accessible all over the world.[53]

Several conclusions can be drawn from this narrative. First, in the 1980s there was a trend towards increasing *integration* in world financial markets.[54] That trend was the result of change in various discrete areas and the complex interaction between those areas of change. As we shall see, the area of *technological change* was critical and unstoppable. The area of *macroeconomic change* was also significant but this is an area more capable of accommodation (ie, domestic strategies can be devised to cope). Another conclusion is that the changing environment of the financial markets had profound implications for the manner in which financial institutions operated. In short, the market for financial services was *transformed.* It became "global" via technological and macroeconomic change.

51 Id, vi.

52 For an overview of recent developments, see, D Cunningham, "US Regulation of Dealers in OTC Derivatives" in A Beller and M Mann, Co-Chairman, *International Securities Markets in 1994* (1994), 281. This discussion contains 10 appendices reproducing the full texts of various regulatory responses such as the SEC, CFTC and SIB Joint Statement of March 15, 1994 on OTC Derivatives Oversight and the Derivatives Supervision Act of 1994 (Leach Bill). See further: D Lynn, "Enforceability of Over-the-Counter Financial Derivatives" (1994) 50 The Business Lawyer 291; C Loomis, "The Risk that Won't Go Away" Fortune, March 7, 1994, 300; C Loomis, "Untangling the Derivatives Mess" Fortune, May 20, 1995, 33. The main question here is whether derivatives are a regulatory problem or a risk management problem as to which see: S McKenzie, ed, *Risk Management with Derivatives* (1992); Special Report, "Managing Risk" Business Week, October 31, 1994, 86 and E Swan, ed, *Derivative Instruments* (1994); Symposium: Derivative Securities (1995) 21 (1) The Journal of Corporation Law, 1; J Norton and C Olive, "Globalization of Financial Risks and International Supervision of Banks and Securities Firms: Lessons from the Barings Debacle" (1996) 30 The International Lawyer, 301; R Dale, *Risk and Regulation in Global Securities Markets* (1996) and H Benink, ed, *Coping with Financial Fragility and Systemic Risk* (1995).

53 Smith, op cit, 11.

54 A vivid example is provided by events following the 1987 sharemarket crash. Describing the impact on the Western Pacific securities markets, Malcolm Smith has commented: "The trend towards 'globalization' of the securities markets was dramatically highlighted on 'Black Monday', 19 October, 1987 when a major correction in the American market swept around the world with tidal wave proportions ... When the tidal wave moved out from Wall Street in the United States and into the region, it highlighted differences in the economic environments of the region's capital markets. The tidal wave ran into different kinds of barriers which channelled its full impact unevenly into those markets which were most open ... The Seoul Exchange was virtually quarantined ... The Tokyo Exchange was also awash with domestic funds and, with government assistance, the leading broking houses initially stemmed the tide ... The new Hong Kong Exchange simply closed for four days, thereby postponing the impact until the following Monday, when market capitalization fell by a record 33 per cent ... With Hong Kong, Seoul and Tokyo sheltering behind effective barriers, the selling tidal wave flowed down into Australia, Singapore and New Zealand, producing record declines in the various indices ...": M Smith, "Internationalisation of Western Pacific Exchanges" in CCH International, *Western Pacific Stock Exchange Guide,* Vol I, paras 10-000 to 10-110.

III. KEY CONCEPTS AND DRIVERS OF CHANGE: THE TECHNOLOGICAL DIMENSION

"The only constant was change".[55]

The preceding division sketched out a history of rapid change in the international financial markets in the period 1944-87. This division looks more closely at key concepts and other drivers of change. Whilst these matters are discussed separately, in reality they are substantially intertwined. For example, Bradley, Hausman and Nolan claim that globalization, information technology and telecommunications are the most significant drivers of strategic change and that they drive each other.[56] A distinction can also be made between exogenous and endogenous factors. We can say, for example, that globalization, information technology and telecommunications are truly exogenous factors that are unstoppable and have profound implications for all nations. Thus, a nation considering the future development of its securities markets must realise that these are not matters which can be changed; rather, strategies to accommodate them must be developed. Endogenous factors might include a decision at the national level to fund a deficit by borrowing rather than taking the hard political decisions required to reduce the deficit.[57] The resulting capital imbalance will affect the nation's financial system.[58] But this is a factor which can be changed if the requisite political will is present. Analysis of the technological dimension commences by identifying a master metaphor which extends beyond technological change in the international financial markets and serves to characterise the age we live in - the Information Age.[59]

1. The Information Age

The emergence of an information industry was forecast by Tadeo Umesao in 1963.[60] In the late 1960s, Daniel Bell proposed a knowledge-based post-

55 D Meerschwam, *Breaking Financial Boundaries: Global Capital, National Deregulation and Financial Services Firms* (1991), 1. This division draws on G Walker, "Technological Drivers of Change in International Financial Markets" (1997) 15 (2) Company and Securities Law Journal, 132.

56 S Bradley, J Hausman and R Nolan, "Global Competition and Technology" in Bradley, Hausman and Nolan (eds), *Globalization, Technology, and Competition: The Fusion of Computers and Telecommunications in the 1990s* (1993), 3. The literature here is extensive but see: U Gattiker and L Larwood, *Managing Technological Development* (1988); D Siegel, *Innovation and Technology in the Markets* (1990); J Karimi and B Konsynski, "Globalization and Information Management Strategies" (1991) 7 (4) Journal of Management Information Systems 7; D Chorafas and E Binder, *Technoculture and Change* (1992); D Chorafas, *The New Teehnology of Financial Management* (1992); M Lawless and L Gomez-Mejia, *Advances in Global High-Technology Management,* Vol 3 (1993); A Hald and B Konsynski, "Seven Technologies to Watch in Globalization" in S Bradley, J Hausman and R Nolan, op cit, 335; G Hayter, "Telecommunications and the Restructuring of the Securities Markets", id, 143; S Jarvenpaa and B Ives, "The Global Network Organization of the Future: Information Management Opportunities and Challenges" (1994) 10 (4) Journal of Management Information Systems 25; S Kimsey, "The Virtual Flight of the Cyber-Trader" Euromoney, June 1994, 45. On the implications for the securities markets, see: A Saunders and L White, *Technology and the Regulation of Financial Markets* (1986); H Lucas and R Schwartz, eds, *The Challenge of Information Technology for the Securities Markets* (1989); R Robertson, "Personal Investing in Cyberspace and the Federal Securities Laws" (1996) 23 Securities Regulation Law Journal 347; R Schwartz, ed, *Global Equity Markets: Technological, Competitive, and Regulatory Challenges* (1994).

57 Meerschwam, op cit, 60.

58 Id, 65-66.

59 See W Wriston, *The Twilight of Sovereignty: How the Information Revolution is Transforming our World* (1992), xi. A useful sociological perspective is D Lyon, *The Information Society: Issues and Illusions* (rep, 1994).

60 H Dordick, *The Information Society: A Retrospective View* (1993), 1.

industrial society.[61] In the late 1970s, Dordick and colleagues suggested that, with modern telecommunications and information technology, the industrialized nations were creating a marketplace on a network.[62] In 1981, Williams noted the advent of a communication revolution.[63] More recently, Walter Wriston has used the term, "Information Age". His main theme is that information technology, "is rapidly creating a situation that might be described as the twilight of sovereignty, since the absolute power of the state to act alone both internally against its own citizens and externally against other nations affairs is rapidly being attenuated."[64] The principal reason for this assertion is the "Information Revolution", namely, additive developments in science and technology which are altering national and international events.[65] The Information Revolution is equally as significant as the Industrial Revolution which preceded it[66] and comprises the changes brought about by information technologies (the most important being modern communications technologies for transmitting information and modern computer systems for processing it).[67]

According to Wriston, the convergence of computers and telecommunications decentralizes power and knowledge. It erodes the traditional concept of national sovereignty, powerfully affecting, for example, the power of the state to issue and mandate the value of currency. Wriston's analysis of characteristics of the Information Age is wide-reaching, extending well beyond change in international financial markets, tracing implications for democracy, the economy[68] and management structures.[69] This serves as a backdrop for much of the discussion which follows. Although generalised, many of his propositions force us to look beyond conventional categories. For example:

> The new international financial system was built not by politicians, economists, central bankers, or finance ministers but by technology. Today information about the diplomatic, fiscal, and monetary policies of all nations is instantly transmitted to electronic screens in hundreds of trading rooms in dozens of countries. As the screens light up with the latest statement of the president ... of the Federal Reserve, traders make a judgement about the effect of the new policies on currency values and buy and sell accordingly. The entire globe is now tied together in a single electronic market moving at the speed of light ... This enormous flow of data has created a new world monetary

61 Ibid.
62 Ibid.
63 Ibid.
64 Id, xii.
65 Id, 2.
66 Id, xi. Dordick argues that information technology is linked to economic growth but notes that nations will only grow if they can parlay the new technologies with skilled human resources: Dordick, op cit, 26-29.
67 The Report of the Commission on Global Governance, op cit, 136. Wriston states: "The marriage of these two technologies is now consummated. It is impossible to tell where telecommunications stops and where computing begins ... In addition to powerful effects on culture and the pace of life, this revolution has changed what we do for a living. It has made many or most of us into what Peter Drucker long ago called 'knowledge workers' and is changing the way the rest of us do such traditional jobs as ... selling and shipping ... [U]nderlying and driving the information revolution are two powerful tides that are rocking the power structures of the world: The first is the vast increase and swift and widespread dissemination of knowledge and of information of all sorts. The second is the increasing importance of knowledge in the production of wealth and the relative decline in the value of material resources": Wriston, op cit, 2-3.
68 See also, J Huey, "Waking up to the New Economy" Fortune, June 27, 1994, 36.
69 T Malone and J Rockart, "How will Information Technology reshape Organizations?: Computers as Coordination Technology" in S Bradley, J Hausman and R Nolan (eds), *Globalization, Technology, and Competition: The Fusion of Computers and Telecommunications in the 1990s* (1993), 37.

standard, an Information Standard, which has replaced the gold standard and the Bretton Woods agreements. The electronic global market has produced what amounts to giant vote-counting machine that conducts a running tally on what the world thinks of a government's diplomatic, fiscal and monetary policies. That opinion is immediately reflected in the value the market places on a country's currency.[70]

The two key elements of the Information Age are information technology ("IT") and globalization.

2. Information Technology ("IT")

This subdivision provides a snapshot of the growth of IT and some definition of the term. Shurkin has documented the history of computers.[71] What is striking about his and other accounts is the rapid advance of IT. Writing in 1985, Tom Forester captures this shift in a vivid passage:

> The first electronic digital computer built in the US, ENIAC, was unveiled at The University of Pennsylvania in 1946. It weighed 30 tons, filled the space of a two-car garage, and contained 18,000 vacuum tubes, which failed on average at the rate of one every seven minutes. It cost half a million dollars at 1946 prices.
> Today, the same amount of computing power is contained in a pea-sized silicon chip. Almost any home computer costing as little as $100 can out-perform ENIAC. Put another way, if the automobile and airplane businesses had developed like the computer business, a Rolls Royce would cost $2.75 and run for 3 million miles on one gallon of gas. And a Boeing 767 would cost just $500 and circle the globe in 20 minutes on five gallons of gas.[72]

As Forester indicates, the key development was the microprocessor, the silicon chip packed with transistors. The transistor replaced the vacuum tube. Made of "semiconductor" materials that may or may not conduct a current, transistors are far more compact and durable than vacuum tubes, use far less electricity and produce far less heat. Between 1956 and 1962, new US firms such as Texas Instruments developed economical ways to manufacture integrated circuits where a number of transistors are combined on one silicon chip. Subsequently, systems firms such as IBM began to combine large numbers of integrated circuits to make computers. At this point, the possibility of widespread commercial and military use was apparent. Chip technology has grown explosively. The number of transistors that could fit on a single chip has expanded from 10 (small-scale integration), to 100 (medium-scale integration) and, by the 1970s, to over a 1,000 (large-scale integration). In the late 1970s very large-scale integration (VLSI) was developed in which hundreds of thousands of transistors are embedded on a single silicon chip. Today, chip capability doubles every 18 months (Moore's Law).[73] At present Intel can place 3.3 million transistors on a single half-inch chip.[74]

Information Technology has been described as "a term of art used to describe electronic mechanisms for gathering, storing retrieving, and

70 Wriston, op cit, 8-9. R O'Brien, *Global Financial Integration: The End of Geography* (1992) develops an argument to the same effect.
71 J Shurkin, *Engines of the Mind* (1984).
72 T Forester, "Editor's Introduction" in T Forester, (ed), *The Information Technology Revolution* (1985), xiii. For recent figures on the falling cost of technology see *Financial System Inquiry Discussion Paper* (AGPS, 1996), 55.
73 J Huey, "Waking Up to the New Economy" Fortune, June 27, 1994, 36, 37.
74 D Kirkpatrick, "Intel goes for Broke" Fortune, May 16, 1994, 42, 44.

transmitting data."[75] The key IT device is the computer which affects the securities industry at a functional and structural level.[76] Indeed, the *Market 2000* study identified technology as a key area of change in the equity markets.[77] IT can be differentiated from traditional media in four ways.[78] First, the storage capacity of information on computers is virtually limitless (particularly given the increases in chip capability); second, the transmission speed of information is close to instantaneous and materials enhancement (fibre-optic cable) will allow simultaneous information transmission; third, IT allows ease of access to information with a high degree of accuracy, and finally, IT allows rapid reproduction, modification and discovery of information. There are a number of implications for the securities industry. Consider, for example, the following: "[A]t a minimum, technological advances will make it possible for public investors to obtain access to markets and other market participants directly. Technology now allows institutional investors to transact with one another without professional intermediation. This will increase in the future."[79] What then happens to intermediaries such as stockbrokers? Presumably, many of their traditional tasks are rendered redundant. In this way, technology will directly affect the organizational structure of the industry.[80]

3. Telecommunications

Mayo provides an account of the evolution of the modern telephone network from 1876 to 1951, supplying the essential background to the new revolution in telecommunications.[81] The shift from telephone to telecommunications is represented by the time between Bell's invention of the telephone in 1876 and the introduction of direct distance dialling in 1951. With direct distance dialling, the telecommunications network could automatically interconnect tens of millions of users through thousands of switching centres. During this period, beginning in the 1920s, methods for carrying pictures and data across telephone lines developed: telephotos in 1924; television in 1927; teletypewriter in 1931 and dataphone in the 1950s.[82] Also, by the 1950s, the telecommunications network was distributing nationwide radio and television.

75 D Langevoort, "Information Technology and the Structure of Securities Regulation" (1985) 98 Harvard Law Review 747.

76 Id, 747-8.

77 For example, "technology will continue to drive the evolution of the equity markets.": Market 2000, 32.

78 M Katsh, *The Electronic Media and the Transformation of Law* (1989), 21. See also, M Katsh, *Law in a Digital World* (1995).

79 *Market 2000*, op cit, 33.

80 There is a survey of the issues in A Lo, ed, *Industrial Organization and Regulation in the Securities Industry* (1995). For a topical discussion, see R Baker, "Freed is Good" The Bulletin, March 11 1997, 44-48 (arguing that investors will soon bypass stockbrokers). Barclay's Bank has installed a service whereby its customers can receive reports on shares and buy or sell them by videophone. The service, "BarclayZone" wraps telecommunications, IT and audiovisual technology to provide a retail broking service located in branches: see P Moriera, "UK bank goes for brokers by video" The Australian, 9 January 1996, 22. Another press report envisages an on-line stock exchange on the Internet: see Anon, "A stock market brews in cyberspace" The Press, 20 April 1996, 28. Australia has recently moved to allow electronic prospectuses: see ASC Draft Policy Statement issued 6 May 1996; I Ries, "Superhighway lane opens" The Australian Financial Review, May 7 1996, 64. In New Zealand, on-line investing was introduced in 1996: see G Sheeran, "Trading shares in Cyberspace" Sunday Star-Times, November 10 1996, D2.

81 J Mayo, "Evolution of the Intelligent Network" in T Forester, ed, *The Information Technology Revolution* (1985), 106. See also J Phillips, "Some Thoughts on Changing Communications Technology" (1996) 7 (3) Entertainment Law Review, 116.

82 Id, 109.

Two important developments for telecommunications were the development of the first fully transistorised digital computer in 1958 and, in 1963, the Syncom synchronous satellite which remained "fixed" over one point of the earth's surface. Digital technology meant that computers and telephone lines could be linked thereby transmitting computer generated data via telephone lines. Satellites opened the door to instant communications throughout the world. A third breakthrough occurred in 1957 when the laser was proposed. The technology soon evolved and it was quickly realised that the light beams from solid-state lasers had enormous information bearing potential. An efficient transmission medium for light came with the emergence of transparent glass fibres which "conduct" photons more efficiently than copper wires conduct electrons. Lasers and fibre-optic cables are ideally suited to high-speed digital transmission. The key technologies were soon translated into real communication systems. At the same time, the new technology was merged with the old: "[a]s a result, the network evolved in a constructive efficient manner. This deliberate yet rapid evolution has opened the door to a largely digital, multipurpose intelligent network and to the myriad new service capabilities of the information age."[83]

4. Convergence of Information Technology and Telecommunications

Perhaps the most significant technological development for securities regulation - and a host of other areas - is the convergence of IT and telecommunications, enabling the globalization of capital. This convergence was perceived as early as 1985 when Forester wrote:

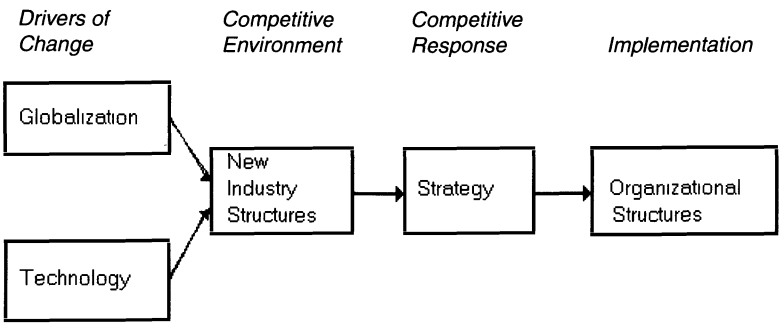
> This dramatic reduction in the cost of computing power made possible by microelectronics has coincided with the conversion of telecommunications networks from analogue to digital signals - the same 'stream of numbers' technique used in computing. The result has been the 'convergence' of electronics, computing, and telecommunications and the unleashing of a tidal wave of technological innovation which scientists are now calling the 'Information Technology Revolution'. This revolution is not confined to the world of science and technology: it is bringing about dramatic changes in the way we live and work - and maybe even think.[84]

There is a further dimension. Recall that Bradley, Hausman and Nolan see globalization and technology as key drivers of strategic change in the world today. Their focus is on the impact of globalization and technology in the way business is conducted. Significantly, they connote technology as the fusion of IT and telecommunications. Figure 1 which follows is reproduced from their analysis. It shows globalization and technology occurring in a competitive environment forcing new industry and organizational structures and strategies.

83 Id, 112. For a general discussion, see D Tapscott, *The Digital Economy* (1996). An excellent account of the development of telecommunications in the Western Pacific Rim is E Naom, S Komatsuzaki and D Conn, eds, *Telecommunications in the Pacific Basin: An Evolutionary Approach* (1994).

84 T Forester, "Editor's Introduction" in T Forester, ed, op cit, xiii.

Figure 1
Drivers of Change



Source: Bradley, Hausman and Nolan, op cit,4.

Bradley, Hausman and Nolan draw three main conclusions. First, a new fusion of information technology and telecommunications is occurring that will radically affect all companies, whether or not they were significant users of the technology in the past. Change is driven by the needs of global competitors (end-user demand). Second, the new fusion of technology is extremely dynamic and will change the fundamental structure of firms. Future structures will be "networked" to facilitate more co-operative work; hierarchical structures will diminish. Third, the competitive strategies of firms will be affected by the creation of new industries, restructuring of existing industries and will focus on gaining competitive advantage through the fusion of information technology and telecommunications. This implies massive investments in technology.[85]

These conclusions have profound and observable consequences for securities firms.[86] Hayter, for example, has noted the colossal sums spent on technology at the time of the Big Bang in London in October, 1986. He estimates that around 1 billion sterling was spent.[87] Another example provided by Hayter is the creation of the SEAQ International market. Briefly, there was dual capacity trading in non-U.K. equities by Eurobond firms occurring in London off The Stock Exchange. Two years before Big Bang the volume of this trading had increased to the extent that Reuters had begun to offer a service on its worldwide system in these stocks. The strategic threat was plain; the foreign equities market might move to Reuters before The Exchange could offer an electronic home on SEAQ. Even worse, if foreign equities could be traded via Reuters, so could UK domestic stocks. But SEAQ was two years away. Here we have an example of a strategic threat posed to a stock exchange by the dynamics of the new "fused"

85 S Bradley, J Hausman and R Nolan, "Global Competition and Technology" in Bradley, Hausman and Nolan, op cit, 5-6.

86 See, for example, E Clemons and B Weber, "London's Big Bang: A Case Study of Information Technology, Competitive Impact, and Organizational Change" (1990) 6 (4) Journal of Management Information Systems 41. In 1996, several Australian and New Zealand sharebrokers set up sites on Internet's World Wide Web, giving them the computer equivalent of a shop window. Set-up costs are said to be substantial: N Birss, "Brokers set to go on-line" The Press, June 22 1996, 25.

87 G Hayter, "Telecommunications and the Restructuring of the Securities Markets" in Bradley, Hausman and Nolan, op cit, 143, 155. See also J Fishman, *The Transformation of Threadneedle Street: The Deregulation and Reregulation of Britain's Financial Services* (1993), 232-235.

technology.[88] The strategic response was to accelerate the pace of change. The result provides a good illustration of Bradley, Hausman and Nolan's propositions, particularly the focus on gaining competitive advantage through the fusion of information technology and telecommunications, since "the creation of SEAQ International ... probably did more to enhance London's position in the international securities industry than any other at the time."[89] What happened neatly illustrates the flow-chart in Figure 1:

> The Exchange decided to act at once. It launched SEAQ International in June 1985, fifteen months before the Big Bang. The new market in foreign equities was nurtured over many months, and now trading volumes on some days exceed the value of SEAQ domestic trading. Leading stocks are traded from 21 countries, significant trading volumes having been won from the continental European bourses, notably Paris, Frankfurt, and Stockholm.
> Success was possible only because The Exchange was able to assemble an effective system quickly from components already at hand. In response to the immediate threat, a screen market was developed in three months. Highly important to this effort was The Exchange's control of an information network of some 15,000 screens in the United Kingdom and United States and links with information vendors that facilitated an even broader dissemination of market information. Without this infrastructure, the international equity market would undoubtedly have joined the foreign exchange market on the Reuters global network.[90]

In this example we see the convergence of IT and telecommunications having a causative and facilitative impact on the globalization of international capital markets.[91]

5. End Users Demand the Integration of Information Technology and Telecommunications

End users demand the integration of IT and telecommunications. Thus, global firms such as the Society for Worldwide Interbank Financial Telecommunications (SWIFT), demand sophisticated integrated systems to compete, for example, in the international market for securities message traffic.[92] The concept is straightforward but requires some elaboration to highlight the implications. Richard Nolan has developed a Stages Theory, a series of S-shaped curves to describe organizational learning on major computer-based technologies.[93] The theory can be used to show the demand for information services. Nolan postulates three S-shaped curves of 15 to 20 years' duration commencing in 1960 corresponding to the DP (data-processing) Era, the Micro Era, and the Network Era.

88 See Figure 1, supra.

89 Id, 156. See also C Cox and D Michael, "The Market for Markets: Development of International Securities and Commodities Trading" (1987) 36 Catholic University Law Review 833. There is a similar analysis in C Bradlay, "The Market for Markets: Competition between Investment Exchanges" in J Fingleton and D Schoenmaker, eds, *The Internationalisation of Capital Markets and the Regulatory Response* (1992), 183.

90 Ibid.

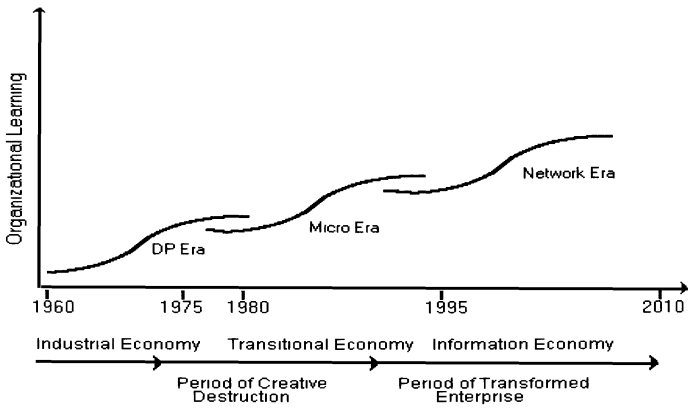
91 Strategic skirmishing in this area continues: see, L Linklater, "ESI and the Stock Exchange" (1996) 17 (8) The Company Lawyer 245 (discussing the Stock Exchange's strong-armed reaction to the product offered investors by Electronic Share Information Ltd and Sharelink Ltd).

92 P Penrose, "Swift eyes new markets" Banking Technology, October 1994, 18.

93 S Bradley, J Hausman and R Nolan, "Global Competition and Technology" in Bradley, Hausman and Nolan, op cit, 8-9.

Figure 2

Stages Theory



Source: Bradley, Hausman and Nolan, op cit, 9.

In the DP Era (approximately 1960 to 1980), industry products which supported mainframe computing dominated. Demand within firms was for the automation of low-level clerical and factory work via mainframe computing. The application paradigm was "automation". Pre-existing procedures were automated to achieve efficiency gains resulting in a decrease of clerical and blue collar workers.[94] The hierarchical structure of the organization was unaffected. By the mid-1970s, the focus shifted to demand for computer-based technology in the middle of the organization, i.e., to such people as engineers, accountants and managers. Their demands, however, were different from that for computing at the bottom of the organization: "The DP Era paradigm of automation was generally attempted at this level, and it usually failed. Work done by mid-level professionals tended to be too complicated and esoteric to automate in the same way that clerical and factory work had been automated."[95]

The Micro Era, according to Nolan, runs from the late 1970s to around 1995. In 1985 Shoshana Zuboff published her seminal work, *In The Age of the Smart Machine*.[96] That text introduced the term, "informate".[97] Bradley, Hausman and Nolan view informating as the new paradigm introduced to address the problem of mid-level professionals.[98] A second key insight made

94 Bradley, Hausman and Nolan state: "Following about 10 to 15 years of investment, a critical mass of automation would be achieved, at which point a number of firms would downsize their blue collar and clerical work forces by as much as 20% to 30%, leading to a lower overall cost structure in the industry. Downsizing of the work force at the factory and clerical levels seemed to begin in most industries in the mid-1970s and continued aggressively throughout the 1980s." Id, 10.

95 Ibid.

96 S Zuboff, *In The Age of The Smart Machine* (1985).

97 Id.

98 "The objective of informating, unlike that of automating, is not to replace professionals with computing, but to use computing to leverage the work of professionals. The microcomputer, with associated innovations such as ... spreadsheets, word processors, computer-aided design ... fuelled the Micro Era. With a critical mass of professionals today equipped with micro-computers, we are seeing the beginnings of an aggressive and permanent downsizing of the work force in the middle of the organization, similar to what we saw at lower levels in the mid-1970s and throughout the 1980s. In the Micro Era, computers ... have satisfied another less well-understood demand in the organization. Microcomputers have increasingly been incorporated directly into the products and services of firms": S Bradley, J Hausman and R Nolan, op cit, 10-11.

during this period was that the technological revolution required fundamental organizational change in order to realise productivity gains.[99] This insight is a critical component of the Network Era.

We are presently in the Network Era (mid-1990s through 2010). Past investments in computers are the basis for the emerging demand for networks. For example, wide-band networks (WANs) evolved from the base of automated systems. Local-area networks (LANs) were initially used in the Micro Era to link teams of professionals. They have now been connected with WANs to enable local groups to connect with others in different geographical locations. The Network Era involves radical change: "These steps toward nested, integrated electronic networks of computers have a profound impact on the structure of organizations and the service value provided to customers."[100] Bradley, Hausman and Nolan characterize the emerging management structure of the Network Era as follows:

> The demand for tools that enable people to work differently is associated with the evolution of new organizational structures. The predominant form of organization in the Industrial Economy, the divisionalized functional hierarchy, is characterized by a set of management principles centered around the notion of a hierarchy: chain of command, span of control, paper-based memo communications ... This organizational structure is slowly giving way to an alternative structure, termed the 'network' structure, characterized by an alternative set of management principles: point-to-point electronic-based communication, teams, and strategic alliances. The network structure is more appropriate for leveraging information technology.[101]

What are the implications for the securities industry? Recall the *Market 2000* prediction that technological advances will make possible direct public access to the market. The strategic response of a stockbroker might be to move rapidly to a network organizational structure in order to relate directly with clients via electronic-based communication to provide added value by way of, for example, real-time display of equity analysis and research on a particular stock. In many countries investors can now buy and sell shares from home via the Internet or through an on-line service using Windows 95 software.[102]

6. Conclusions

The first division of this article gave a brief narrative of the changing environment of international financial markets since 1944. We can now see that rapid advances in technology were a critical component in those

99 A recent account is M Magnet, "The Productivity Payola Arrives" Fortune, June 27, 1994, 79 who states: "To unlock an epochal technology's power, companies have learned that they must restructure themselves and how they work as they weave computers into their most basic processes. A technological revolution ... is more than a merely technological matter. It entails an organizational transformation ... That's what U.S. businesses recent frenzy of reengineering has been all about, as companies flatten and decentralize along a unifying nervous system of the new information technology." Ibid.

100 Bradley, Hausman and Nolan, op cit, 12.

101 Ibid. Consider, for example, the number of companies seeking to do business on the Internet. M Cronin states: "But the most compelling argument for connecting is that the Internet is the biggest and earliest manifestation of the way business is going to be conducted from now on. Networked information and communication are the standard for the future": R Tetzeli, "The Internet and your Business" Fortune, March 7, 1994, 56. T Stewart, "The Netplex: It's a New Silicon Valley" Fortune, March 7, 1994, 62 identifies the Washington, DC area as the crossroads of the electronic highway.

102 R Robertson, op cit; Anon, "Don't Call Your Broker: On-Line Trading, Anywhere, Any Time" Taipan (1996) 8 (9) 13 (lists US and Australian on-line brokers), and, M McGregor-Lowndes, "Corporate Disclosure: The Internet and the Australian Securities Commission" (1996) 14 Company and Securities Law Journal, 219.

changes. First, technology has provided a new metaphor for our present times in the term, the Information Age. Second, technology has facilitated globalization of capital and business. Third, technology has transformed the competitive environment of financial firms to the extent that the organizational structures of firms have changed. When we add massive macroeconomic change to the technological change observed above, we can identify a *transformation in the market for financial services.*

IV. KEY CONCEPTS AND DRIVERS OF CHANGE: THE MACROECONOMIC DIMENSION

Technology alone could have transformed the market for financial services. Consider, for example, restrictions on interstate banking in the US.[103] Commenting on recent moves to allow interstate banking in the US, Haverson points out, "The law makers are only catching up with reality ... technological progress in the banking industry has been so great in the past decade that many of the laws against interstate banking became redundant years ago. Today's delivery systems are so far in advance of the outmoded restrictions that [the proposed legislation] is basically a recognition of reality ... letting the banks go physically where they've been technologically for a long time."[104] But this change would not have occurred so quickly without macroeconomic change; in particular, a general movement to monetarist economics, deregulation of financial markets and the build up of large international capital imbalances in the 1980s.

1. The Collapse of the Bretton Woods System

The breakdown of Bretton Woods in 1971 is generally regarded as pivotal in the transformation of the international financial system. The shift from fixed to flexible exchange rates, offered policymakers more freedom in monetary and fiscal policymaking at the expense of exchange rate control. The adverse consequences were not fully appreciated. Meerschwam comments:

> These institutional reforms had unexpected consequences, however. Not only did they facilitate imbalances, they failed to relieve ultimate policy pressures. They simply delayed such pressures. *In other words, policymakers won the freedom to procrastinate over unpopular choices, not to escape them.* Also, the new institutional freedoms encouraged inflation and subsequent asset price (interest rate) volatility. Such volatility became one incentive to alter the national financial systems of the United States, Japan, and the United Kingdom, as well as the behaviour of the financial intermediaries operating in these countries.[105]

Part of the explanation for these "unexpected consequences" is found in a particular view of international trade held pre-Bretton Woods.[106] Some theorists saw measurable gains from free international trade but did not focus on the means by which trade was financed (ie, the exchange of monies to settle accounts). A complementary school of thought views imbalances in international trade, "as temporary deviations ... as a result they concentrated

103 See generally, R Bhala, *Foreign Bank Regulation after BBCI* (1994).
104 P Harverson, "Up to Speed on the Interstate" Banking Technology, October 1994, 54, 56.
105 D Meerschwam, op cit, 12. Emphasis added. See also, D Gruen, "Globalisation and the Macroeconomy" in Economic Planning Advisory Commission, *Globalisation: Issues for Australia* (1995), 129-153.
106 Ibid.

on the adjustment mechanisms that would restore balanced trade."[107] While free trade was perceived as desirable, there was debate as to the nature of the international payments system: should exchange rates be fixed or flexible? The question could not be avoided after World War II.[108]

Bretton Woods established an international monetary system in which currencies were pegged against the US dollar and the US undertook to exchange dollars for gold in official transactions at a fixed price of $35 per ounce (in effect, a modified gold standard). But there was a "basic asymmetry" in this system which led to the adoption of a flexible exchange rate system.[109] Meerschwam argues that the move to floating exchange rates placed undue importance on the significance of the current account:[110]

> In this environment, a flexible exchange rate system was enormously attractive. Flexible rates would offset the current account against the capital account, since *no* official account transactions were needed to support a particular exchange rate. They would also do away with short-term speculative capital flows, because the movements of the exchange rate cannot be predicted. If policymakers were correct in their implicit assumption that long-term capital flows between developed nations were of only minor importance, then the capital account would be balanced. In a world with no official account transactions *and* balance on the capital account, *flexible rates would balance the current account.* And with current account equilibrium, policy coordination would be less important. Each country's monetary and fiscal policies could be designed simply to fulfil its own domestic objectives; external equilibrium would be guaranteed by the flexible exchange rate. I suggest that external (or current account) balance and policy independence were the true 'problems' that flexible rates were intended to solve ... the reality was very different from this attractive ... solution ...
>
> Flexible rates gave [policymakers] the hope that they would have new freedom in dealing with domestic macroeconomic management - freedom from all worries about external accounts. They could then concentrate on the domestic economy ... this expectation was a great miscalculation ... The perceived new freedom in monetary and fiscal policies actually led to new problems, beginning with massive inflation and more volatile interest rates. *These problems provided a powerful incentive to fundamentally reshape the financial systems of every major center of finance ... This reshaping, in turn,*

107 Id, 17.

108 "At that time, defining the structure of the new system meant choosing between fixed and flexible rates; or, to put it differently, between intervention by the officials to support the fixed rate or reliance on the market mechanism to set prices (exchange rates) in the foreign currency markets ... But policymakers could not afford the luxury of long-term debate; after World War II, institutional arrangements had to be made, and these relied primarily on fixed rates": Id, 24.

109 "If ... the exchange rate had been pegged at a ... wrong level, then, rather than forcing domestic policy actions or official intervention, the Bretton Woods system allowed for parity changes ... for every nation except the United States. No parity change would be possible if the United States were to find itself in a position of fundamental disequilibrium on the current account, because under the modified gold standard, all other countries pegged against the dollar ... Britain could change the par value of its currency ... by devaluing against the dollar ... but the United States, in contrast, could take no similar action. It could only ask all other countries to change their currency values against the dollar. This basic asymmetry was a serious drawback to the fixed dollar-linked rates system, which became increasingly apparent during the 1960s, as the international accounts of the United States worsened ... The special position of the dollar combined with a lack of pressure on surplus nations to cause the entire system to breakdown.
In the result, the US government closed the convertibility of dollars to gold in August 1971 thereby forcing the replacement of bilateral exchange rate adjustments with multilateral adjustments. In December 1971, at the Smithsonian conference, the major trading nations agreed that the dollar's exchange rate could be changed through mutual consultation, however, this agreement was later abandoned. In 1973, a flexible exchange rate system was adopted.
The system ... facilitated the onset of inflation in the 1970s, the massive capital flows of the 1980s, and finally a vast reorganization of the US financial system": Id, 28-33.

110 For definition, see below.

effectively transformed the operating behaviour of the financial services firms ... Finally, these changes became the seedbed for the massive trade imbalances and capital flows of the 1980s. In short, the 1970s and 1980s saw the breakdown of local boundaries in finance.[111]

2. International Capital Imbalances in the 1980s

This subdivision requires a brief introduction explaining a country's balance of payments accounts. These accounts record international trading, borrowing, and lending. There are three balance of payments accounts: the current account; the capital account and the official settlements account.[112] A capital imbalance refers to a deficit or surplus on the current account. For example, Parkin examined the US balance of payments accounts in 1990.[113] At that time, the US had a current account deficit of $92.1 billion. Parkin's explanation of how that current account deficit was paid for is useful background for the following discussion. He asked: "How do we pay for our current account deficit? That is, how do we pay for imports that exceed the value of our exports? We pay by borrowing from abroad. The capital account tells us by how much. We borrowed $88.5 billion but made loans of $57.7 billion. Thus our net identified foreign borrowing was $30.8 billion."[114] The enormous current account deficit shown here demonstrates that the assumption that flexible rates would balance the current account was fundamentally flawed.

The collapse of Bretton Woods was closely followed by the oil crisis of 1974. The oil shock prompted trade imbalances and offsetting capital flows: "The net result was worldwide recession and inflation."[115] The policy issue then becomes, according to Meerschwam, are fixed or flexible rates a better tool for dealing with inflation? Fears of losing foreign reserves under a fixed rate regime would force officials to consider macroeconomic adjustments as a means of dealing with external accounts. Contrast the position under a flexible rate regime:

> Under flexible rates, intervention was unnecessary, and governments were free to pursue their own internal fiscal and policy mix without much regard to the external sector. Thus expansionary monetary or fiscal policy could be pursued with the objective of sheltering an economy from the *domestic* impact of the oil shock. A flexible exchange rate was expected to deal with the external account; as I have suggested, many policymakers even considered flexible rates adequate to the task of balancing the current account.
>
> The realities were quite different. Fundamental forces - oil price shocks, changes in savings behaviour, and new types of macroeconomic management such as supply side economics - combined with the new flexible rate system to produce higher levels of inflation during the 1970s, as well as large and sustained current and capital account

111 Id, 34-36. Emphasis added.

112 M Parkin states: "The current account records the receipts from the sale of goods and services to foreigners, the payments for goods and services bought from foreigners, and gifts and other transfers (such as foreign aid payments) received from and paid to foreigners ... the largest items in the current account are the receipts from the sale of goods and services to foreigners (the value of exports) and the payments made for goods and services bought from foreigners (the value of imports) ... The capital account records all the international borrowing and lending transactions. The capital account balance records the difference between the amounts that a country lends to and borrows from the rest of the world. The official settlements account shows the net increase or decrease in a country's holdings of foreign currency." M Parkin, *Economics,* (2nd ed, 1993), 982-983.

113 Ibid.

114 Id, 983.

115 Meerschwam, op cit, 37.

imbalances between *developed* countries such as Japan and the United States during the 1980s. In the early 1970s, such inflation and financial pressures started the United States (and indirectly, Japan and the United Kingdom) on the road to national financial reform. The capital flows of the 1980s completed the job. They demonstrated capital market integration and international savings imbalances.[116]

The problem can be described in this way: there was an assumption that flexible rates would free domestic policymakers from foreign reserve constraints. The assumption was correct but downplayed the role of the external sector in domestic policymaking under a flexible exchange rate regime. The point is worth stressing because New Zealand[117] fell into the trap outlined by Meerschwam.[118] But in the case of New Zealand a massive accumulation of foreign debt under a *fixed* exchange rate provided the major constraint on policy resulting in the deregulatory reforms begun in 1984.[119]

Meerschwam's analysis of international capital imbalances in the 1980s begins with the fact of flexible exchange rates in the 1970s. Flexible exchange rates meant that there was no short-term international pressures to defend an exchange rate. Without such pressure, expansionary monetary policy became a tool for domestic purposes, creating inflation and fuelling increases and volatility in interest rates. [120] Higher and more volatile rates plus increased international capital flows changed the business climate; "inflation became the stimulus for financial product innovation, causing a breakdown of existing boundaries between vendors and products within national financial systems."[121] In addition, international capital flows allowed an escape route from national systems.

A massive redistribution of international assets occurred in the 1980s. The best example is the United States. Here, borrowing abroad to finance current account deficits grew so that the country became a net borrower in the world economy: "in a massive deficit-induced Keynesian expansion, the United States borrowed heavily in the international market at a time when other countries (eg, Japan) with a different set of domestic policy preferences were willing to supply necessary financing."[122] As a result, in a short eight

116 Id, 38-39.

117 C James, op cit, 62-65.

118 "Suppose the authorities in one country decide to embark on a politically popular program of domestic expansion financed through heavy international borrowings. Through this program of borrowing, the authorities cause large and sustained deficits on the current account, which are mirrored in large and sustained capital account surpluses. Unlike a situation in which a country is anxious about depleting its foreign reserves in defence of a fixed exchange rate, in this case a nation is not *forced* to change its macroeconomic policies - at least not in the short run. Although the current account deficit means that liabilities are incurred that will have to be paid off in the future, politically undesirable adjustments of domestic policies (such as a monetary or fiscally induced recession) can be postponed so long as international markets finance domestic politics. In fact, only one thing happens immediately: the asset position of the expansive nation changes.
In such a case, policymakers only manage to procrastinate over unpopular adjustment decisions; they cannot avoid them permanently. Their initial desire for long-term policy independence produces an over-simplified view: When policymakers focus on domestic outcomes and ignore external accounts, their indifference lasts only until a new source of discipline appears. Eventually, the accumulation of external debt or credit provides the new constraint on policy": Id, 44. New Zealand freed interest rates in 1984 and floated its currency in 1985. See E Carew, *New Zealand's Money Revolution* (1987), 176-178.

119 R Hamilton and G Shergill, *The Logic of New Zealand Business* (1993), 6-7; C James, op cit, 54-55.

120 In New Zealand expansionary *fiscal* policy (the "Think Big" projects), was used in an attempt to stimulate the domestic economy.

121 Id, 50.

122 Id, 60.

years, the US went from being the world's largest creditor nation to the largest debtor nation.[123]

Meerschwam concludes his analysis by identifying the various factors that interacted to facilitate large international capital flows. First, the flexible exchange rate introduced post-Bretton Woods, carrying with it the assumption that neglect of the external sector was costless. Second, disenchantment with Keynesian policies, allowing for an emphasis on supply side economics. Third, the resulting economic outcomes in the US: highly inflationary monetary policies; contractionary (disinflationary) monetary policies, and, budget deficits caused by expansionary (inflationary) fiscal policy in the 1980s.[124] In summary, the 1980s saw large current account deficits, increased capital imbalances and massive cross-border capital flows.

3. The Macroeconomic Context of the Pre-Transformation Market for Financial Services

In this subdivision, we consider the main features of domestic finance in the major markets prior to the 1970s (the "pre-transformation" market for financial services), and place them in a macroeconomic context. Clive Crook summarizes these features as segments, control, relationships and protection.[125]

The pre-transformation financial services market was *segmented.* Barriers between the segments were erected by government regulation. Markets divided by regulation tend to give monopolistic powers to favoured suppliers; to deal with that power, regulators were obliged to *control* the industry. Control was imposed by "setting prices (notably interest rates), or by using quantitative restrictions (for instance, credit controls) or through what used to be called 'moral suasion' ... Control was the *quid pro quo* for security."[126] A problem with this type of industry structure is that it is not completely price sensitive (contrast here the post-transformation position where investors and issuers, as a result of higher and more volatile interest rates, became more interest rate, and hence price, sensitive). In the absence of price-driven banking, *relationships* were developed.[127] The fourth feature identified by Crook is *protection*, specifically protection from foreign competition.[128] This market, however, became an increasingly artificial

123 Id, 53.
124 Id, 65.
125 C Crook, "Fear of Finance" The Economist, September 19, 1992, 1, 9.
126 Id, 10.
127 Crook states: "Think of finance systems as gatherers and processors of information. In market economies, the main carriers of information are prices. In financial markets, it seemed, prices could not be left to do their job. Never fear: there was another way to gather information. Safe within their segments, firms developed specialist expertise. Above all, granted a more or less fixed set of clients, they developed relationships with their borrowers and lenders.
That seemed to make sense. The rationale for financial intermediaries is, after all, precisely that banks and other intermediaries know more about the creditworthiness of would-be borrowers than do savers. If 'relationship finance' worked as it was supposed to, the cost in economic efficiency of controlled and segmented markets would not be prohibitive. In return for that cost, the resulting system would be stable." Ibid.
128 Crook states: "The contract between governments and suppliers of financial services had another clause: the government provided protection from foreign competition. This was as indispensable as the other three. Financial prices and flows of credit could hardly be controlled if borrowers and/or lenders had easy access to other suppliers. Domestic financial firms would find themselves losing business to less-regulated foreigners. Domestic financiers expected secure profits in return for putting up with controls; if these profits disappeared the deal would be off.
After 1945 no special effort was needed to give protection to domestic financial firms. Capital controls were in place almost everywhere. The support they gave to the segmented

construct. Macroeconomic change, the new technology and other globalising factors placed pressure on the ability of governments to defend their exchange rates and shield domestic economies from external influences.

A striking example of the pre-transformation financial market is provided by New Zealand in the 1970s where the market was segmented by government regulation and controlled by setting interest rates. For example, the Interest on Deposit Regulations, 1972 applied in the period 1972-76. The Deposit Regulations prescribed maximum rates of interest that could be paid by trading companies and investment societies. They created a four year regulatory arbitrage for Securitibank who avoided the regulations by use of bills of exchange, enabling the payment of interest rates in excess of those permitted under the Regulations. Once the Regulations were revoked, the conditions for the regulatory arbitrage disappeared and the preconditions for the Securitibank collapse were in place.[129] The Securitibank collapse was an evolutionary crisis for securities regulation in New Zealand and led directly to the Securities Act 1978.[130]

4. Innovation, Regulation and Deregulation

After the collapse of Bretton Woods domestic finance structures based on segments, control, relationships and protection broke down. Market segments were overrun by new entrants, domestic controls were repealed or greatly reduced, relationship banking gave ground to "securitization" and other types of price-based finance and capital controls in the major economies were removed.[131] Reviewing these items, one might say that the expansion of global finance was facilitated by the easing of international capital flows and that the most powerful force for financial change was deregulation. A more complex explanation begins by considering the links between innovation in the financial markets, regulation and deregulation. In a price sensitive market, financial firms will seek ways around regulations which prevent the opportunity for profit - in short, they will innovate (the Regulation Q paradigm).[132] Deregulation, therefore, may simply be a recognition that the rules are not working. Crook states:

One reliable rule in economics is that systems of regulation that distort prices are continually breaking down, whether governments like it or not. Distorted prices create

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and regulated structure of domestic financial systems was not their main purpose. Perhaps it was not even understood: governments had a simpler aim in view. As Maynard Keynes said in 1944, in a speech about the international monetary arrangements that were to be established after the war:

'We intend to retain control of our domestic rate of interest, so that we can keep it as low as suits our own purposes, without interference from the ebb and flow of international capital movements or flights of hot money ... Not merely as a feature of the transition, but as a permanent arrangement, the plan accords to every member government the explicit right to control capital movements.'

And that is what they did. The result was not only to give governments the firmer macroeconomic control that Keynes thought desirable, but also, as a byproduct, to make feasible the deal struck all over the world between governments and suppliers of financial services." Ibid.

129 See, C Patterson (Chairman), *Report of the Working Paper on Negotiable Instruments* (1977), 36.

130 On this point, see G Walker, "Chaos and Evolution in New Zealand Securities Regulation" (1997) 9 (1) Otago Law Review (forthcoming). For an overview of securities regulation in New Zealand, see G Walker, "New Zealand" in G Walker, ed, *International Securities Regulation: Pacific Rim* (1966).

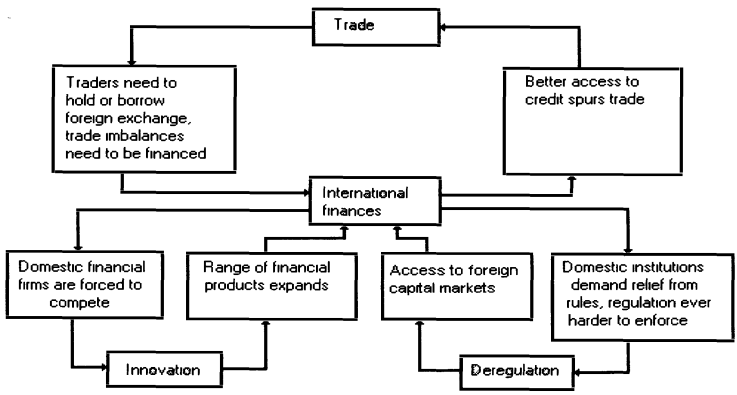
131 Crook, op cit, 10.

132 A good analysis is D Thornton and C Stone, "Financial Innovation: Causes and Consequences" in K Dowd and M Lewis, eds, *Current Issues in Financial and Monetary Economics* (1992), 81.

shortages and opportunities for profit. To exploit these opportunities, people and firms find ways around the rules. As a result deregulation is often no more than an acknowledgment that the rules are no longer working. In such cases deregulation is as much an effect as a cause.[133]

From this proposition, Crook develops a flow-chart showing a set of connections between international finance, trade, innovation and deregulation - see Figure 3.

Figure 3



Source: C Crook, "Fear of Finance" The Economist, September 19, 1992, 10.

The link between trade and finance implies a multiplier process - as trade expands, finance flows directly associated with trade expand also (this is the way in which macroeconomic change leads to globalization). The link between finance and innovation is particularly interesting. Here financial firms, driven partly by profit opportunities created by regulation, innovate in ways that expand offshore finance (eg, the creation of the Euromarkets). Innovation, therefore, expands international finance. This introduces a second multiplier: "as the volume of cross-border banking grows, domestic banks feel the heat of fiercer competition. This drives them to innovate again."[134] Now consider the regulatory response:

> What do regulators make of this? Their first instinct, most likely, is to resist the process by closing loopholes. (American regulators tried to kill the Eurodollar market in its infancy, but failed.) In international finance, regulators are at a great disadvantage because money is so slippery.
> Moreover, a third multiplier is working against them. Financial institutions in countries with heavy regulation see that they are at a competitive disadvantage. So they lobby for deregulation. At the same time, with every expansion of international finance due to trade and innovation, new ways to evade regulation are revealed. In both ways, an expansion of global finance promotes deregulation. And self-evidently, to complete the circle, deregulation promotes the expansion of global finance.[135]

133 C Crook, op cit, 10. We can read "systems of regulation" here as connoting intervention in markets (eg, fixed exchange rates).
134 Id, 12.
135 Ibid.

A striking example of the process described by Crook and the Regulation Q paradigm appeared in a set of overheads by McKinsey & Company Inc entitled, "Regulation and the Right to Manage".[136] The presentation begins by listing costs associated with regulation such as foregone earnings on restricted activities, disclosure and compliance costs and taxation costs. A subsequent overhead describes how markets respond to regulatory costs under the following headings: fight, fly or lose. A "fight back" response utilises the following "weapons": lobbying, courting public opinion, legal challenges and political contributions. The "fly" response to costly regulation is to relocate the transaction or asset away from regulatory control. The transaction or asset thereby "mutates" or "migrates".[137] Examples of migration are Eurobonds and SEAQ trading of European securities. An example of mutation is Regulation Q and money market accounts. The examples are supported by bar charts showing, for example, the massive rise in Eurobonds in the 1980s. A further overhead notes the increased tendency to "fly" on the basis that assets are mobile, markets are wholesale; derivatives span markets and networks have lower costs. The presentation then considers the options of regulators - they can compete or cooperate. Competition operates on a jurisdictional basis, on the level of disclosure required or by deregulating. The deregulation of Luxembourg is cited as an example noting a growth in the number of resident investment funds (up from 75 to 600), and assets (up from 2.3 billion sterling to 39.3 billion), in the period 1981-89 subsequent to deregulation. Cooperation is exemplified by multilateral agreements on capital adequacy requirements which inhibit the flight response. The McKinsey prediction is that cooperation will be at the lowest common denominator but that the resultant regulation will be the most difficult to escape. Predictions regarding EEC (now EU) regulation of banking and securities are to a similar effect. First, mobility of financial firms and capital implies light-handed regulation. Second, nationalism will dominate multilateralism. Third, competition will lead regulation down (the "race to the bottom").[138] Fourth, the "fight" response works well for mobile markets but not for retail markets.

The McKinsey analysis accords with the taxonomy of Crook's flow-chart. The system outlined there is dynamic and will be drawn towards more liberal policies:

> Note that the system will be drawn towards more liberal policies even if governments are initially against them. To resist that liberal tendency, regulators would have to become ever more active and intrusive. If they fail, international finance grows - driving, as well as driven by, trade, innovation and deregulation.
> As it does so, contracts [the pre-transformation financial market] like the one established between governments and domestic financiers in the 1950s and 1960s break down. Exposed to off-shore finance, controls fail; without controls, the boundaries between market segments cannot be defended; and without segmented markets, relationship-finance gives way to price-based finance. In short, market forces break in and run riot.
> However, [the flow-chart] merely shows the basic mechanism acting to undermine the old financial contract. If there were nothing more to be said, those anti-market arrangements might have lasted much longer. (Communist central planning defied

136 This presentation was given at the 7th Annual General Meeting and Conference of the International Swap Dealers Association in Paris on March 12, 1992.

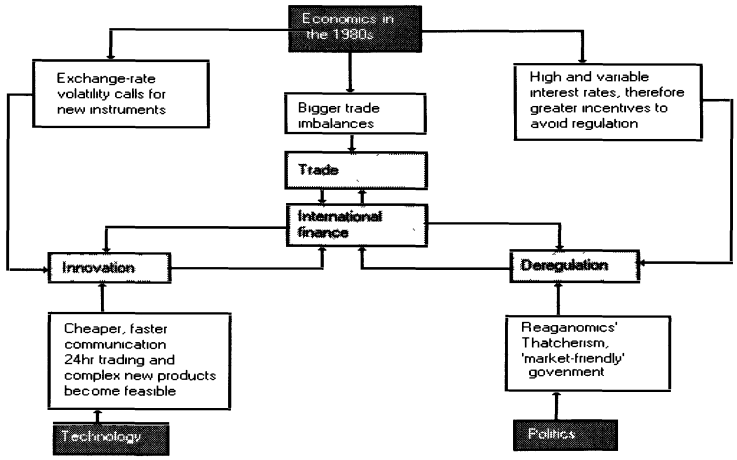
137 Compare the analogous explanation in evolutionary theory in M Roe, "Chaos and Evolution in Law and Economics" (1996) 109 Harvard Law Review 641, 663.

138 See also C Bradley, "Competitive Deregulation of Financial Services Activity in Europe after 1992" (1991) 11 Oxford Journal of Legal Studies 545, 555.

market forces for 70 years.) There is indeed more to be said. [The flow-chart] fails to do justice to the special forces that have been at work for the past ten years. It needs to be supplemented.[139]

The supplement referred to by Crook appears in Figure 4 below which illustrates the macroeconomic context of the post-transformation market for financial services.

Figure 4



Source: C Crook, "Fear of Finance" The Economist, September 19, 1992, 12.

5. The Macroeconomic Context of the Post-Transformation Market for Financial Services

As Meerschwam's analysis of international capital imbalances in the 1980s indicates, the macroeconomic conditions of the 1980s stimulated the expansion of cross-border finance. In the US, the combination of loose fiscal and tight monetary policy, "fuelled domestic demand, raised American interest rates and made the dollar appreciate. These changes helped the trend towards international finance in [various] ways."[140] First, America's current account balance went sharply into deficit. The economies of Japan and West Germany moved further to current-account surplus. The resultant current-account imbalances required an expansion of net cross-border flows of capital: "In effect, Japan, West Germany and other countries with current account surpluses lent America the capital it needed to pay for its excess of imports over exports."[141] Second, the strength and weakness of the US dollar was significant. The US dollar rose in the early 1980s and fell off after 1985. This meant that exchange-rate volatility was a concern to the financial markets which in turn encouraged innovation in financial products designed to hedge against exchange-rate risk. In this way, the 1980s encouraged financial innovation. The same point applied, *a fortiori*, in 1995 with the dramatic decline in the value of the US dollar. Third, rising interest rates and financial volatility increased the rewards to be gained by evading domestic regulation. The reward here turns on the differential between the cost of

139 C Crook, op cit, 12.
140 Ibid.
141 Ibid.

capital in regulated domestic markets and the cost in foreign markets: "The higher interest rates are, and the more interest rates and currencies move around, the greater the opportunities for profitable regulatory arbitrage are likely to be. And the more controls are evaded, the weaker the case for maintaining them becomes."[142] Fourth, the new technology was critical. Crook argues that the single most powerful factor promoting cross-border flows of capital in the 1980s was technology, specifically, cheap computer-power and communications technology. These facilitated around the clock financial trading, the development of new products, hastened the decline of relationship-banking and transformed banks from mere intermediaries to facilitators. Finally, political change helped the trend towards international finance. America and Britain led a shift to less interventionist economic policies. This shift in economic thinking has meant that financial deregulation has proliferated in the industrialized world.

V. CONCLUSIONS

The two major factors driving the transformation of the market for financial services were identified as *innovation* and *deregulation* - see Figure 3. The importance of these factors hinged upon their utility in a time of macroeconomic upheaval (exchange and interest rate volatility and the existence of *large international capital imbalances*). In Figure 4, two further factors are added, *technology* and *politics*. Technology made *globalization* a reality. These are the key forces driving the trend towards international financial integration and the profound transformation of the international market for financial services.

One of these factors, capital imbalances, is reversible at the national level. For example, New Zealand has embarked on a program of economic reform designed in part to reduce external debt,[143] however, that will not halt the trend towards financial integration (nor is it intended to do so). In fact, the reverse is true since it was deregulation that provided the means for New Zealand to reduce external debt. Elsewhere, there is little indication of similar reversals. The remaining factors seem irreversible. Hence, they are matters which financial firms, stock exchanges and securities regulators in every country must consider.[144] Of course, there are other matters to consider (derivatives, emerging capital markets and the question of capital shortage are among them), but each of these can be grouped under one or more of the identified factors. In fact, they are all subsumed under one the one term that encapsulates the movement to international financial integration - *globalization.*[145]

142 Ibid.

143 See the New Zealand government *Budget Policy Statement 1995.* There is a full review in The National Business Review, June 2, 1995.

144 Some of these matters are discussed in S Swallow, G Walker and M Fox, "Securities Markets in New Zealand" (1997) 12 (6) Journal of International Banking Law (forthcoming).

145 The impact of globalization on New Zealand is discussed in G Walker and M Fox, op cit. On 9 April 1997, the Australian Treasurer released the *Final Report of The Financial System Inquiry (Final Wallis Report)* on the Internet. The Overview of the *Final Wallis Report* noted that Australia has actively and irreversibly embraced globalization. As to the future, the Report distinguished two possible trajectories. The first is that change will remain gradual and incremental. The second is that the financial system is undergoing a paradigm shift, a more revolutionary transformation which represents a sharp discontinuity from the trend experience of the past (http://www.treasury.gov.au/fsi/final-report) (9 April 1997). The logic of this article supports the second view.