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THE FINANCIAL MARKETS IN THE UNITED KINGDOM

by

Marshall E. Blume

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RODNEY L. WHITE CENTER
FOR FINANCIAL RESEARCH

University of Pennsylvania

The Wharton School

Philadelphia, PA 19104

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Note: All tables will be updated with the latest revised figures before publication.

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The vigor of an economy has frequently been linked to the level of new investment. Compared to most other developed countries, the level of new investment in the UK has been relatively low and the performance of the economy on various dimensions has also been relatively poor. One possible reason for such a low level of investment is that the financial markets are not working properly, and thereby, the amount of capital available for new investment is curtailed. The purpose of this chapter is to examine the financial markets in the UK with particular emphasis on the provision of investment capital.

The chapter begins with a comparison of the investment levels among different developed countries and then moves on to an overall description of the roles played by different participants in the market in the provision and use of investment funds. Following this more general material will be a detailed analysis of the participants in the financial markets with comparisons to the U.S. where appropriate. Particular attention will be paid to the venture capital markets and to the growing institutionalization of the equity markets. The chapter will conclude with a brief summary of the major conclusions.

I. THE UK ECONOMY IN PERSPECTIVE

A popular impression of the UK economy is that it is weak and not performing adequately as compared to the economies of many other developed countries. By some standards, particularly those dealing with levels of activity, this perception has considerable support. Yet, by some other standards, it is performing at least as well as some other economies, such as the United States and Italy.

Comparisons of economic activity among different countries are always imprecise due to the necessity of converting the various national statistics to a common unit of account. Without going into great detail, there are two standard ways to convert these national statistics to a common unit. The first is to convert the statistics to one common currency using foreign exchange rates, and the other is to convert them to one common currency using purchasing power parity rates. In theory, the use of purchasing power parity rates should lead to a more accurate comparison of living standards among different countries; but in practice, purchasing power parity rates are available at only infrequent intervals and may be subject to considerable measurement error. Nonetheless, for 1970 and 1973, Kravis, Heston, and Summers have made very careful estimates of purchasing parity rates,[1] and these will be used here to confirm the conclusions based upon foreign exchange rates.

Per Capita GDP

In 1960, the per capita GDP (gross domestic product) of the UK exceeded that of every other country now in the Common Market. The UK also surpassed Japan, but was behind the US (Table I-1). By 1965, France and Germany surpassed the UK, while all the other countries which were behind

in 1960 had improved their position relative to the UK. By 1970, the per capita GDP of the UK trailed every other Common Market country save Italy. In that same year, Japan was behind the UK, and the US still surpassed every country in the Common Market, but by narrower margins.

These relative rankings in 1970 are the same using either the foreign exchange rates or purchasing power parity rates to adjust to a common unit of account, but the differences are slightly more pronounced with the foreign exchange rates. On the basis of exchange-rate adjusted figures, the per capita GDP of the US was over twice that of the UK, but on the basis of the purchasing-power-rate adjusted figures, the per capital GDP of the US was only about half again as much as that of the UK.

By 1976, the UK was still next to last among the Common Market countries.[2] Sometime in the early seventies, Japan surpassed the UK and has maintained that position ever since. While the UK has maintained its relative position among Common Market countries over the seventies, the gap between its position and those with greater per capita GDP has widened. For instance, Belgium's per capita GDP was 21.3 percent greater than the UK in 1970, but 72.3 percent greater in 1976.

In contrast, there has been little change in the relative gap between the per capita GDP of the UK and that of Italy or the United States over the seventies. Italy's per capita GDP as a percentage of that of the UK was 77.1 percent in 1976 - virtually unchanged from the 78.3 percent in 1970. With respect to the US, the figures converted with foreign exchange rates point to a slight narrowing of the gap, while the limited figures converted with purchasing power rates suggest a slight widening. Thus, whatever change has occurred in the gap between the UK and the US over the seventies has probably been small.

Table I-1

Per Capita Gross Domestic Product Among Different Countries
in Terms of English Pounds
Various Years

Year	Country (UK taken as 100.0)							
	UK	Belgium	France	Germany	Netherlands	Italy	US	Japan
A. Using Foreign Exchange Rates								
1960	100.0	90.2	98.2	95.6	71.4	51.2	203.4	33.4
1965	100.0	97.6	111.4	106.8	83.4	61.2	191.5	48.8
1970	100.0	121.3	126.7	139.3	110.4	78.3	216.9	86.1
1971	100.0	119.4	123.4	141.4	112.4	75.5	204.0	86.3
1972	100.0	129.5	132.9	148.4	121.2	76.9	197.0	98.6
1973	100.0	148.1	151.7	175.2	141.5	81.5	194.9	119.1
1974	100.0	160.0	146.7	178.8	152.2	81.5	192.4	120.3
1975	100.0	155.4	154.3	164.4	147.1	76.2	172.8	107.0
1976	100.0	172.3	165.9	183.5	157.2	77.1	199.2	124.7
B. Using Purchasing Power Parity Rates								
1970	100.0	113.4	115.3	123.1	108.2	77.5	157.5	93.2
1973	100.0	124.3	125.6	127.7	112.9	77.6	165.0	105.6

Sources: 1) International Financial Statistics (IMF Publication).

2) International Comparisons of Real Product and Purchasing Power (Published for World Bank).

Percentage of GDP to Capital Formation

In 1960, the UK devoted 16 percent of its GDP to gross fixed capital formation, somewhat smaller than the US and Belgium and considerably smaller than Japan and the remaining Common Market countries (Table I-2). By 1970, the UK had increased this percentage to 19 percent, exceeding the US by two percentage points. In comparison, all the other Common Market countries as well as Japan put a greater percentage of their GDP in capital formation. At the low end, Italy invested 21 percent in this way; and at the other end, Germany invested 26 percent of its GDP and Japan invested 35 percent.

In 1976, the UK was still spending 19 percent of its GDP this way, while the US had dropped its percentage to 16 percent. The remaining Common Market countries and Japan had either just maintained or decreased this percentage. At the extreme, the Netherland's share of GDP put into capital formation had dropped 6 percentage points to 21 percent, and both Japan and Germany had dropped their percentage by 5 percentage points. Thus, by this measure, the gap between the UK and these other countries has narrowed over the seventies with the US now falling behind England.

Per Capita Capital Formation

Despite the greater per capita GDP of the UK in 1960 relative to its Common Market partners, the UK ranked next to last in the Common Market in terms of per capita gross fixed capital formation (Table I-3). The UK surpassed only Italy among Common Market countries, was substantially ahead of Japan, but trailed the US by a substantial margin. Sometime in the late sixties, Japan surpassed the UK.

Table I-2

Percentage Composition of Demand
as Measured by GDP for Various Countries
1960, 1970, and 1976

	Item	UK	Belgium	France	Germany	Holland	Italy	US	Japan
1960	Private Consumption consumer expenditure	66	69	61	57	57	65	65	57
	Public comsumption government expenditure	17	13	13	13	13	12	17	9
	Gross Fixed Capital Formation	16	19	20	24	24	22	18	30
	Change in Stocks	2	0	4	3	3	2	1	4
	Net Exports	-1	-1	2	3	3	-1	-1	0
	GDP	100	100	100	100	100	100	100	100
1970	Private Consumption Consumer expenditure	62	60	60	54	57	65	63	51
	Public Consumption Government Expenditure	18	14	14	16	16	13	19	8
	Gross Fixed Capital Formation	19	22	23	26	26	21	17	35
	Change in Stocks	1	2	3	2	3	2	0	4
	Net Exports	0	2	0	2	-2	-1	1	2
	GDP	100	100	100	100	100	100	100	100
1976	Private Consumption Consumer Expenditure	60	62	62	56	57	65	65	57
	Public Consumption Government Expenditure	22	17	15	20	18	14	19	11
	Gross Fixed Capital Formation	19	22	23	21	20	20	16	30
	Change in Stocks	0	0	1	1	1	3	1	2
	Net Exports	-1	-1	-1	2	3	-2	-1	1
	GDP	100	100	100	100	100	100	100	100

Table I-3

Per Capita Gross Fixed Capital Formation Among Different Countries
in Terms of English Pounds
Various Years

Year	Country (UK taken as 100.0)							
	UK	Belgium	France	Germany	Netherlands	Italy	US	Japan
A. Using Foreign Exchange Rates								
1960	100.0	105.0	121.3	141.3	103.8	70.0	220.0	61.3
1965	100.0	117.5	147.5	152.5	114.2	63.3	197.5	81.7
1970	100.0	146.8	159.1	191.8	152.6	89.5	202.9	162.0
1971	100.0	141.3	157.7	202.6	156.6	83.1	197.4	160.3
1972	100.0	147.6	171.2	209.6	155.8	82.7	197.6	185.1
1973	100.0	158.9	183.8	219.4	166.0	86.6	184.6	222.1
1974	100.0	173.9	176.3	189.8	160.4	89.4	167.3	198.7
1975	100.0	173.2	180.8	172.1	155.3	79.4	142.0	165.3
1976	100.0	194.0	199.8	198.6	169.5	81.4	169.2	192.6
B. Using Purchasing Power Parity Rates								
1970	100.0	135.3	153.2	197.9	138.6	90.7	137.0	155.8
1973	100.0	160.2	195.4	230.9	179.8	91.5	177.6	200.2

Sources: 1) International Financial Statistics (IMF Publication).

2) International Comparisons of Real Product and Purchasing Power (Published by the World Bank).

Throughout the seventies, Belgium and France increased their lead over the UK, while the UK maintained a roughly 1 to 2 relationship to Germany as Germany substantially decreased the proportion of its GDP devoted to capital formation. It might be noted that the US position relative to the UK deteriorated consistently over the seventies until by 1976 its per capital gross fixed capital formation was only 69.2 percent greater than the UK.

The deterioriation of the US position is clearly evident in Table I-3. On the basis of the foreign-exchange-rate adjusted figures, the US in 1976 trailed Belgium, France, Germany, the Netherlands, and Japan. It only ranked ahead of the UK and Italy. To put in perspective the magnitude of the deterioration of the US position, it might be noted that, if the real growth rates of per capita gross fixed capital formation over the last decade ending in 1976 were to continue and exchange rates were to remain unchanged, the level of per capita gross fixed capital formation in the UK would pass that of the US in 35.4 years. Over this past decade, in terms of their own currencies adjusted for inflation, the growth rate in the UK was 2.14 percent per year and in the US, 0.63 percent.

Quality of Investment

There has been some concern expressed in the UK that not only are the levels of new investment low in comparison to other countries but also that the quality and productivity of this investment are low.[3] A crude measure of quality which has been used before is the ratio of the percentage growth in some measure of output to the percentage of GDP devoted to capital formation. If all countries devoted the same percentage

of GDP to capital formation and faced the same marginal efficiency of capital curves in terms of the percentage of GDP devoted to capital formation (as distinct from the absolute amount of capital), this ratio would be the same for all countries. If, however, countries devote different percentages of GDP to capital formation but still face the same marginal efficiency curves, this ratio would be expected to decline as the percentage of GDP devoted to capital formation increased. In this case, this ratio would be difficult to interpret unless one knew how fast it should decline as the percentage of GDP devoted to capital formation increased.

Yet in one case, it is possible to interpret differences in this ratio between two countries. Assuming that the first country devotes the same percentage or less of its GDP to capital formation as does a second country and at the same time has a lower value for this ratio, one could conclude one or both of the following: that the marginal efficiency of capital curve in the first country was lower than that of the second country or that the existing capital stock was not being utilized to its fullest potential for one reason or another.

Over the 1970-1976 period, the real value of the UK's GDP increased 15.5 percent and the average percentage of its GDP devoted to gross fixed capital formation was 19.0 percent, implying a value for this ratio of .82 (Table I-4). The values of this ratio for Belgium, France, Italy, and the Netherlands were all equal to or greater than that for the UK; and at the same time, these countries devoted a greater percentage of their GDP to capital formation. Thus, based upon this crude measure, it would appear that the marginal efficiency of capital curve in the UK is below that of each of these four countries or that existing capital is being employed less efficiently.

Table I-4

The Relationship of Growth in Output to Investment
1970-1976

	Percentage Change in GDP from 1970-1976 in local currencies in real terms (1)	Average Percentage of GDP devoted to Capital Formation 1970-1976 (2)	Ratio of (1) to (2)
UK	15.5	19.0	.82
US	12.3	17.5	.70
Japan	14.0	33.7	.42
Belgium	21.6	21.7	1.00
France	21.7	24.0	.90
Germany	15.8	24.0	.66
Italy	17.2	20.8	.83
Holland	18.8	23.0	.82

Source: Columns 1 and 2 derived from International Financial Statistics, May 1978 (IMF Publication).

Although the ratios for both Japan and Germany are smaller than that of the UK, they both devoted more of their GDP to capital formation than the UK, so that no conclusion is possible. It is interesting to note that France's marginal efficiency of capital curve appears to be higher, for their use of existing capital more efficient, than Germany's. Finally, based upon this measure, the US appears to be the UK. [4]

Summary

The levels of both the UK's overall economic activity and capital formation are low in comparison to those of Japan, the US, and the other Common Market countries except Italy. Moreover, there is some weak evidence that the marginal efficiency of capital curve is lower in the UK, or their use of existing capital less efficient, in comparison to some other countries in the Common Market, but for reasons discussed in the text, this conclusion must be regarded as highly tentative.

On the more positive side, although the UK still lags the other countries in the Common Market as well as Japan in the proportion of its GDP devoted to capital formation, the gap has been narrowing over the seventies. Finally, if the trends over the last decade were to continue in both the US and the UK, the level of per capita gross capital formation in the two countries would be roughly equal in about 35 years. Thus, the UK is improving its position, but it still has a long way to go.

II. AN OVERVIEW OF THE CAPITAL MARKETS

One of the most publicized changes in the capital markets of both the UK and the US in the recent past has been the growing institutionalization of the savings and investment process. In both countries, individuals have

been selling on balance their direct holdings of common stock, while institutions have been buying on balance. Nonetheless, individuals in both countries are still important stockholders in their own right and, in certain segments of the market, are undoubtedly the dominant investors.

This growing institutional presence, particularly in the equity markets, has led in both countries to the concern on the part of some commentators that the efficiency of the capital markets may have been impaired. On the one hand, some of these commentators point to the potential economic power of institutions to affect the allocation of real resources. In the UK for instance, some have asserted that institutions have used their economic power to thwart government financing plans to the detriment of society in general.[5] In the US for instance, some worry about the possibility that institutions might use their large holdings to control corporate management and therefore have called for laws to restrict institutional activities.[6] On the other hand, others of these commentators have argued that institutions with their large holdings may affect the very liquidity and operational efficiency of the capital markets and thereby cause an increase in the cost of funds to corporations as their liabilities become less desirable.

While it has not formally come to any conclusions, the extensive work done by the Wilson Committee on the English market has found no persuasive evidence that institutional growth has hindered the ability of corporations to raise external funds. The only exception may be small venture capital firms, but even here it is not clear that institutional growth is the principal reason that some of these firms may have trouble raising capital.

In the US, the issue of institutionalization of the markets and its potential problems has sometimes loomed so large as to dwarf other

important issues connected with the markets. As an example, it is frequently forgotten that institutions were a dominant force in the elimination of fixed commission rates on the New York Stock Exchange, an action which would be expected to increase the operational efficiency of the market. Moreover, a recent study of investors in the US concluded that at the current level of institutional activity in the US, further restrictions on institutional activities to curb their economic power would be unwarranted.[7] In addition, that study found no evidence that institutional growth had impaired the liquidity of the market place.

The primary purpose of this section is to put into perspective the changes in the capital markets which have occurred in the UK over the last decade. Where informative and comparable US data are available, the characteristics of the two markets will be compared. The section begins with a short review of the historical pattern of returns on different types of assets in both the UK and the US and then moves on to a look at the flows of funds among different sectors of the economy as well as the balance sheets of these sectors, where possible.

Realized Returns

Over the six years ending in 1976, the realized before-tax total returns on the major types of UK financial assets did not keep up with inflation (Table II-1). Including both dividends and capital gains and losses, equity stocks realized the greatest return of 10.3 percent per year but were closely matched by the 9.1 percent per year realized on short terms. However, both of these returns fell short of the 13.8 percent annual increase in the consumer price index.

In periods of unanticipated inflation, yields tend to rise and correspondingly the prices of long-term fixed-coupon instruments tend to

Table II-1

Annual Compound Rates of Return on Selected Financial Instruments and the Change in the Consumer Price Index in the UK and the US 1970-1976

Item	December 1970-December 1976	December 1970-December 1973	December 1973-December 1976
A. United Kingdom			
Consumer Price Index	13.8	8.6	19.3
Treasury Bill[a]	9.1	6.8	11.5
Long-Term Corporate Bonds[b]	4.9	5.1	4.6
Equity Stocks[c]-Total Return	10.3	6.3	14.6
Capital Gain	2.4	1.9	2.9
B. United States			
Consumer Price Index	6.6	5.2	8.0
Treasury Bill[a]	5.7	5.2	6.3
Long-term Corporate Bonds[b]	8.2	9.0	7.4
Equity Stocks[d]-Total Return	5.8	4.5	7.2
Capital Gain	2.6	1.9	3.3

Sources: Bank of England Quarterly Bulletin, OECD, Rodney L. White Center.

[a]Realized return from reinvesting every three months in Treasuries.

[b]Realized return from investing at the beginning of each year in a new twenty year bond issued at par and then selling it at the end of the year. In the UK, these returns were derived from the Financial Times-Actuaries Index (20-year debenture and loan stocks). In the US, these returns are derived from Moody's Composite Index.

[c]Derived from Financial Times-Actuaries Index of Industrial Ordinary Shares.

[d]Derived from the Standard & Poor's Composite Index

drop, driving the total realized return on bonds down. This appears to be exactly what happened over these six years in the UK, giving long-term bonds the worst return. The gap between realized returns on financial assets and inflation was greater in the last half of these six years than in the first half. Finally, it might be noted that in the overall period, capital gains accounted for only a fraction of the total return. Some types of financial institutions, like mutual funds or unit trusts, normally distribute dividend income; while other types, like pension funds, retain such dividends. The division of total return as between dividend and capital gain components may thus have implications for the relative growth of different types of institutions.

In comparison in the US, long-term corporate bonds over these years returned more than the inflation rate due primarily to their performance in the first half of the period.[8] Equity stocks turned in lower total returns than bonds and did not beat the inflation rate. The price of any long-term instrument is positively related to the expected level of the cash payouts, such as coupons or dividends, and negatively related to the rate at which these payouts are discounted. Thus, these differences in returns between bonds and stocks in the two countries might be taken as evidence that earnings prospects for UK equity were judged more favorably than the earnings prospects for US equity over the first part of the seventies.[9]

The Flow of Funds

The seventies saw some dramatic changes in the flows of financial assets among the different sectors in the UK. Perhaps the most obvious change occurred in the government sector defined as including local authorities. In terms of 1976 pounds,[10] the government in 1970 retired

3382 million more pounds of financial liabilities than it issued, but from 1972 on, it became a net issuer of financial claims (Table II-2). By 1976, the government issued 5956 million more pounds of financial liabilities than it retired. To put this figure in perspective, 5956 million pounds represented 5.4 percent of the gross national product of the UK in 1976 or 67.4 percent of the personal sector's net accumulation of financial assets. In 1977, the net acquisition of financial liabilities by the government fell off to 4007 million pounds, restated in terms of 1976 pounds. To facilitate comparisons across time, most figures in this section will be expressed in 1976 pounds.

In comparison, the US government including local units was a net issuer of financial liabilities throughout the seventies. In terms of 1976 dollars,[11] US governmental bodies in the peak year of 1975 issued a net amount of 83,904 million dollars of financial claims. This figure represented 5.2 percent of the gross national product of the US in that year and 78.0 percent of the personal sector's net acquisition of financial assets. Again to facilitate comparison across time, most US dollar figures will be restated in terms of 1976 dollars.

Measured in terms of their peak years, there does not appear to be too much difference between the UK and the US in the demands which their governments have placed upon the financial markets. However, the average annual net issuance of financial liabilities by governmental bodies in the US, as a percentage of GNP, was less than that of the UK. Thus since 1973, the government of the UK has placed greater demands on the financial markets, as a percentage of GNP, than the government of the US. If everything else were equal, this greater demand for financial borrowings in the UK by the government would be expected to cause the cost of funds to

Table II - 2

Net Changes in Financial Assets and Liabilities by Sector
for UK and US in 1976 Local Currencies
1970-1977

Date	Central Government & Local Authorities	Public Corporations	Industrial and Commercial Companies	Personal Sector	Rest of World	Balance and Residual
A. UK (1976 £'s in millions)						
1970	3382	-1790	-1108	2633	-1495	-1622
1971	1331	-2159	1396	1542	-2080	-29
1972	-1573	-1382	1457	2693	-192	-1003
1973	-3034	-1309	-1344	4597	1648	-558
1974	-4845	-2249	-6218	7420	5200	-692
1975	-5799	-3440	-697	8839	1882	-786
1976	-5956	-2409	-1028	8226	1107	60
1977	-4007	-906	-1518	7652	30	-1251
B. US (1976 $'s in millions)						
1970	-28083		-54543	76370	1112	5144
1971	-50881		-59196	79152	19102	11823
1972	-24420		-69530	70641	15787	7522
1973	- 9541		-94409	84408	3463	16079
1974	-12778		-82866	91614	-4321	8351
1975	-83904		-3627	107540	-17155	-2854
1976	-57900		-21200	78500	-12100	12700
1977	-46845		-36424	53886	20184	9199

Source: The UK figures prior to 1974 were taken from CSO: Financial Statistics and after from CSO: Blue Books. The US figures were taken from various publications of the Federal Reserve Board.

the private sector to be greater than in the US. But everything else is probably not equal.

Despite the heavy borrowing requirements of the UK government, the private industrial and commercial sector were able to raise in 1974 a net amount of 6218 million pounds in the capital markets. This sum is almost five times the amount raised in the prior year and represents over 5.7 percent of the GNP of that year. As is well known in the UK, a great portion of this amount was used to finance short-term assets such as work in process whose values had increased substantially due to inflation, and much of it represented bank borrowings rather than money raised from longer term sources. Nonetheless, regardless of the reasons for this large amount of new financing or of the particular form it took, the very fact that the capital markets could accommodate this large, non-recurring demand testifies to the resiliency and strength of the financial institutions in the UK. Put simply, the capital markets were able to supply new funds at a much greater level than in the past without raising the costs of funds to a prohibitive level.

Except for 1977, the net accumulation of financial liabilities by public corporations in the UK has been fairly steady over the seventies and has generally exceeded that of the private industrial and commercial sector. Since many of the so-called public corporations in the UK belong to what are generally regarded as the more cyclical industries, this fairly steady net accumulation of financial liabilities might suggest that the operating plans of these corporations are less sensitive to market pressures than those of private corporations. The sometimes-exercised practice of converting a sick private firm to a public corporation in order to preserve employment would be consistent with this possibility. If so,

these actions, or lack of actions, on the part of public firms could conceivably alter the costs of funds to the private sector from what they would have been in a competitive world as the borrowing requirements of public firms forced up the costs of funds in slack periods and decreased the cost in boom periods. Although this type of behavior initially might lead to some destabilizing effects in terms of the costs of funds to the private sector, the overall effect of the actions of public firms on the economy would hinge also on their impact on aggregate demand and output.

Over the entire seventies, the personal sector were steady net accumulators of financial assets in both the UK and the US. However, in terms of 1976 currencies, the trends in the two countries differed markedly. In the UK, the personal sector accumulated 7652 million pounds of financial assets in 1977, down only slightly from the peak of 8839 million in 1975. In the US, the personal sector accumulated 53,886 million dollars of financial assets in 1977, roughly half the peak amount of 107,540 million dollars in 1975. Although trends in the amount of savings put into financial assets do not necessarily parallel trends in overall savings, figures presented below do show that the pattern of financial savings on the part of the personal sector is consistent with their overall saving patterns.

The Ownership of Company Securities

Just as in the US, UK corporations not owned by the public sector finance their activities from a broad range of sources. The most important are internal funds, short-term debt, long-term debt,[12] and equity. This section will examine the distribution of ownership of long-term debt and equity among different sectors of the economy.

In comparing figures for long-term debt between the US and the UK, one should keep in mind two major institutional differences between the two countries. The first is that virtually all long-term debt in the UK is callable only in the final years before the redemption date, typically a five-year interval; whereas in the US, most long-term debt with the exception of that of the central government is generally callable on pre-specified terms after a pre-specified number of years, such as five or ten years. Thus, in the US, a corporation can redeem or call its debt at a predetermined price many years before maturity and, if interest rates were to fall, refinance its debt at a lower interest rate, so that in the US, long-term debt is a more flexible financing instrument to corporations than in the UK.

The second difference is that government debt is subject to different tax provisions from that of private debt. Government issues, if held for over one year, are not subject to capital gains tax, while private issues are subject to such tax. In a symmetric fashion, capital losses on government issues held over one year cannot be used to offset capital gains from other sources, while capital losses on private issues can be so used. The tax treatment of interest income is the same for both government and private debt. Thus, government debt selling at a discount enjoys a tax

advantage over otherwise similar private debt. Indeed, the government has on occasion utilized this tax advantage by issuing long-term debt at a discount with an appropriate below-market coupon.

Balance Sheets: According to data prepared by the UK Department of Industry from a survey of stockholder registers, individuals at the end of 1975 held directly 37.5 percent of the market value of all listed UK registered ordinary shares (Table II-3). The four major institutional investors, namely insurance companies, pension funds, investment trusts, and unit trusts, held 42.9 percent of this type of stock. If property companies, unlisted investment trust companies, and other financial institutions were included, this figure would jump to 46.8 percent.

These aggregate figures hide the fact that individuals are the major investors in smaller companies. Thus, as of December 31, 1975, individuals owned 56.8 percent of the market value of smaller listed companies, defined as those with equity market values of less than 4 million pounds. The four major institutional investors together owned only 19.3 percent of these types of companies.

This pattern of ownership among listed companies with institutions more heavily concentrated in the larger companies and individuals more heavily concentrated in the smaller companies is very similar to that in the US. Moreover, in the US, it is known that individuals are the dominant holders of unlisted issues which typically are much smaller companies than those which are listed. Excluding intercorporate holdings, it is estimated that individuals in the US hold roughly 94 percent of the market value of all unlisted shares.[13] This pattern of ownership with individuals more heavily concentrated in smaller stocks and institutions in the larger stocks is consistent with the potential difficulties which an institutional investor might face in investing a large sum in a large number of small issues.

Table II-3

Percentage Distribution of Listed Shareholdings by Market Value of Shares Outstanding and Type of Benenficial Holder
December 31, 1975

Beneficial Holder	Market Value of Issue[a] (£ million) Over 130	Over 40 to 130	Over 4 to 40	4 and under	Miscellaneous[b]	Total
Persons	36.8	34.9	36.0	56.8	47.4	37.5
Charities and other non-profit making bodies serving persons	2.7	2.2	1.7	1.8	1.3	2.3
Stockbrokers and jobbers	0.3	0.3	0.4	1.9	0.4	0.4
Banks	0.6	1.4	0.3	0.5	0.1	0.7
Insurance companies	15.2	17.0	19.3	5.5	12.1	15.9
Pension funds	17.9	20.1	14.2	6.4	12.8	16.8
Investment trust companies	5.8	6.2	7.5	2.4	4.1	6.1
Unit Trusts	3.4	4.0	5.6	5.0	3.9	4.1
Other financial companies	1.9	2.5	4.1	6.7	5.7	2.9
Industrial and commercial companies	2.3	4.5	6.8	8.0	1.9	4.1
Public sector	7.2	0.2	0.1	0.2	0.1	3.6
Overseas sector	5.7	6.8	4.0	4.8	10.2	5.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total (£ million)	21,555	10,023	9,856	2,595	532	44,560

[a] The strata relate to the market values of the equity on July 1, 1975, the date of the sampling frame used for the survey.

[b] The miscellaneous share issues comprise ordinary share issues, of various market values, with voting and/or other rights that differ from those of the main ordinary share issues of their companies.

Source: Unpublished data provided by the Department of Industry.

Unlike the US, there is very limited information about the value and ownership of unlisted issues. However, since as in the US, individuals in the UK are more heavily concentrated in smaller listed issues than in the larger listed issues and since UK institutions would face the same problems of investing in small issues as US institutions, it might reasonably be hypothesized that individuals in the UK are even more heavily concentrated in the generally smaller unlisted issues than in the smaller listed issues. If one is willing to make some very rough assumptions, it is possible to estimate the proportion of all stocks, whether listed or not, owned by individuals in the UK. Estimates of personal wealth prepared by the UK Central Statistical Office indicate that individuals on December 31, 1975, held 17.0 billion pounds of listed UK ordinary shares and 7.0 billion pounds of unlisted UK ordinary shares.[14] Assuming a similar ownership pattern of unlisted shares in the UK as in the US, these 7.0 billion pounds would represent roughly 94 percent of all unlisted shares or more conservatively say 90 percent. On the basis of this smaller figure, the total market value of all shares would have to be 52.3 billion pounds of which individuals would own roughly 45 percent.

While this figure of 45 percent is based upon a tenuous extrapolation, the pattern of holdings of listed stocks would strongly suggest that the inclusion of unlisted shares would increase the proportion of stock owned by individuals in the UK.[15] This analysis also paints a much more complex picture of the institutionalization process than the aggregate figures reveal. The obvious implications for the provision of venture capital will be explored below.

As in the US, the proportion of stock owned by individuals in the UK has dropped continuously over the sixties and seventies. Excluding unlisted holdings, individuals in the UK owned 54.0 percent of all ordinary stock in 1963 (Table II-4). This percentage decreased to 47.4 percent in

Table II-4

Percentage Distribution of the Market Value of Shareholdings by Beneficial Holder Various Dates

Category of Holder	1963	1969	1975
Persons	54.0	47.4	37.5
Charities and other non-profit making bodies serving persons	2.1	2.1	2.3
Stockbrokers and jobbers	1.4	1.4	0.4
Banks	1.3	1.7	0.7
Insurance companies	10.0	12.2	15.9
Pension funds	6.4	9.0	16.8
Unit trusts	1.3	2.9	4.1
Investment trusts and other financial companies[a]	10.0	8.7	10.0
Industrial and commercial[b] companies	5.1	5.4	3.0
Public sector	1.5	2.6	3.6
Overseas sector	7.0	6.6	5.6
Total	100.0	100.0	100.0

[a]Includes property companies and unlisted investment trust companies.

[b]Excludes property companies and unlisted investment trust companies.

Source: M.J. Erritt and J.C.D. Alexander, "Ownership of Company Shares: A New Survey," Economic Trends, September, 1977.

1969 and, as already reported, to 37.5 percent in 1975. Institutions, including the four major ones, held 27.7 percent of all stock in 1963. This percentage increased to 32.8 percent in 1969 and, as already reported, to 46.8 percent in 1975. Because of the exclusion of unlisted stock, these percentages undoubtedly understate the individual share and overstate the institutional share, but even after allowing for these deficiencies, institutions have almost certainly increased their share. Finally, it might be noted that the share of stock owned by the overseas sector decreased from 7.0 percent in 1963 to 5.6 percent in 1975.

Net Transactions: Since individuals and institutions tend to weight their portfolios towards different sectors of the market, part of this shift in ownership could theoretically be due to differences in performance of the different sectors of the UK equity market. However, the special 15-year summary of the UK flow of funds shows that individuals were net sellers of ordinary equity every year from 1963 through 1976.[16] More specifically, over the period from 1967 through 1973, individuals' net sales in terms of 1976 pounds ranged from a low of 1.4 billion pounds in 1969 to a high of 2.5 billion pounds in 1971 (Table II-5). In 1974, their net sales dropped to 1.1 billion pounds from 2.4 billion pounds the prior year. A major portion of this drop, if not all, might be explained by the fall of stock market values in 1974 on the assumption that they sold the same proportion of their stockholdings as in the prior years.

In both 1975 and 1976, individuals sold less than one billion pounds of equity. In view of the increase in security values for both of these years, these levels of net sales represent a substantial reduction from the levels of prior years. In 1977, individuals then increased their net sales but not to levels of prior years, particularly when measured in real terms.

Net Transactions of UK Company Securities
in Secondary Market by Sector
(1976 £'s in millions)

Date	Type of Security	Public	Overseas Sector	Personal Sector	Non-Financial Companies	Financial Companies
1967	Ordinary Share	13	18	-2022	674	1547
	Fixed Interest	-	88	93	212	732
1968	Ordinary Share	137	320	-1778	742	1513
	Fixed Interest	-	135	-217	198	655
1969	Ordinary Share	27	544	-1420	421	949
	Fixed Interest	-	39	158	146	658
1970	Ordinary Share	13	359	-1465	271	1020
	Fixed Interest	-	97	-99	127	424
1971	Ordinary Share	155	484	-2497	250	2149
	Fixed Interest	-	254	-43	157	460
1972	Ordinary Share	26	268	-2303	928	2345
	Fixed Interest	-	323	-145	350	458
1973	Ordinary Share	25	706	-2433	877	1099
	Fixed Interest	-	307	-575	397	287
1974	Ordinary Share	46	837	-1127	112	316
	Fixed Interest	0	113	-177	123	19
1975	Ordinary Share	665	217	-921	-59	1789
	Fixed Interest	0	91	-38	98	76
1976	Ordinary Share	260	329	-801	232	1153
	Fixed Interest	-	97	-102	112	13

Source: Derived from United Kingdom Flow of Fund Accounts: 1963-1976, Bank of England, May 1978.

Institutional Investors In General

The nominal value of the assets administered by the four primary types of institutional investors has increased dramatically in the last ten or so years from 18.4 billion pounds in 1965 to 54.7 billion pounds in 1976 (Table II-6). However, when measured in 1976 pounds using the CPI deflator, the story is quite different. From 1965 through 1970, the real value of their assets increased from 49.5 billion pounds to 61.1 billion pounds, but then decreased to 57.3 billion pounds in 1975 and finally to 54.7 billion pounds in 1976. Thus, over the seventies, the total real value of these institutional assets did not keep up with inflation--despite the substantial new money flowing into these institutions. Put another way, in the seventies the real return on their investments was negative.

These institutional investors place a large amount of their assets in equities. This type of investment represented about 34 percent of their holdings in 1976, a slight increase from the 33 percent in 1965. Over this period of years, there has been little change in their propensity to hold equities. Likewise, they held roughly 18 percent of their portfolios in gilts or government securities in 1976, the same percentage as in 1965. Institutions increased their commitment to property investments from 6 percent in 1965 to 15 percent in 1976 -- perhaps, the best performing assets of the last decade. Their commitment to other types of company securities, such as preferred stock or long-term debt, decreased from 15 percent in 1965 to 6 percent in 1976. This decrease parallels the declining importance of long-term debt, particularly listed long-term loan stocks, in the mix of new capital raised by corporations.

Table II-6

Percentage Distribution of Assets by Market Values
for Selected Institutions

Date	Total Assets of Selected Institutions (Historical £'s)	Total Assets of Selected Institutions (1976 £'s)	Percentage Breakdown: Net Short-Term Assets	Gilts	Property	Ordinary Shares UK	Ordinary Shares Overseas	Other Company Securities	Other
A. Unit Trusts[a]									
1965	500	1346	2	1		84	9	4	0
1970	1315	2829	5	2		79	10	4	0
1975	2555	2979	10	1		71	15	3	0
1976	2622	2622	13	1		65	18	3	0
B. Investment Trusts									
1965	3119	8399	2	1		57	35	4	1
1970	4469	9614	4	1		57	32	5	1
1975	5705	6652	6	3		49	36	4	2
1976	5958	5958	5	3		44	41	4	3
C. Insurance Companies									
1965[b]	9521	25639	1	24	10	18	3	21	23
1970[b]	14810	31861	3	22	12	22	3	18	20
1975[b]	26689	31119	7	24	18	20	3	11	17
1976	28508	28508	7	21	20	24	5	7	16
D. Pension Funds									
1965	5253	14145	2	18	2	41	1	15	21
1970	7836	16858	3	12	10	48	2	14	11
1975	14166	16518	7	15	16	47	4	6	5
1976	17488	17488	6	20	16	43	5	5	5
E. Total									
1965	18393	49529	2	18	6	33	8	15	18
1970	28430	61161	3	15	9	37	8	14	14
1975	49115	57268	7	18	14	34	8	8	11
1976	54682	54682	7	18	15	34	9	6	11

[a] Excludes property unit trusts whose assets at December 31, 1976 had estimated book values of £452m.

[b] This is the distribution of assets by book value as the market value of the assets of the insurance companies was not available before 1976. Total Assets excludes the value of "agent balances".

Source: Prepared by J. Henry Schroder Wagg & Co. Limited from various issues of Financial Statistics and Business Monetor M5 as well as from unpublished statistics on ordinary shares of overseas companies held by pension plans.

Foreign Investments: Roughly 20 percent of institutional equity holdings in 1976 represented non-UK securities. Due to restrictions by the Bank of England, an investor's ability to invest outside the UK is severely limited. There are two basic ways to invest abroad. The first way is to buy so-called foreign investment currency from another UK investor. This currency represents pounds earmarked by the Bank of England for foreign investment and is obtained from the sale of a foreign security held by an UK investor. Since this currency is procured through selling currently held foreign assets, its supply is limited. Moreover, from April 1965 through January 1978, a seller had to surrender in most cases 25 percent of the proceeds of any sale at the official spot rate.[17] If the currency exchange rules are effective and restrict the behavior of UK investors, one would expect that such foreign investment currency would sell at a premium as indeed it does. For instance, on October 21, 1978, the premium was 36 percent, which provides strong evidence that the currency restrictions are effective and binding.

The second way to invest abroad is by what is called a "back-to-back" transaction. For the purposes of describing this transaction, consider a situation in which there is a non-UK investor who wishes to invest in the UK and a UK investor who wishes to invest outside the UK. Their desired investment plans can be accomodated if the UK investor provides a loan denominated in pounds to the foreign investor and the foreign investor provides a loan to the UK investor denominated in the foreign currency. This "back-to-back" transaction in effect provides both investors the money which they desire without the actual conversion of any currency. Under the regulations of the Bank of England, pounds lent in this way can only be used for "operating capital requirements." The quoted premium on

investment currency and the fact that trades do take place in this currency indicate that these "back-to-back" transactions are not sufficient to finance all foreign currency investment.

In general, it is not possible to predict the effect of this type of foreign exchange regulation upon the behavior of UK investors without a detailed knowledge of their utility functions. Even if an investor expects, though does not necessarily anticipate, that the premium on foreign investment currency will be unchanged in the future, the costs of conforming to the foreign exchange rules might potentially reduce the expected return on foreign investments from what they would have been. Due to the uncertainty about the actual future level of the premium as well as future regulations, the foreign exchange regulations would increase the risk of foreign investment. Despite the greater risk of investing abroad due to foreign exchange regulations and the possibly smaller expected returns, an investor would generally still wish to place some of his portfolio in foreign assets for reasons of diversification.

Indeed, the current premium on foreign investment currency and the fact that transactions take place are evidence that investors would want to hold a greater proportion of their risky portfolio in foreign assets if foreign exchange restrictions were removed. By so doing, they would be able to reduce the total risk of their risky portfolio. What would happen to the absolute amount invested in risky UK securities would depend upon how investors changed their savings rates and how they ultimately distributed their wealth over risky and riskfree investments. Investors could now realize their future consumption plans with either less risk or lower savings or some combination of both (a substitution effect) or increase their future consumption plans with the same level of risk and

savings (an income effect). Without a detailed knowledge of how investors evaluate current and future consumption possibilities, it is not possible to predict which of these two effects would be dominant. It is even theoretically possible, if the income effect were strong enough, that the elimination of foreign investment restrictions on UK residents would lead to an absolute increase in the amounts UK investors would want to place in risky UK securities.

Concern About Institutional Growth: As cited earlier, a frequent concern about the growth of institutional investors is the concomitant growth of their power and the potential that they may abuse this power. In evaluating this concern, it is useful to consider two separate issues. The first is related to their potential ability to affect in some adverse way the overall allocation of real resources. The second is related to potential conflicts of interest in which the interests of the institutional investor and the beneficiary diverge.

The trading activity and the propensity of institutions to hold specific assets obviously affects both the relative prices of these assets and their overall price level. The important question is whether these actions lead to a better allocation of resources or a poorer allocation. In a competitive world in which each investor is sufficiently small that he acts as if he has no effect upon the prices of individual assets, a competitive equilibrium would obtain, and within a capitalistic system, most economists would agree that such an equilibrium is the best obtainable. The size distribution of institutional investors would seem, at least on the surface, to approximate this atomistic condition for a competitive equilibrium.

S.J. Prais of the National Institute points out that the three largest insurance companies each had assets in excess of 1.5 billion pounds at book value in 1973 and accounted for a quarter of all insurance companies' assets.[18] Assuming that these three companies still accounted for about a quarter of all insurance companies' assets in 1975 and that the composition of their portfolios were similar to the typical life insurance portfolio, the fact that insurance companies held roughly 16 percent of all listed equity in 1975 would imply that these three companies held about 4 percent of all listed equity in 1975. Similar calculations can be performed for other groups of institutional investors and show that no single institution accounts for a very large percentage of the total holdings in the market. Compared to most other industries, these levels of concentration would seem to epitomize the competitive ideal.

Nonetheless, some critics have argued that the competitive model still does not hold because of a follow-the-leader mentality on the part of institutional investors. In this scenario, there are a limited number of leaders in the financial community who communicate their views to other institutional investors through market letters and the like, and these other investors blindly follow their advice. Support for this view is usually provided by anecdote in which an institution recommends against purchasing some prominent new issue and the issue fails.

If the institutional recommendation were based upon a correct judgement that the terms of the new issue were non-competitive, market efficiency would be enhanced. If the institution were frequently wrong in its judgement, its recommendations would have less and less influence. Thus by a process of elimination, those advisors which emerged as the leaders would tend to be those with the most frequently correct advice

(assuming that there is in fact such a follow-the-leader behavior). Parenthetically, it should be noted that the generally greater research capability of institutions may allow them to make more informed judgements than individuals about market conditions and individual issues.[19] Thus, it could be argued that increased participation of institutional investors might even enhance the efficiency of the market.

Those who express concern about the growth of institutions are not concerned about this role of institutions but rather the possibility that institutions might be able to exercise monopsony power against the issuers of financial claims, like the Bank of England. Overt collusion among the many institutional investors is far-fetched, but a follow-the-leader mentality could conceivably mimic such collusion. It is hard to evaluate this argument empirically since its proponents only present anecdotal evidence which almost always is just as consistent with an efficiently operating competitive capital market as not.

However, the economic incentives facing such a large group of competitors would make such a tacit arrangement very unstable. To profit as a monopsonist, a group of firms must be able to force a deviation of market rates from their competitive equilibrium through some common action, such as restricting the amount which they would finance of some new issue. In such a situation, the competitive pressure to produce superior returns would give great incentive to a small institutional investor to break the cartel, and the rewards through increased management fees would be very great to such a small institutional investor. Thus, until proponents of this cartel type argument provide convincing empirical evidence of its validity, as distinct from an occassional anecdotal story, fears that institutions would be able to act as a monoposonist appear to be

unwarranted. If the atomistic structure of institutional investors were to change dramatically, then there might be some justification for this fear, but not at the current time.

Perhaps the most telling evidence on the effect of institutions on the market is their investment performance. If institutions do affect prices, either through superior insight or market power, one would expect institutions to outperform the market. A careful review of the literature by Elroy Dimson finds no persuasive evidence that unit trusts, institutions for which the public data are available, have outperformed the market.[20] The more extensive studies in the US, with only a few exceptions, have reached a similar conclusion. Thus, if institutions in the UK have been attempting to manipulate asset prices, either overtly or through a follow-the-leader mentality, such actions do not appear to have had much effect.

Another possible concern about institutional investors is that they are more interested in making money than serving the public welfare. In a competitive society, this concern is really a concern that private benefits differ markedly from social benefits. If correct, this concern is ultimately an indictment of the competitive system. It is hard to see what this indictment has to do with institutional growth.

The second major area of concern about institutions is the potential conflict of interest between beneficiaries and those responsible for the investment decisions. Here, the competitive model may no longer hold. For example, an employee may not know, or may not devote the energies necessary to learn, what investment decisions his trustee are undertaking. A beneficiary of a standard life insurance policy seldom knows exactly what investments are backing up the potential claims; he only cares that the

claims be paid. The usual way to guard against the potential conflicts has been through some sort of regulation.

Although it is beyond the scope of this paper to analyze the adequacy of current regulations in the UK to cope with these conflicts, it might be noted that, while these potential conflicts of interest, such as self-dealings between a pension plan and the sponsoring corporation, may have serious equity effects,[21] their overall effect upon the entire allocation process is likely to be small. However, laws and regulations designed to thwart such conflicts, if not carefully conceived, may well affect the allocation of real resources.[22]

III. A MORE DETAILED LOOK AT THE CAPITAL MARKETS

The last section examined the overall trends in the capital markets. The purpose of this section is to take a more detailed look at specific participants in the capital markets to determine whether there are any institutitonal features of the UK capital markets which hinder market efficiency or lead to social inequities. The section begins with a detailed look at institutional investors and then turns to individual investors and private corporations. The section ends with a brief examination of the primary and secondary markets for long-term securities.

Institutional Investors In Particular

During the seventies, the real value of the combined assets managed by the four principal institutional investors dropped in value; but contrary to this trend, the real value of pension fund assets increased slightly from 16.9 billion pounds in 1970 to 17.5 billion pounds in 1976, all stated

in 1976 pounds. The remaining three institutional types experienced a drop in the value of their assets with investment trusts experiencing the greatest absolute as well as proportional drop. The purpose of this part of the paper will be to describe the characteristics of each type of institutional investor and compare them to similar institutions in the US.

Unit Trusts: Unit trusts are very similar to US mutual funds in that they continually issue and redeem their shares at net asset value. However, they are taxed in a totally different way from US mutual funds in that they must pay corporate tax. In the US, as long as virtually all the net income received by a mutual fund is passed through within a short periods of time to the beneficiaries, the mutual fund is exempt from tax liability, either on its own behalf or on the behalf of its stockholders. Under the imputation system in the UK, income paid out by a corporation to a stockholder is divided into "franked" and "unfranked" investment income. Franked investment income is income which has been paid out after corporate tax, such as corporate dividends, while unfranked investment income is income paid out before corporate tax such as interest. Any franked income which one corporation receives from another corporation is not taxed further, but unfranked income is taxed. Thus, a unit trust which takes the form of a corporation can pass dividends through with no additional tax liability, but must pay tax on interest income.

This tax has effectively precluded the establishment of general type bond funds. It is usually more advantageous taxwise for an individual to hold a bond directly. Thus, most of the assets of unit trusts are in company securities yielding franked income (Table II-6). If as in the US, most holders of unit trusts are investors of low to moderate means, this tax structure may well preclude many smaller investors from investing in

long-term debt instruments and thus achieving further diversification through this means. There seems to be no obvious reason to continue a taxation system which precludes a particular type of investment vehicle if the system can be changed with no loss of taxes as would appear to be the case in the UK. It might be noted that, when the Carter administration was considering the elimination of the double taxation of dividends, a specific part of the program prepared by the Treasury would have treated mutual funds as agents for individual investors and subject to no taxes.

Unlike the US mutual fund industry, the unit trust industry has had continual net inflows of new money every year, partly due to the prevalence of regular subscription schemes by which investors contribute a fixed amount at regular intervals. Another reason is that investments in unit trusts tied to life assurance policies offer substantial tax advantages which take on added importance in a country in which the statutory rates are high. This type of transaction will be described in more detail below. As a consequence of these inflows and the tax structure itself, unit trusts have been net purchaser of company securities over most of the past decade (Table III-1).

Investment Trusts: Investment trusts are much like closed-end investment companies in the US. They have a fixed capital structure, often with some leverage, and do not as a matter of course redeem shares at net asset value. Thus, an investor wishing to sell his shares will generally sell them to someone else at whatever price he can obtain. There is no guarantee that the sale price will be the same as the net asset value of the trust: it could be greater or less. Investment trusts are taxed in the same way as unit trusts, and thus confine most of their investment to company securities with franked income (Table II-6).

Table III-1

Net Purchases and Sales of Selected Institutional Investors
in Company Securities in Millionsof 1976 Pounds
1968-1977

Date	Unit Trusts		Investment Trusts		Insurance Co.	Superannuation Funds
	Uk	Overseas	Uk	Overseas	UK and Overseas	UK and Overseas
1968	477	18	245	30	1014	848
1969	301	63	-36	-148	609	883
1970	95	37	-69	37	760	1048
1971	161	24	225	52	937	1001
1972	140	125	221	596	1556	1263
1973	88	50	-402	206	722	785
1974	4	-68	-171	-458	56	285
1975	288	109	154	78	482	1388
1976	56	-14	44	-86	238	1120
1977	110	16	43	-72	482	1227

Source: Derived from various issues of Financial Statistics (Tables 8.11, 8.12, 8.13, 8.14).

Due to the relatively fixed nature of their capital structure, investment trusts have not benefited, as unit trusts have, from a steady inflow of new funds. In fact, since 1975, investment trusts have redeemed more of their shares than they issued. Thus, investment trusts represent currently a considerably smaller proportion of institutional assets than they represented in the past. Though their nominal returns have probably been positive, their real returns over the last decade have clearly been negative.

Insurance Companies: Although the real value of the assets of insurance companies has decreased since 1970, they are still the most important institutional investor with assets of 28.5 billion pounds in 1976 compared to 17.5 billion pounds for pension funds and 54.7 billion pounds for the four main types of institutional investors combined. Insurance companies in the UK offer the standard package of insurance services ranging from casualty insurance to ordinary life policies. In addition, the UK tax structure makes life insurance companies a very favorable place in which to save. A fairly detailed knowledge of this tax structure is useful in understanding the personal saving process.

To begin with, premia paid to life assurance companies generate a tax credit equal to one-half the "basic rate" time the premia, subject to certain but generous limitations. Currently, the basic rate is 33 percent. Thus, a premium of one pound costs an individual 83.5 pence in after-tax income.[23] To be eligible for this tax credit, the policy must be a so-called "Qualifying Policy," which, among other things, means that the maturity of the policy is 10 or more years.

What is probably more important than this tax credit to an individual investor is that by saving through life insurance policies, the effective

tax rate on investment income may be substantially reduced. Two provisions of the law make this possible: First, the proceeds of a life insurance plan are generally not subject to any individual income tax. Second, a life insurance company pays only 37.5 percent on unfranked investment income, rather than the normal corporate rate of 52 percent, and as any corporation pays no tax on franked income such as dividends. Under the imputation system, a life insurance company receives a net dividend but cannot itself utilize the tax credit attached to the dividend, so that the effective tax rate on dividends works out to be the basic rate.[24]

Life insurance companies have taken advantage of these tax laws to offer what are essentially contractual investment plans with only a nominal link to what is normally considered a life insurance policy so as to be in technical compliance with the law. For example, Prudential Assurance Company, the largest insurance company in the UK, offers through a subsidiary a unit-linked life insurance policy, "The Vanbrugh Maximum Investment Plan." Using this plan as an illustration, an individual of age 35 might purchase a policy with 10 years to maturity. Of each premium, only 0.5 percent would be used to purchase insurance with the remainder being used to purchase units in what are essentially, though perhaps not technically, unit trusts or mutual funds. The individual has a wide choice of funds to choose from, ranging from equity funds to fixed interest and cash funds.[25] Moreover, he can reallocate his investment among the funds over time as he sees fit. For this particular plan, the amount payable on death is the accumulated value of the units with a floor of 75 percent of the total premia payable during the life of the policy. In an inflationary period in which nominal interest rates are high, this floor would only be expected to come into play in the early years of the policy.

Thus, in reality, these unit-linked life insurance policies are essentially contractual savings plans set up in such a way as to receive favorable tax treatment. Perhaps, the most persuasive evidence that the individual investors regard these policies as contractual savings plans is that the unit prices of these funds are published daily in such places as the Financial Times, Daily Telegraph, and elsewhere. Moreover, unit trusts have taken advantage of these tax benefits by setting up their own captive life companies to sell their shares in a form nominally linked to life assurance plans. Examples are Hambros Life or Schroder Life.

These contractual savings plans are not cheap. There is a 5 percent spread between the bid and offer prices -- equivalent to a 5.3 percent charge on the amount purchased.[26] There are substantial charges for early discountance of the plan ranging up to the forfeiture of one year's premium.[27] Similar types of contractual savings plans, but involving mutual funds, were widely sold in the US during the fifties and early sixties with what amounted to big cancellation penalties. Due to substantial publicity about the disadvantages of these plans to investors and the recommendations of the SEC that these plans be curtailed, these plans became less popular in the mid-1960s and nowadays are insignificant.[28] Without a detailed study, it is not possible to know how widespread the losses from these prepayment penalities are in the UK. Judging from the US experience, the losses may be great and more prevalant among lower income families who can ill afford them.

In the UK, the picture is slightly more complicated than in the US in that these contractual savings plans have substantial tax implications which they did not in the US. One way to ameliorate this problem is to allow insurance companies to issue qualified policies with premia which can be varied over time as the investor sees fit.[29]

Pension Plans: Pension plans, or in the English terminology, superannuation funds, have seen the real value of their assets increase over the seventies, unlike the other types of institutional investors, due to a steady inflow of new money (Table II-6) and have been the largest net accumulators of company securities among the various types of institutional investors (Table III-1). Except for 1973 and 1974, their net accumulations of company securities each year in the seventies in terms of 1976 pounds were in excess of one billion pounds. The 1974 drop in their net accumulations to 285 million pounds is undoubtedly associated with the weak market of that year and the possible perception that other financial instruments offered more attractive returns. The net amount of new money these funds had available for investments in 1974 did not show a similar drop. (Cf. Table III-4).

While some of the details of the UK pension schemes differ from those in the US, the broad outlines are similar. Both public and private UK corporations which provide occupational pension plans to their employees generally utilize defined-benefit plans in which the amount of the pension is based upon years of services and some final average salary calculations.[30] These pension funds are quite similar to sinking funds which guarantee the repayment of a long-term debt issue in that they are set up to guarantee the payment of these pension liabilities.

The three main funding medias in the UK are insured plans[31], internally managed trusts, and externally managed trusts. According to figures reported by George B. Buck Consulting Actuaries for 1975, 50 percent of all plans were managed internally, and the incidence of this type of management increased with size. Only 18 percent of the plans were externally managed in sharp contrast to the US where even the largest

companies make extensive use of the external managers. As in the US, insured plans were used primarily by smaller firms, representing 31 percent of the plans.

If this preference on the part of the large firms for internal management persists into the future as pension funds continue to grow in size, it would seem that the concern in the US sometimes expressed in the popular press about a concentration of power in the hands of a few financial institutions, like New York banks, is less of a problem in the UK. Rather in the UK, a more pressing potential problem may be possible self-dealings between a corporate management and the pension plans for their employees. In the US, one seldom hears allegations of self-dealings involving large corporate pension plans and the sponsor corporations. Such is not the case in the UK.[32] The management structure of pension funds in the UK may be more conducive to conflicts of interest between corporate management and their employees than in the US, but without a careful study, it is not possible to assess scientifically how prevalent and serious are these potential conflicts of interest.

Individuals

According to the national accounts, the savings rate of individuals in the UK was 8.9 percent in 1970 and 8.5 percent in 1971. By 1975, the rate had almost doubled to 15.4 percent. With the possible exception of Japan, this jump in the level of individual savings rates in the UK was not matched in other industrial countries (Table III-2) and has puzzled many students of saving behavior. Various explanations have been proposed, but none of them have been satisfactorily tested.

Table III-2

Personal Sector Savings Ratios in Selected Countries

1970 - 1977
(Savings as a Percentage of Net Disposable Income)

	1970	1971	1972	1973	1974	1975	1976	1977[1]
France	17.1	17.0	16.7	17.8	17.2	17.4	15.7	15.3
Germany	16.6	15.2	15.2	14.1	14.6	15.8	14.3	13.8
Japan	20.0	20.7	21.7	24.9	26.7	24.9	24.4	24.5
UK	8.9	8.5	10.5	11.7	14.1	15.4	14.9	14.5
US	8.1	9.2	6.6	8.2	7.9	7.9	5.8	5.0

[1]1977 data partly estimated.

Source: Peter Falush, "The Changing Pattern of Savings," National Westminster Bank Quarterly Review, August 1978.

The UK Central Statistical Office has recently prepared balance sheets of the personal sector exclusive of non-profit bodies.[33] These balance sheets would correspond roughly to those of individuals or households. In conformity with the national income accounting conventions, these balance sheets include the assets of pension or superannuation funds.

From the point of view of explaining individual saving behavior, it is questionable as to whether superannuation funds or employer contributions to these funds should be included in the personal sector. In an occupational pension plan, an employee is promised certain defined benefits under certain conditions. Failure to meet these conditions or even the bankruptcy of the corporation itself can cause these benefits to evaporate overnight. Moreover, changes in the law can vastly change an employee's potential and actual benefits. As an example, the UK in 1978 began to switch to a mandated two-tier, index-linked structure in which each employee will receive a fixed benefit and an income-related benefit. Under this law, employers will probably have to increase their contributions to their funded plans. Such an increase would lead to an increase in the personal saving rate as it is calculated. However, the plan will only be phased in gradually over the next twenty years, and there is no guarantee that in the interim it will not be substantially changed.

In sum, individuals may not regard employers' contributions as direct substitutes for other types of savings.[34] However, the removal of superannuation funds from the personal sector, would have to be based upon some highly tenuous assumptions which would subject the resulting figures to a wide margin error. Consequently, while recognizing the limitations, the following analysis will include superannuation funds in the personal sector.[35]

Individual Balance Sheets: Reexpressed in 1976 pounds and including superannuation funds, the net worth of individuals more than doubled from 171 billion pounds in 1956 to 414 billion pounds in 1973 and then decreased steadily to 325 billion pounds in 1976 -- a decrease of 21.5 percent despite the big increase in the savings rate from 1974 on.

Through 1972, the value of financial assets in individual portfolios exceeded the value of physical assets (Table III-3). In 1973, the value of physical assets jumped dramatically, while the value of financial assets showed a modest drop. The net result was that the value of physical assets was 39 percent greater than the value of financial assets in 1973. The value of physical assets has surpassed that of financial assets ever since--63 percent greater in 1974, 40 percent greater in 1975, 50 percent greater in 1976.

In terms of consumer purchasing power, the real value of physical assets held by individuals increased slowly but steadily through the end of 1971, somewhat in step with the net capital formation of the individual sector (Table III-4). In 1972, the value of physical assets held by individuals increased 39.7 billion pounds in real terms, and in 1973, there was a further increase of 55.1 billion pounds, again expressed in real terms. Most of this increase represented a reevaluation of land and buildings during this period rather than new capital formation. Since 1973, there has been new net capital formation every year, but the real value of physical assets has dropped back to the level of 1972.

With everything stated in terms of 1976 pounds, the value of financial assets reached a peak of 223.3 billion pounds in 1972 and then dropped to 146.9 billion pounds in 1976. The value of liquid assets increased slowly from 62.2 billion pounds in 1966 to 78.0 billion pounds in 1973 and then

Table III-3

Distribution of Broad Categories of Individual Assets
in Billions of 1976 Pounds
1966-1976

te	Physical Assets			Financial Assets						Liabilities	Value of Net Worth in 1976 Pounds (billions)
	Land and Buildings	Other	Total	Liquid Assets	UK company and overseas issue	UK and local debt securities	Equity in life assurance and superannuation funds	Other	Total		
66	107.5	38.6	146.1	62.2	56.2	13.7	37.8	11.9	181.9	37.1	291.0
67	112.8	40.1	152.9	65.9	66.9	13.4	40.9	11.1	198.1	39.1	311.9
68	119.0	41.4	160.4	66.5	79.3	12.0	43.6	10.4	211.8	39.5	332.7
69	121.4	42.8	164.2	66.1	66.1	11.7	43.0	9.6	196.4	39.3	321.2
70	123.1	44.5	167.6	67.8	58.7	9.7	43.9	9.3	189.3	40.7	316.2
71	131.2	45.2	176.4	69.2	71.6	11.6	47.8	9.0	209.2	53.1	343.7
72	167.4	48.8	216.1	74.1	80.5	9.0	51.5	8.2	223.3	49.5	390.0
73	217.6	53.6	271.2	78.0	52.9	8.6	47.2	8.7	195.4	52.9	413.7
74	193.1	56.6	249.7	75.2	25.3	6.5	36.5	9.0	152.5	49.2	353.0
75	164.3	54.5	218.7	66.8	35.0	8.9	37.5	8.2	156.4	43.7	331.1
76	165.8	54.8	220.6	63.5	29.3	9.1	37.1	7.9	146.9	42.2	325.3

Source: Derived from "Personal Sector Balance Sheets," Economic Trends, January 1978.

Table III-4

Individual Savings and Breakdown
in Million of 1976 Pounds
1966-1976

Date	Total Saving	Capital Formation	Net Acquisition of Financial Assets	Breakdown of Net Acquisition of Financial Assets							
				Government Debt	National Savings	Currency and Deposits	Life Insurance and Super annuation	Unit Trusts	Company and Overseas Securities	Loans and Mortgages	Other and Residual
1966	6307	3358	2949	614	-91	2931	3187	272	-1205	-1622	-1137
1967	5994	3624	2370	-96	315	4762	3430	212	-1489	-2890	-1875
1968	5688	4160	1527	-113	181	3267	3618	622	-1694	-2758	-1595
1969	5878	4106	1772	695	-258	2897	3429	425	-1212	-1968	-2236
1970	6624	3991	2633	-632	245	5234	3698	191	-1906	-3023	-1175
1971	6453	4912	1542	501	1203	5952	4143	90	-2611	-5236	-2501
1972	8576	5883	2693	-200	1490	7551	5381	372	-2656	-9242	-4
1973	10087	5491	4597	1687	450	9763	5660	272	-3683	-7046	-2507
1974	12307	4757	7551	1876	65	7743	5107	36	-1766	-3415	-2096
1975	13385	4665	8719	918	737	6484	5465	132	-1616	-3844	444
1976	12597	4475	8122	2135	791	5249	5713	79	-1328	-5039	522

slid back to 63.5 billion pounds in 1976. From 1966 through 1972, the real value of individuals investments in UK and overseas company securities increased from 56.2 billion pounds to 80.5 billion pounds. Since they were, on balance, net sellers of these types of securities over this period (Table III-4), their real returns must have been very favorable. The same type of phenomenon has been observed in the US over roughly this same period.[36] By 1976, individual holdings of these types of securities in the UK had fallen to 29.3 billion pounds, a drop which is due not only to their net sales over this period, but also to the the overall decline in market prices over this period.

Even though individuals have been acquiring substantial financial assets through life insurance and superannuation funds every year over the last decade, the real value of their holdings through these two types of institutions has declined to 37.1 billion pounds in 1976 from its peak of 51.5 billion pounds in 1972. The liabilities of households, again in real terms, increased by about 10 billion pounds in 1971 from the 40 billion or so of previous years. They remained at this new level through 1974 and have now retreated to slightly over 40 billion pounds. This trend is consistent with the large amount of new mortgages issued during the early seventies and the concurrent increase in the value of physical assets.

Explanations of Saving Behavior: There is no generally accepted theory as to why the savings rate in the UK increased so dramatically in the mid-seventies. One theory[37] which has been proposed and widely circulated assumes that households use past experience to extrapolate into the future what they consider to be fair prices of commodities. When faced with an increase in the price of a specific commodity due to unanticipated inflation, their first impulse is to postpone consumption and go to another

store to obtain the fair price. Eventually, they revise their assessments of what are fair prices but in the process, their savings increase temporarily. This theory may be able to explain a temporary increase in savings, but it does not seem capable of explaining the sustained high savings rate through 1976, particularly in 1976 when the inflation rate fell off dramatically from its heights in 1975. In the spirit of this theory, one could even argue that households would dissave in 1975 to purchase and stockpile what might appear to be real bargains.[38] Moreover, this theory would seem unable to explain the recent past in the US when inflation rates increased, probably unexpectedly, but savings rates decreased.

Another explanation is that individuals require a given amount of liquid assets to support a given level of income. John Forsythe has published some empirical evidence in support of this explanation, which has also received wide circulation and prominence in the UK.[39] There are a couple of ways to provide theoretical underpinnings to this empirical study. In his article, Forsythe suggests that a certain level of liquid balances may be desired to support a given level of income -- essentially a transaction cost argument.

More generally, even if there were no transaction costs, economic theory as embodied in the "life-cycle" hypothesis of Ando and Modigliani would argue for some type of relationship between savings rates and the ratio of net worth to income. Put roughly, this theory holds that an individual will save in his early life when his income is high to provide for his later life when his income is low. A bequest motive can easily be incorporated into this theory. Consequently, at each point in his lifetime, he will have a desired wealth level based upon his current and prospective income.[40] In a steady state world,[41] there will be a

desired level of aggregate wealth for each level of aggregate income. When wealth is above the desired level, individuals will reduce their savings; and when below, they will increase their savings. On the assumption that the desired ratio of wealth to income does not vary with the level of income, there should be a negative relationship between actual wealth-to-income ratios and saving rates.[42]

To distinguish between the transaction argument of Forsythe and the life-cycle hypothesis, various ratios were calculated: two variations of the ratio of liquid assets to disposable income, the ratio of net worth to disposable income, and finally the ratio of financial wealth to disposable income which, if there were measurement errors in the valuation of physical assets, might measure more accurately the true ratio of net worth to disposable income. The two measures of liquid assets were gross liquid assets and gross liquid assets less bank advances, or net liquid assets. In his article, Forsythe used net liquid assets; however, one could take the position that the use of gross liquid assets is more in the spirit of a transaction cost argument.

Each of these four ratios appear to be negatively related to savings rates (Table III-5). A statistical analysis of these relationships, details of which are given in Appendix A, indicates that the ratio of financial wealth to disposable income and the ratio of net liquid assets to disposable income have about the same explanatory power and either one explains a substantial proportion of the variability in savings rates over time. If one makes allowance for the difficulty of correctly measuring physical assets, a component of net worth, it is quite possible that the ratio of net worth to disposable income would have at least as much explanatory power as either the financial wealth ratio or the net liquid

Table III-5

Individual Savings Rates and Various Ratios to Disposable Income

1966-1976

Year	Savings Rate	Net Worth to Disposable Income	Financial Wealth to Disposable Income	Gross Liquid Assets to Disposable Income	Gross Liquid Assets less Bank Advances to Disposable Income
1966	9.1	4.22	2.64	.90	.84
1967	8.5	4.44	2.82	.94	.88
1968	7.9	4.64	2.95	.93	.87
1969	8.1	4.44	2.71	.91	.87
1970	8.9	4.23	2.53	.99	.85
1971	8.5	4.52	2.75	.91	.85
1972	10.5	4.77	2.73	.91	.80
1973	11.7	4.81	2.27	.91	.79
1974	14.1	4.03	1.74	.86	.76
1975	15.3	3.79	1.79	.76	.69
1976	14.6	3.77	1.70	.74	.66

asset ratio. The explanatory power of the ratio of gross liquid assets to disposable income is clearly inferior to that of any of the other three ratios. Since gross liquid assets are probably more closely associated with those assets which are available for transaction purposes than net liquid assets, it might be argued that the statistical explanatory power of the ratio of net liquid assets to disposable income may be due more to a wealth motive than a transaction motive.

Thus, the high savings rates of the recent past could be rationalized by the attempt of individuals to maintain a desired ratio of net worth to income as their actual net worth decreased relative to their income. Another explanation, but a related one, is that individuals saw the decrease in their wealth through inflation as a tax by the government and rationally adjusted, at least to some extent, their spending patterns to compensate for this hidden tax.

The trend in the saving rates for the entire UK economy is much more similar to that of other nations than the individual savings rates and does give some support of this type of rational expectation hypothesis (Table III-6). Although the individual saving rate was increasing in recent years, the overall savings rate in the UK was constant, or slightly decreasing, over the same periods, [43] a phenomenon which would be consistent with the hypothesis that individuals adjusted their savings rates to offset the hidden tax associated with inflation.

Table III-6

National Savings Ratios[a] (In %)
1966-1976

Date	UK	US	Japan	France	Germany	Holland	Italy	Belgium
1966	19.7	21.0	35.0	27.3	27.9	26.5	20.1	23.1
1967	19.3	19.6	37.3	27.2	26.4	26.9	20.7	23.7
1968	19.7	19.1	38.9	26.9	28.2	27.8	21.6	22.8
1969	20.8	19.3	39.2	28.6	28.9	27.1	22.5	24.3
1970	21.0	18.1	40.4	26.5	29.9	26.7	22.7	26.9
1971	20.7	18.5	39.3	26.0	29.0	26.9	21.2	25.8
1972	18.9	18.9	38.9	26.4	28.5	27.5	20.3	25.6
1973	20.5	20.3	39.9	26.8	28.4	28.6	21.1	25.3
1974	17.9	18.9	37.2	25.4	26.9	27.9	20.4	25.9
1975	17.3	16.8	32.3	23.4	23.3	23.4	18.3	22.8
1976	18.9	17.4	32.3	23.3	24.4	24.4	20.2	22.1

[a] Calculated as $\left[\frac{\text{GNP} - (\text{Pbl} + \text{Pvt cons})}{\text{GNP}} \times 100\right]$

Source: Basic data from International Financial Statistics, May 1978 (IMF Publication).

Industrial and Commercial Companies

As in the US, undistributed income represents a major source of funds for industrial and commercial companies, ranging from 68.4 percent in 1966 to 33.1 percent in 1974 and then to 48.7 percent in 1976 (Table III-7). Overall, there appears to be a slight decrease in the importance of retained earnings in the late sixties and then very little obvious time trend over the seventies. These percentages differ from those which would be obtained from the official statistics which are published by the Department of Industry in that the official figures include stock appreciation, while those presented here do not contain such appreciation. The official figures do not show a similar drop in the importance of undistributed income in the late sixties. In an inflationary environment, stock appreciation should probably be netted out since it is a sort of "phantom" source of funds in that it must to a great extent be used to increase the value of stocks, given a particular technology. Thus, by excluding stock appreciation, inflation-induced effects on the accounting numbers used in the sources and uses of funds can be partially mitigated.[44]

Funds which have been provided from outside the UK have been growing in importance over the last decade roughly in parallel with the growth in funds which have been used outside the UK, reflecting the increasing international character of world business as well as the possible effects of exchange controls.

In terms of external funds, the importance of bank borrowings as a source of funds rose dramatically in 1972 to 31.8 percent of the total sources, rose further in 1973 to 34.6 percent, and then reached a peak in 1974 of 40.9 percent. In 1975 and 1976, the percentage of funds raised through bank borrowings declined to a more normal level. Paul Marsh[45]

Percentage Sources and Uses of Capital Funds of Industrial and Commercial Companies

	Percent of Total Sources/Uses										
Sources:	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Undistributed income:	68.4	65.1	56.4	50.8	44.4	52.9	45.9	41.8	33.1	50.0	48.7
Capital Transfers:	0.7	6.0	9.1	11.5	9.7	9.4	4.3	2.9	3.4	4.9	3.1
External Funds:											
-Bank borrowing	5.0	8.5	11.4	12.7	20.7	11.6	31.8	34.6	40.9	7.2	19.7
-UK capital issues	15.3	10.6	9.7	9.8	3.7	5.9	6.5	1.2	-0.1	11.2	6.1
-Loans and mortgages	2.8	0.6	2.1	4.0	5.4	3.7	1.7	6.1	0.5	5.2	4.5
Overseas:	7.8	9.1	11.4	11.2	16.0	16.5	9.8	13.4	22.2	21.5	17.9
Total Sources: (millions of 1976 Pounds)	9748	9888	12058	11937	11675	12431	17244	21852	15614	10609	12907
Uses:											
Fixed capital formation	64.4	60.4	52.2	57.9	61.9	54.9	40.4	36.6	54.8	76.8	58.4
Working capital:											
-Value of physical increase in stocks	7.1	5.3	7.1	6.8	8.0	-1.1	-1.3	7.5	11.0	-18.9	-1.9
-Bank deposits	0.3	9.8	9.2	-2.7	6.1	17.2	24.4	19.2	0.9	23.8	13.1
-Other liquid Assets	-2.5	1.5	-1.8	-1.2	-1.3	2.5	0.6	0.5	-0.5	3.1	1.2
Overseas:	11.3	11.4	12.9	14.7	12.9	5.6	7.9	16.0	17.7	17.4	20.9
Other and unidentified:	19.4	11.7	20.4	24.6	12.5	21.0	28.0	20.2	16.2	-2.2	8.2

Figures may not sum to 100, due to rounding.

Source: Derived from Written Evidence by the Accepting House Committee before the Committee to Review the Functions of Financial Institutions in Evidence on the Financing of Industry and Trade, Volume 5, (London: Her Majesty's Stationery Office, March 1978), p. 53.

has suggested that the increase in bank borrowings in 1972 and 1973 was due to an easing of credit regulations in 1971 and the opportunity for the corporate sector to engage in arbitrage operations by borrowing from the banks on overdraft privileges and reinvesting these moneys at higher interest rates through time deposits and certificate of deposits. According to Marsh, these arbitrage operations ceased around the end of 1973. The high percentage of bank deposits in the use of funds in 1972 and 1973 is consistent with such arbitrage operations.

Marsh attributes the high level of bank borrowings in 1974 to the high inflation rate in that year and the commensurate increase in the values of stocks, work in progress, and (although he does not mention it) accounts receivable, all of which are often financed by bank borrowings.[46] The depressed state of the equity market would also seem to be a factor. The large use of funds in 1975 for bank deposits and the reduction in the value of stocks may well represent an adjustment of the corporate sector to a more normal balance sheet structure following the liquidity crisis of 1974.

The importance of longer-term UK capital issues as a source of funds varies widely over time -- from 15.3 percent in 1966 to -0.1 percent in 1974. In 1974, there were virtually no net new capital issues by UK industrial and commercial companies, but in 1975 net new capital issues represented 11.2 percent of the funds raised by these companies -- the second largest percentage of the decade. Again, the resiliency of the capital markets in UK to adapt to widely varying demands over time is clearly evident.

The mix of securities which UK companies have issued to the public have changed markedly over the last decade. From the sixties through 1973, fixed interest long-term debt, sometimes convertible into ordinary shares,

provided an important source of new capital and ofttimes was more important than ordinary shares (Table III-8). In 1975 and 1976, issues of ordinary shares dominated fixed-interest obligations to such an extent that some observers of the market alleged that government borrowing, for which the Bank of England acts as an agent, had "crowded out" the private sector.

Before coming to the "crowding out" argument, let us examine in more detail the last few years. In 1974, industrial and commercial corporations issued about as much ordinary equity as their retirements of fixed interest obligations. Financial institutions, however, did issue on balance both ordinary shares and fixed-interest obligations in 1974 but at a relatively low level. Yet even these low aggregate figures obscure the magnitude of the slump. According to statistics compiled by the Midland Bank, one issue accounted for 40 percent of the total value of the net new issues. In all in 1974, there were 29 new company issues: 16 issues of ordinary shares and 13 issues of debt of which four were convertible.[47] This compares to 120 company issues in 1973 and 312 company issues in 1972.[48] In 1975, Midland Bank recorded 200 company issues -- of which 83.7 percent by value were ordinary shares.[50] This revival of the new issue market and the dominance of ordinary shares continued into 1976 when only 9 new debt issues were made.[51]

Crowding Out: The shunning of the long term debt markets by corporations in recent years has led to the concern on the part of some that the Bank of England has "crowded out" the private sector.[52] The argument pictures the government through the Bank of England as having a highly inelastic demand curve for long-term debt and firms' having relatively elastic demand curves, at least more elastic than the government's. On the assumption that the supply of savings is fixed in the

Table III-8

Net New Issues of UK Company Securities

1967 - 1976

(1976 £'s in millions)

Date	Type of Securities	Industrial and Commercial Companies	Financial Institutions
1967	Ordinary Share	164	66
	Fixed Interest	964	162
1968	Ordinary Share	730	205
	Fixed Interest	561	210
1969	Ordinary Share	418	103
	Fixed Interest	791	210
1970	Ordinary Share	95	103
	Fixed Interest	428	120
1971	Ordinary Share	311	230
	Fixed Interest	590	238
1972	Ordinary Share	612	651
	Fixed Interest	739	247
1973	Ordinary Share	180	94
	Fixed Interest	276	141
1974	Ordinary Share	64	120
	Fixed Interest	-65	143
1975	Ordinary Share	1258	431
	Fixed Interest	100	126
1976	Ordinary Share	790	383
	Fixed Interest	-45	75

Source: Derived from United Kingdom Flow of Funds Accounts: 1963-1976 (London: Bank of England, 1978), Table 5.9.

short run, a sufficient shift in the government demand curve will drive interest rates up to such an extent that the government becomes the only participant in the long-term debt market as firms drop out.

In their written evidence to the Wilson Committee, Pepper, Thomas, and Wood of W. Greenwell & Co. claim that just such a crowding out occurred in 1976, and as a result firms were forced to increase their short-term borrowings from banks and (though they did not explicitly state it) from other sources, such as rights issues. Assuming such a "crowding out" did occur, the natural question is what effect it would have upon the availability of funds to corporations to finance expansion. From the sources and uses of funds, it is clear that firms increased their bank borrowings or overdrafts. In the UK, corporations tend to use and banks tend to regard overdrafts as a semi-permanent form of financing. Thus, this "crowding out", if it did occur, forced firms to utilize a close substitute to long-term debt. Indeed, except for potential bankruptcy costs, modern financial theory would argue that from the point of view of the owners of the firm, the precise financing of a firm makes little difference as long as the owners can obtain their desired portfolio structure through purchases and sales of financial instruments -- in short, the ability to undo whatever the firm does.

To put this argument in a different light, assume that the government were to finance its deficit using exactly the same mix of financing instruments as firms use. Obviously, this is a hypothetical situation but could be done if the government issued an instrument linked to the stock market. The initial effect would be to drive up the cost of capital to firms. If individuals recognized that the deficit financing of the government was equivalent to a tax, they would just change their saving habits, and there is some evidence that they may have done this.

Thus, as long as short term debt is a close substitute for long-term debt, the "crowding out" argument is really more an argument about the impact of government deficit financing upon the overall cost of capital to firms. To the extent that investors anticipate that the deficit financing is just a tax and adjust their saving habits, the deficit financing should have no more effect, except for distributional effects, on the real variables in the economy than if the deficit were instead financed by taxes.

This hypothetical scenario is obviously an extreme position but so is the "crowding out" argument. Moreover, according to the Midland Bank Review, the leads and lags as between government financing and corporate bank borrowings during 1976 were not consistent with this "crowding out" scenario with much of the corporate borrowing preceeding the demands of the Bank of England.[53] Additionally, the Review argues that the downturn of corporate financing in the last quarter of 1976 could be attributed to general economic conditions.

If "crowding out" is not the explanation for the shunning of long-term debt, is there a plausible explanation? Flemming, Price and Boyer[54] have suggested that when nominal interest rates are high due to an inflationary environment, there may be a great deal of uncertainty about their future levels due in part to uncertainty about the future levels of inflation. In this situation, management may be very reluctant, and quite rationally reluctant from their own perspective, to commit a firm to a fixed interest payment for an extended period of time. If nominal interest rates were to fall, due perhaps to a substantial drop in inflationary expectations, the firm would be burdened with a large financial obligation which its competitors may not face and thus be at a competitive disadvantage. In the US, the callable provisions of long-term corporate bonds mitigate this fear.

Unlike the US, British firms have access to an overdraft system which provides what amounts to medium- to long-term funds at a floating interest rate with no repayment penalty. This system seems to work well enough that firms have had little incentive to try to develop alternative long-term instruments with a more flexible interest rate structure such as callable bonds or floating rate issues.

So far, only local authorities and the Agricultural Mortgage Corporation have issued floating rate issues and then only beginning in 1977. In nominal terms, 118.3 million pounds of the 396.0 million pounds of long-term loan stocks issued by local authorities in 1977 were floating sale issues.[55] In 1978, roughly a third of the new short-term bonds and long-term stocks issued by local authorities have had floating rates. If good secondary markets for these instruments develop, it would not be surprising to see some corporate floating rate issues in the future.

Leverage or Gearing Ratios: Partly as a result of their avoiding the long-term bond market UK corporations tend to have more equity in their liability structure than corporations in many other countries. These low leverage or gearing ratios have led some to question whether UK firms are using the optimal amount of debt in their capital structure so as to minimize their cost of capital[56] and thus maximize their investment levels. According to modern corporate finance, the debt-equity ratio of a firm should make no difference to the cost of capital at the firm level,[57] even in the presence of taxes. Taxes would be expected to affect the aggregate level of the debt-equity ratio for the economy as a whole, but individual firms in a competitive environment would be expected to act as if their cost of capital were independent of their particular capital structure.[58]

Assuming for the moment contrary to theory that firms could reduce their cost of capital by increasing their debt, the question arises as to whether financial institutions place effective constraints on the amount of debt, either short or long term, which a company can obtain. To examine this question, a cross-sectional analysis of 925 listed firms using data from 1977 was undertaken.[59] In a cross-sectional analysis, the macro environment is constant, enabling one to examine more easily the effect of structural differences among firms. The actual analysis related the ratio of plant and equipment expenditure to total assets to the proportion of total assets financed by equity as well as measures of profitability, payout, risk, industry, and firm size.

If firms are constrained in the amount of debt they wish to issue, one would expect that as the proportion of total assets financed by equity dropped, firms would find it more difficult to raise new debt and thus plant and equipment expenditure as a proportion of assets would tend to decline. This assumes that firms could not just turn to other sources of funds. The empirical analysis of these 925 listed firms gives no support to this hypothesis. Indeed, holding constant profitability, risk, industry, and firm size, the empirical results indicate that firms with more equity in their capital structure are investing less than their more levered colleagues--in contradiction to this hypothesis. It is beyond the scope of this study to explain this peculiar result, but it may be consistent with the attitudes expressed in the Survey of Investment Attitudes and Financing of Medium-Sized Companies undertaken for the Wilson Committee.

Where companies had explicit debt-equity criteria, this survey concluded that [60]

> they were generally in terms of a balance sheet gearing limitation. In nearly all these cases the gearing was self-imposed and, where relevant, was well within the limits externally imposed by debenture trust deeds or other convenants to lenders--although it was clear from discussion that the limit set often reflected or was related to the perceived expectation of the market or bankers.

Some family controlled companies, though not all, stated that they would not undertake additional borrowing to finance profitable projects because, after personal taxes, they would not receive much benefit and that there was the possibility of losing control. Thus, it is possible that the proportion of assets financed by equity is acting as a measure of a firm's taste for expansion in the UK. A similar analysis in the US found no relationship which is the theoretically expected result.[61]

The possibility that some firms may not expand as much as possible does not necessarily mean that the aggregate level of investment would be curtailed. If there were free entry, it would be expected that new firms would enter or some existing firms would expand to take on those projects which some firms choose not to undertake.

Also of interest, this analysis found no relationship between the plant and equipment expenditure ratio and the total size of the firm, suggesting that the smaller listed firms have tended to expand on a percentage basis as rapidly as the larger firms. In the US, the larger firms appeared to be expanding more rapidly than the smaller ones.[62]

In addition, there appears to be no relationship between this plant and equipment expenditure ratio and dividend payout. If true, this result suggests that the level of retained earnings relative to total earnings is not a critical variable in explaining differences in growth among firms. This conclusion should be regarded as highly tentative. In the US, no relationship was obtained in 1977 as in the UK, but negative and

significant relationships were obtained in similar types of cross-sectional analyses for the years 1968, 1969, 1970, 1973, and 1974. This study only had access to UK data for 1977 and thus could not ascertain whether such a negative relationship might also have been obtained in the UK in prior years.

Finally, this cross-sectional analysis provides an estimate of the elasticity of plant and equipment expenditures to the sum of net profits and interest payments. In 1977, the estimate of this elasticity in the UK was slightly less than 0.40. If taken at face value, a doubling of profits would be expected to generate an initial increase in plant and equipment expenditure of 40 percent, which in turn might generate further increases in plant and equipment expenditures in future periods. Estimates of similar, but slightly smaller, magnitude were obtained for the US.

Small Companies: The information available on the financing of smaller unlisted issues and the peculiar problems associated with venture capital are very sparse. In their testimony before the Wilson Committee, the Association of Independent Businesses point to several barriers to the development of small businesses. The most important in their minds are:[63] a) the lack of an active market for the stock of small companies, b) a perceived reluctance on the part of the banks to make as much money available as small firms would like, and c) a taxation system which favors the accumulation of assets through institutions rather than directly.

There is an over-the-counter market in the UK, but it is not nearly as well developed as the market is in the US. The Stock Exchange under Rule 163(2) now permits brokers to participate in trades of unlisted stocks. However, "permission to transact each bargain must be sought so that a continuous market is not allowed to develop."[64] It is difficult to assess the effect of this type of restrictive practice on the development of an

active over-the-counter market; it certainly would not aid the development of such a market, but whether it has hindered its development is an open question. The fact that M.J.H. Nightingale and Co. an investment banking firm, has set up a limited over-the-counter market outside the Exchange to provide over-the-counter brokerage services is evidence that the services provided through the Exchange are not sufficient to satisfy the needs of an over-the-counter market.

In his testimony before the Wilson Committee, Mr. C.J. Dauris of the Association of Independent Businesses[65] estimates that there are about 2400 companies regularly traded on the over-the-counter market in the US (a number probably close to the mark) and that a similar type of market in the UK could support about 400 or 500 firms. The development of this type of market would fill an important gap in the UK equity markets. Currently, a company to be listed on the Exchange must have a net worth of about 500,000 pounds,[66] which translates into a company with a fairly substantial level of sales and profits. With such an over-the-counter market, an entrepreneur could raise additional capital without so many worries about problems of control as would be the case if the funds came from a single source, such as an institution.

The tax bias against direct savings, which has been discussed extensively in the prior sections, certainly does not facilitate the development of small business. To avoid the high marginal tax rates, individuals have great incentives to save through contractual arrangements with institutions. Thus, an individual who later in life wished to start a small corporation or who wished to fund someone else's corporation may not be able to use his savings to do so without substantial penalities. Moreover, even if he did withdraw the money from an institution, he may

face higher tax rates on his future investment income than if he left the money with the institution.

There is very little evidence on the impact of this institutionalization of the savings process on the formation of new small firms. However, since individuals have traditionally been the suppliers of equity funds to small businesses, this discrimination against direct savings has probably not helped the formation of small firms and may have introduced a distortion in the saving process.

To provide capital for smaller businesses, various specialized institutional investors have emerged. Perhaps, the most important is Finance for Industry Limited (FFI), 15 percent of which is owned by the Bank of England and the balance by the clearing banks. On March 31, 1977, FFI through its subsidiary TCFC had investments of 211 million pounds spread over 2200 accounts, averaging slightly less than 100,000 pounds per account. Although the ICFC will consider commitments down to 5,000 pounds, the costs of applying for funds do not vary substantially with the amounts advanced. Thus, the Association of Independent Businesses suggests that the practical minimum is 30,000 pounds with most of the commitments being around 100,000 pounds.

In their testimony before the Wilson Committee, the Association of Independent Businesses expressed support for the US system in which the Small Business Administration guarantees loans as a way of making more loan money available to small companies through traditional sources. Their apparent preference for loan guarantees over funds provided through intermediaries like the FFI may well be due to the aversion of small businessmen to give up any control of their company. In obtaining funds through the FFI, a corporation must frequently give up some control.

Whether the need to give up some control in the UK system hinders the development of small firms is an open question.

The institutionalization of the venture capital process in the UK is substantial and has proceeded much further than in the US. In constrasting the US to the UK system, it should be noted that the average returns on investments in small, new firms in the US over the past thirty or forty years have been less than the average returns on larger seasoned issues, reflecting the often substantial losses associated with investments in small firms.[67] These lower average returns are consistent with the hypothesis that there may have been too much venture capital in the US over these years, so that it is not clear that the US system is better than the UK. The advantage of the developing UK system is that it provides professional advice at an early stage in the development of a new corporation and thus may lead to less failures than in the US. The disadvantage is that it may stifle the truly independent and innovative entrepreneur and curtail the undertaking of highly speculative projects which would not meet normal professional investing standards.

It is too early to assess the impact of this institutionalization on the venture capital market in the UK. Moreover, the available data are very sparse. In view of the importance of venture capital, it would seem appropriate for some government body to initiate the collection of better data so as to reveal potential problems before they become serious.

The Stock Market

In the UK, all orgainzed trading of securities is under the control of "The Stock Exchange."[68] In the US, there is, of course, not only the New York Stock Exchange, but also the American Stock Exchange and various

regional exchanges. In the UK, as pointed out above, the over-the-counter market is not well developed. However, The Stock Exchange does permit occasional trades in unlisted securities and M.J.H. Nightingale & Co. do provide a limited market for unlisted stocks.

The Stock Exchange in the UK might be characterized as a competitive multi-dealer market. There is a distinct division between the dealers, called stockjobbers, and stockbrokers, who act as agents on behalf of their customers. There are usually more than one dealer in each issue. When a stockbroker wishes to trade an issue on behalf of a client, he will ask the jobbers in that issue for bid and ask prices without disclosing whether he wishes to buy or sell. He will then select that jobber or jobbers with the best bid and ask prices from the point of view of his client. Unlike the US, the execution is not reported on a central tape.

On the New York Stock Exchange, there is a specialist system in which each issue is assigned to a single dealer who is charged with maintaining an orderly market. When asked by a member, the specialist is also responsible for executing so-called limit orders which are standing orders from the public to buy or sell at specific prices. In the UK, there is no formal mechanism to handle such limit orders. The compellation of these orders is known as the "book" and gives the specialist important information as to the future course of the prices of the issues in which he deals. Floor traders can and do trade with the public when their prices are better than that provided by the specialist. Thus, these traders do subject the specialist to some competitive pressure, somewhat reducing his monopolistic power.

Trading Costs: It is difficult to compare the operational efficiency of these two systems for trading stock in view of the differences in

institutional structure. Yet, the cost of trading equities is probably greater in the UK than in the US, particularly because of a transfer or stamp duty of 2 percent levied on each transaction and to a lesser extent commission costs. There is now no transfer tax on trades involving non-convertible debt issues. Commission rates are fixed as to minimum levels, and are almost certainly greater than the competitive rates in the US. On a £50,000 trade for instance, the commission would be 320 pounds. Under the old fixed rate schedule in the US, the commission on a comparable $100,000 trade of a stock priced $50 per share would be $797.36. Assuming that one pound equals two dollars, the current UK rate is about 20 percent less than the old US fixed rate. While some US institutions are obtaining a reduction of greater than 60 percent from the old fixed rate schedule, a 40 to 60 percent reduction is quite common nowadays in the US,[69] indicating that the minimum rates in the UK are greater the competitive levels in the US.

The possibly greater commission rates in the UK than in the US does not necessarily mean that the minimum rates are above their competitive level since the costs of the factors used in the trading of securities could differ between the two countries. However, the practice in the UK of occassionally directing one broker who executes an order to transfer a portion of his commissions to another to compensate the second broker for services unrelated to the execution[70] is suggestive that the minimum commissions are in excess of their competitive levels.

On top of this commission, an investor would have to pay a small VAT tax but of more importance a stamp tax of 2 percent or 1,000 pounds on a trade of 50,000 pounds. The only significant tax in the US is the New York State Tax, which on this hypothetical $100,000 trade would be a maximum of $125. For non-New York residents, this tax is cut in half and can even be avoided.

Table III-9

Average Percentage Bid-Ask Spreads
By Size of Bargain and Market Value
January 1978[a]

Market Value (Millions of Pounds)	Size of Bargain (Thousands of Pounds)					
	1	10	25	50	100	250
0-50	2.202 (22)	2.282 (22)	3.166 (21)	4.426 (15)	5.318 (9)	9.002 (7)
51-100	1.800 (48)	1.800 (48)	2.356 (47)	3.880 (42)	6.746 (24)	10.094 (10)
101-200	1.656 (50)	1.656 (51)	1.974 (50)	2.922 (47)	4.554 (24)	8.080 (19)
201-500	1.440 (39)	1.440 (39)	1.726 (39)	2.034 (36)	4.546 (25)	5.046 (22)
501-	1.208 (17)	1.208 (17)	1.208 (17)	1.418 (17)	1.704 (14)	3.448 (13)

[a]Numbers in parantheses indicate number of issues upon which average is based.

Source: Derived from the basic survey data of Schroder Wagg.

The other major cost in trading is related to the bid-ask spread of the dealer. In January 1978, J. Henry Schroder Wagg & Co. Limited asked one of its dealers to obtain bid and ask prices for various size trades in the equities in the portfolios under its management on the pretense that it was contemplating such trades, so that the quotes represent real quotes. Because of the jobber system, it obtained both a bid and an ask price which would presumably represent the best bid and ask prices (perhaps from different jobbers) obtainable through normal brokerage procedures. These bid-ask spreads expressed as a percentage of the average of the bid and the ask are summarized in Table III-9 by size of the potential trade and the market value of the equity outstanding of the company. For example, of the quotes for potential trades of 250 thousand pounds received on 13 issues with market values in excess of 500 million pounds, the average percentage bid-ask spreads averaged over these 13 issues were 1.7 percent.

As would be anticipated, the percentage spread tends to increase with the size of the trade and decrease with the market value of the issue itself. Because of the differences in institutional structure, comparable figures are not available for the US. However, it might be noted that an estimate of percentage bid-ask spreads averaged for New York Stock Exchange issues in 1974 was 1.6 percent.[71] This spread would only technically apply to a trade of 100 shares, perhaps a $4,000 trade, but may well apply to a substantially larger trade if the stock is actively traded. While any conclusion must be highly tentative, a cursory examination of the numbers in Table III-9 suggests that the percentage bid-ask spreads in the UK may be less than in the US, but any such conclusion would have to be very tenuous.

Trading Activity: Fragmentary evidence in the US suggests that the level of trading activity in equities is not terribly sensitive to the costs of trading.[72] Despite the apparently higher costs in the UK, the turnover figures in the UK are not that much different from those in the US. Unit trusts have an average annual turnover rate of around 40 percent, while insurance companies and pension funds probably have a turnover rate of about a third of this level.[73]

These turnover rates are not that much different from those in the US. As in the UK, mutual funds, which are comparable to unit trusts, typically have greater turnover rates than other institutional investors.[74] Thus, the relatively high trading costs in the UK, primarily due to the transfer tax, probably do not harm the efficiency of the market in terms of the signals it provides to firms as to their cost of capital. Quite apart from efficiency considerations, some have objected to this transfer or Stamp tax for equity reasons.

The Primary Market: In the UK, The Stock Exchange regulates the new issues market and has instituted regulations which make it institutionally very difficult to issue new equity except through rights offerengs. According to Paul Marsh, there were 150 rights issued in 1975 which raised a total of 1.2 billion pounds but only 11 non-rights issues which raised a total of 38 million pounds. In contrast in the US, most new equity is raised through non-rights issues. Over the years 1971-1972, 13.4 billion dollars were raised through non-rights issues, while only 1.0 billion dollars were raised through rights issues.

The costs of a rights issue as a percentage of the proceeds is very substantial for a small issue but declines rapidly with increases in the size of the issue. Paul Marsh estimates the cost of raising 50,000 pounds

at 13 percent, 100,000 pounds at 8 percent, and one million pounds at 2.9 percent. At 10 million pounds, the cost falls to roughly 2.4 percent and remains at approximately that level with further increases in the size of an issue.[75] The most recently available cost figures in the US were collected by the SEC in December 1974 and cover the 1971-72 period. There were 16 rights issues of over 20 million dollars during these years with an average percentage cost of 3.7 percent.[76] While the differences in time between the UK and US figures make a direct comparison of these numbers highly tenuous, it seems safe to conclude that the UK costs are not greater than those in the US.

Of perhaps more critical importance is the conclusion of the 1974 SEC Study that rights issues in the US are considerably cheaper than non-rights issues--averaging one to five percentage points less. This analysis suggests that the UK system of raising equity through rights issues may be less costly than the US system of using non-rights issues. Moreover, it appears that the UK market is able to absorb these rights offerings with no discernible adverse effect upon the share prices of the issuing companies[77] in conformity with the modern view that the relevant market for a new issue is the entire market of financial claims and not the more narrowly defined market for the specific issue.[78]

IV. CONCLUSIONS AND RECOMMENDATIONS

One must be impressed with the resiliency of the capital markets in the UK as they responded to the major economic shocks which the UK experienced over the seventies. They were able to channel large sums among the different sectors of the economy in non-traditional ways. In 1974, when equities were selling at low values, substantial sums were transferred through the banking system. With the recovery of equity prices in 1975 and

It seems safe to conclude that the financial institutions in the UK are working sufficiently well that any demonstrably profitable project can be readily financed. Thus, the financial institutions in the UK do not appear to be restricting the growth of the UK economy. It follows therefore that any radical change to the structure of financial institutions in the UK would have little stimulative effect on the economy. And one can easily conceive of situations in which a radical change could be detrimental.

While overall the financial institutions in the UK are operating efficiently, this study did reveal some areas where improvement may be possible or where there may ultimately develop a problem. Like the US, the investing process is becoming increasingly institutionalized. This institutionalization has proceeded further in the UK than in the US; nonetheless, it should be kept in mind that individuals in the UK are still important investors in their own right and they may be the dominant investors in some types of investments, such as small enterprises.

The tax structure in the UK makes it very attractive for individuals to save through institutions rather than directly. For example, by saving through a unit-linked life assurance plan, an investor can obtain an initial tax credit as well as a reduced tax on the subsequent investment income.[79] One might thus expect a large proportion of new savings by individuals to be channeled through institutions.

If, as would appear plausible, individuals were to invest in the future the bulk of their financial savings through institutions, insitutional investments would ultimately become very much more important than direct investments. This possible tying up of individual funds in institutions could well in the future reduce the supply of seed capital for

starting new small ventures. Traditionally, this seed capital has been provided by the entrepreneur himself or personal friends. It is doubtful that intermediaries could ever fulfill this function in which the enterprise is merely a dream in the mind's eye.

It is, of course, the high marginal tax rates which give individuals the incentive to save through institutions, and their reduction with a corresponding broadening of the tax base, as recommended in Pechman's essay, would help to reduce this incentive. If such an overall reform is not politically feasible, an alternative would be to have the tax laws changed so as to give the same tax advantages to income on direct savings as are currently given to income on indirect savings through life insurance companies. One way to accomplish this goal would be to provide an easy procedure for individuals to create their own personal tax-sheltered investment trusts. While receiving the same favorable tax treatment as currently enjoyed by life insurance companies, an individual would be able to control the investment policy of such a trust, enabling him to invest in his own company or in any other way he wishes.[80]

Finally, there are three items which probably do not lead to any global misallocation of resources but may cause inequities. First, the tax system effectively precludes fixed-income trust funds. This provision probably works to the detriment of the smaller investor who does not have sufficient funds to invest directly in the bond market and should be changed. Second, the cancellation penalties associated with unit-linked life insurance policies should be examined carefully. If the US experience with respect to contractual mutual fund plans is applicable to these very similar plans, the losses to particularly small investors may be substantial. Third, the costs of trading equities in the secondary market

seems high in comparison to those in the US due to a stamp tax and a fixed commission rate schedule which apprears to be in excess of the competitive levels. Abolishing the fixed rate schedule would probably lead to a reduction in commission rates and, extrapolating from the US experience, to no detrimental effects upon the functioning of the capital markets.

In sum, radical changes to the structure of financial institutions do not seem to be warranted at the current time. Nonetheless, there are some areas where fine tuning might be appropriate. Also, this essay found no evidence that institutions at their present levels of ownership have adversely affected the efficiency of the capital markets.

APPENDIX A

Savings Regression

To examine the relationship between savings rates and the four ratios to disposable income of net worth, financial wealth, gross liquid assets, and net liquid assets, a regression analysis was performed (Table A-1).

In the regressions of these savings rates on each of the four ratios, the maximum coefficient of determination of 0.91 occurs when either the ratio of financial wealth to disposable income or the ratio of net liquid assets to disposable income is used as the independent variable.[81] Even so, the standard errors of estimates for each of these two regressions, 0.84 percent in the case of financial wealth and 0.85 percent in the case of net liquid assets, indicate that there is still substantial variability in the savings rates which is not explained by these ratios.[82]

To check the specification of the regressions, they were run in first differences. In first differences, the ratio of financial wealth to disposable income appears to be slightly better as an explanatory variable than the ratio of net liquid assets to disposable income.

According to the standard error of estimates, the worst explanatory variable in the regressions using levels is the ratio of net worth to disposable income which is the theoretically correct variable under the life-cycle hypothesis. However, the Durbin-Watson statistic suggests that the specification of this regression is poor. In first differences, the specification improves and the standard error drops considerably -- almost to that using net liquid assets. Due to the difficulties in measuring the value of physical assets, there is probably more measurement error in the ratio of total net worth to disposable income than in the ratio of

financial wealth to disposable income. If one were able to eliminate measurement error and improve the specification, it is not inconceivable that the regression using total net worth to disposable income would produce the best fit. In the first difference form, the ratio of gross liquid assets to disposable income has virtually no explanatory power.

Table A-1

Summary of Regressions of Savings Rates on Various Ratios to Disposible Income[a]

$Y = a + bX + E$

Independent Variable	a	b	$\bar{R}^2$	S.E.	DW
A. Basic Data					
Net Worth to Disposible Income	33.20 (3.94	-5.20 (-2.68)	0.38	2.21	0.43
Financial Wealth to Disposible Income	24.61 (17.70	-5.76 (-10.21)	0.91	0.84	1.94
Gross Liquid Assets to Disposible Income	38.92 (6.59)	-31.85 (-4.80)	0.69	1.57	1.50
Net Liquid Assets to Disposible Income	39.68 (13.67)	-36.68 (-10.04)	0.91	0.85	1.43
B. First Differences					
Net Worth to Disposible Income	0.46 (1.46)	-1.99 (-1.98)	0.25	0.99	1.23
Financial Wealth to Disposible Income	0.29 (0.91	-2.80 (-2.34)	0.33	0.93	2.06
Gross Liquid Assets to Disposible Income	0.51 (1.28)	-2.54 (-0.34)	0.00	1.19	1.49
Net Liquid Assets to Disposible Income	0.15 (0.41)	-22.31 (-2.07)	0.27	0.97	1.38

[a]The numbers in parantheses are t-values.

APPENDIX B

Cross-Sectional Regressions of Plant and Equipment Expenditures

To examine the relationship of plant and equipment expenditures to specific characteristics of firms, a cross-section of UK firms was examined. This cross-section included the largest industrial firms by market capitalization in the DataStream data base as of the end of June 1978, and consisted of 954 firms. Twenty-nine of those firms were discarded because of missing data, and a further twenty-four were discarded due to negative profit figures, leaving a total of 901 firms. The technical reason for discarding firms with negative profit figures was the impossibility of taking logarithmic transformations, but one could possibly argue on economic grounds that the earnings of these firms may contain substantial negative transitory elements making their reported earnings poor estimates of their more permanent level. Moreover, in preliminary work, regressions were run without logarithmic transformations enabling the inclusion of 925 firms, the maximum number with complete data, and the conclusions were not much different.

The financial data on these 925 firms came from the latest available annual reports and thus would generally be 1977 data. The specific variables which were used in the regressions were:

the plant and equipment expenditure ratio defined as the ratio of plant and equipment expenditure from the sources and uses of funds to total assets,

gross return on assets defined as the ratio of the sum of pretax profits and interest payments to total assets,

net return on assets defined as the ratio of the sum of aftertax profits and interest payments to total assets,

the ratio of equity to total assets,

total assets,

the payout ratio, and

the equity beta coefficient as calculated by DataStream.

Lacking market values, the values of equity and total assets were measured by their book values. There were 27 industries. In an attempt to hold industry effects constant, 26 dummy variables, one for each of the first 26 industries, were included in the regressions; however, the coefficients are not reported here for reasons of space.

Appendix Table B-1 summarizes the basic regressions which were run in logarithmic form. The coefficients of determination adjusted for degrees of freedom are of a respectable level for this type of cross-sectional regression. The coefficient on the logarithm of beta appears to be of the wrong sign. One would expect that, holding contant profitability and risk as measured by industry, plant and equipment expenditures would increase with decreases in beta.

One possible explanation for this theoretically incorrect sign on beta is a statistical one. It is well known that for inactively traded stocks, beta coefficients as would be estimated by DataStream would be downward biased. If the less aggressive firms are the less actively traded, one could argue that the beta coefficient is acting as a measure of managerial attitude and thus rationalize the positive sign on this variable in the cross-sectional regressions. Regardless of the reason for the sign on the beta coefficient, it should be noted that the coefficients on profitability and leverage are roughly the same whether or not this variable is included.

For comparison purposes, similar cross-sectional regressions for the US were run for each of the last twenty years on all those companies included on the Compustat Industrial Annual File with the required data. Dummy variables were included for each two-digit Compustat industry less one. Table B-2 contains the regression results for one specification for each of the last ten years to give a flavor of the types of results obtained. Beta coefficients were not included in the US analysis since they were not readily available.

Appendix Table B-1

Cross-Sectional Regressions of the Logarithm of the Ratio of Plant and Equipment Expenditures to Total Assets on Firm Variables and Dummy Industry Variables for UK DataStream Companies 1977

Independent Variables in Logarithms[a]						$\bar{R}^2$
Gross Return on Assets	Net Return on Assets	Equity to Assets	Assets	Payout	Beta	
0.279 (4.52)		-0.458 (-3.78)	-0.024 (-1.31)	-0.027 (-.75)	0.132 (2.72)	0.17
	0.379 (5.72)	-0.505 (-4.18)	-0.023 (-1.27)	0.008 (.21)	0.115 (2.38)	0.18
.317 (5.83)		-.442 (-3.83)				0.16
	0.395 (6.96)	-0.487 (-4.22)				0.18

[a]Figures in parentheses are t-values.

Sources: Calculations performed at the Rodney L. White Center for Financial Research, the Wharton School.

Appendix Table B-2

Cross-Sectional Regressions of the Logarithm of the Ratio of Plant and Equipment Expenditures to Total Assets on Firm Variables and Dummy Industry Variables[a] For US Compustat Companies 1968-1977

Date	Independent Variables in Logarithms[b]				$\bar{R}^2$	Number of Observations
	Net Return on Assets	Equity to Assets	Assets	Payout		
1968	0.201 (3.70)	-0.041 (-0.67)	0.069 (5.21)	-0.095 (-2.90)	0.28	1316
1969	0.201 (3.78)	-0.115 (-2.06)	0.082 (6.62)	-0.132 (-5.28)	0.29	1339
1970	0.216 (4.31)	0.005 (0.08)	0.089 (6.90)	-0.082 (-2.91)	0.32	1309
1971	0.191 (3.84)	-0.028 (-0.47)	0.098 (7.53)	-0.043 (-1.65)	0.40	1300
1972	0.212 (4.03)	0.039 (0.66)	0.077 (6.04)	-0.047 (-1.77)	0.40	1364
1973	0.352 (6.71)	-0.025 (-0.52)	0.075 (6.30)	-0.046 (-2.04)	0.37	1454
1974	0.307 (6.09)	0.040 (0.75)	0.124 (10.60)	-0.056 (-2.46)	0.41	1475
1975	0.339 (6.88)	0.016 (0.32)	0.115 (9.82)	-0.024 (-1.03)	0.40	1500
1976	0.410 (7.79)	-0.056 (-0.89)	0.073 (5.91)	0.031 (1.17)	0.43	1624
1977	0.323 (6.20)	-0.048 (-0.83)	0.073 (5.90)	-0.027 (-0.99)	0.41	1531

[a]A dummy variable was included for each 2-digit Compustat Industry less one industry. For instance in 1968, there were 60 dummy variables in the regression to control for industry effects. These variables are not shown in the Table.

[b]Figures in parentheses are t-values.

Source: Calculations performed at the Rodney L. White Center for Financial Research, the Wharton School.

FOOTNOTES

[1] Irving B. Kravis, Alan Heston, and Robert Summers, International Comparisons of Real Product and Purchasing Power (Baltimore: The John Hopkins University Press, 1978).

[2] The apparent improvement of the UK in 1975 may be due to a temporary aberration in the exchange rates as the pound adjusted to a much lower level over that year. If so, the 1975 numbers should not be taken at face value.

[3] Cf. J.M. Samuels, R.E.V. Groves, and C.S. Goddard, Company Finance in Europe (London: The Institute of Chartered Accountants in England and Wales, 1975), and testimony before the Wilson Committee.

[4] In this type of comparison, the UK does not come off well, but the US comes off even worse. Besides the usual measurement errors which might invalidate this type of comparison, there is a basic problem that the GDP, as conventionally measured, may not fully capture all the benefits to society of new investment. For example, if a greater proportion of investment in the UK and the US were devoted to, say, environmental protection or improvements in workers' health and welfare, the percentage change in measured GDP would understate its true change from a social point of view. Finally, if the countries were starting with different capital bases, one might expect differences in the marginal efficiency of capital curves. Thus, one should be very cautious in using this type of comparison to evaluate the functioning of either the UK or the US economy.

[5] Others would argue that if the government cannot issue debt on the terms it desires, the terms are just not competitive and the markets are working efficiently. For a statement of this position, the reader might examine the lead editorial of the November 4, 1978 issue of the Economist.

[6] In the US, there has been no major legislation passed over the last decade or so to restrict institutional activity for the purpose of controlling their economic power. Perhaps the last major law designed to restrict the economic power of institutions was the Taft-Hartley Act which restricted union-dominated pension plans. The Teamsters scandal, however, suggests that this law may not be as effective as intended. The recently passed law known as ERISA was primarily designed to protect the rights of the beneficiaries of non-public pension plans -- though in doing this, it may have placed some modest restrictions on institutional activities.

[7] Marshall E. Blume and Irwin Friend, The Changing Role of the Individual Investor (New York: John Wiley, 1978).

[8] During the sixties, there was substantial unanticipated inflation in the US, and bonds had negative returns for a period of years.

[9] Another explanation could be that the risk premiums in the UK on equity were substantially greater than in the US. In view of the international flow of investment funds from one country to another, this explanation would require that the risk associated with equity investments in the UK be substantially greater than in the US.

[10] The Consumer Price Index as published by IMF was used to make this adjustment.

[11] The Consumer Price Index as published by IMF was used to make this adjustment.

[12] There is a major difference in terminology between the US and the UK which could lead to some confusion on the part of readers outside the UK. Long-term fixed-income debt is sometimes referred to as "loan stock" in the UK, whereas in the US, such debt would usually be referred to as a bond or a debenture. In the UK, the term "bond" is usually reserved for a short-dated instrument of roughly five years or less. Even government debt is sometimes referred to as "stock": for example, the 13 percent Treasury stock of 1990.

[13] Blume and Friend, op. cit.

[14] "Personal Sector Balance Sheets," Economic Trends (January, 1978), p. 99.

[15] Including over-the-counter stocks, the percentage of stock owned by individuals in the US was somewhere between 53.4 percent and 66.9 percent in 1975. (Blume and Friend, op. cit.)

[16] United Kingdom Flow of Fund Accounts: 1963-1976, Bank of England, May 1978.

[17] The actual rules are very complicated. Investment Memoranda: 1977/78, published by Cazenove & Co., contains a detailed non-technical description of the regulations on pages 100-109.

[18] S.J. Prais, The Evolution of Giant Firms in Britain: A Study of the Growth of Concentration in Manufacturing Industry in Britian, 1909-70 (Cambridge, Cambridge University Press, 1976), p. 269, n. 53.

[19] There is an equity question about who should profit from a disequilibrium situation. In the US, the regulatory bodies have generally taken the position that all relevant new information should be made available to all investors simultaneously. If taken literally, this position would probably result in a substantial reduction of private research effort with a possible reduction in the efficiency of the market. There is thus a delicate balance which must be struck between equity and efficiency considerations.

[20] Elroy Dimson, "A Review of UK Stock Market Research," (London Graduate School of Business Studies, unpublished manuscript).

[21]The Economist of November 4, 1978, contains examples of several pension plans whose investment strategies would be difficult to reconcile with the goals of the beneficiaries. The Economist called for greater disclosure as a way to reduce the incidence of such conflicts in the future.

[22] As an example in the US, a comprehensive law, known as ERISA, was recently passed with the laudatory purpose of protecting the right of the beneficiaries of private pension plans. While it is too early to evaluate the bill completely, even its proponents would recognize that it has had some undesirable effects. Due to political reasons, the responsibility for administering the bill was divided between two government departments, which has created some very burdensome reporting and compliance requirements. In response to these reporting and compliance costs as well as other provisions of the bill, some smaller corporations have decided to cancel their pension plans.

[23]As of April 1979, the mechanics of obtaining this rebate changed. Now the policyholder pays the contractural premium net of the tax credit and the company reclaims the tax credit directly from the government.

[24]In addition, the life insurance company must pay tax on realized capital gains currently at an effective rate of 30 percent. This rate is the same as the maximum rate of capital gains tax applicable to individuals in the UK. Currently, individuals realizing gains of less than 9500 pounds are taxed at a lower rate. Formerly, the tax was the minimum of 30 percent or one-half the marginal tax rate.

[25]Because the proceeds of a policy are not generally taxed, a life assurance company is not penalized from investing in corporate or government bonds as would be a unit trust.

[26]The administrative and investment charges for this particular plan are 0.5 percent of the value of the funds under management which is similar to what these charges would be in the US.

[27]In addition, some of the favorable tax treatment of these types of investments may be withdrawn. In the early seventies, insurance companies sometimes guaranteed surrender values which were so generous that there was the risk that the commitments could not be met. Indeed, there were some company failures in these years, but subsequent legislation has mitigated this particular problem.

[28]In the US, there are now restrictions as to the maximum amount that a mutual fund can retain upon cancellation; and perhaps because of these restrictions, these plans are no longer being marketed aggressively.

[29] Insurance companies can currently issue policies with some variability in premiums, but the amount of variability is substantially restricted. The most binding constraint is that no annual premium can be more than one eighth of the total premiums payable over a ten year period.

[30]A few groups in the US, such as some employees of non-profit institutions, are covered exclusively by defined-contribution plans in which an employer makes a current contribution to an investment fund and the amount of the pension is based upon the performance of the fund itself rather than final average salary. In this type of plan, the employee bears the risk and rewards of abnormal performance. In addition, many employees covered by defined benefit plans in the US also participate in profit-sharing or defined-contribution plans.

[31] Such a plan, usually issued by insurance companies, typically promises a fixed nominal sum at a specified time in the future. This sum may or may not be sufficient to cover the promised benefits.

[32]Cf. The Economist, November 4-10, 1978, pp. 109-115. The Occupational Pensions Board is charged with the responsibility of preventing such potential self-dealings.

[33]"Personal Sector Balance Sheets," Economic Trends, January 1978.

[34]A.R. Threadgold in his paper, "Personal Savings: the Impact of Life Assurance and Pension Funds (Bank of England Discussion Paper No. 1, October 1978) has reached the tentative conclusion that individuals do not consider employer contributions to pension plans in formulating their savings plans, so that, holding wages constant, employer contributions increase, pound for pound, the level of personal savings in the national accounts. In the longer run, however, it is possible that there may be some substitution as between wages and employer contributions. He concluded that higher employee contributions increase personal sector savings by about half of the amount of the contributions, so that here there may be some substitutability. One might speculate that for plans with employee contributions, the benefits are such that an employee is more certain of receiving them, but this explanation is just a speculation.

[35] Since there has been a slight upward trend in the ratio of the net increase in life assurance and pension funds to personal disposable income over the last 10 years, the figures in the text may slightly overstate the proportion held by individuals of those assets which are preferred by superannuation funds, with the overstatement increasing overtime.

[36] Institutional Investor Study Report of the Securities and Exchange Commission, Supplementary Volume 1, (Washington: US Government Printing Office, 1971).

[37]Angus, Deaton, "Involuntary Saving through Unanticipated Inflation," American Economic Review (December, 1977).

[38]This argument assumes that the drop in inflation in 1975 was unanticipated.

[39]"Saving, Inflation and Recession," Morgan Grenfell Economic Review, September 9, 1975.

[40] In an uncertain world, one must carefully distinguish between expected levels of income and transitory deviations from these levels.

[41] By a steady state world is meant a society which, among other things, has a population with a stationary distribution of age and stationary distribution of income and wealth.

[42] In addition, savings rates might be affected by the level of uncertainty associated with future income, including wage income, but the direction of this effect cannot be ascertain without further specification of an individual's aversion to risk as embodied in his utility function.

[43] In sum, the high savings rate of individuals in the UK may well be associated with a wealth effect, but with the available time-series data, it is difficult to ascertain exactly the nature of these wealth effects. In order to be more precise as to the exact nature of these wealth effects, it would be very desirable to undertake an analysis of a cross-section of households or even a time series of cross-sections. The limited amount of available independent aggregate time series data does not provide a sufficient number of data points to distinguish adequately among different wealth and saving theories.

[44] If one further makes an allowance for depreciation at replacement costs, the importance of undistributed income in the sources of funds drops even further in the seventies. According to the Department of Industry, after allowing for replacement cost depreciation, undistributed income represented from 54 to 58 percent of total funds over the period from 1964 through 1969. This percentage then fell to 28 percent in 1973, -11 percent in 1974, -31 percent in 1975, and 12 percent in 1976 (Structure of Company Financing," Trade and Industry, February 3, 1978, p. 2). Counterbalancing these depreciation effects would be the anticipated decrease in the real value of debt in an inflationary economy. This effect would reduce the depreciation effect and could conceivably even be of a greater magnitude than the depreciation effect.

In addition to these effects, unanticipated inflation will reduce the real value of debt in the corporate liability structure which may result in a shift of wealth from debt holders to equity holders. To ascertain the full effect of inflation, both anticipated and unanticipated, some allowance might be made for this potential wealth effect.

[45] Paul Marsh, "An Analysis of Equity Rights Issues on the London Stock Exchange," (Unpublished Ph.D. dissertation, London Graduate School of Business Studies, 1977).

[46] For this explanation to be correct, some of these uses must be included in the categories of fixed capital formation and other and unidentified in addition to the value of the physical increase in stocks.

[47] Midland Bank Review, February 1974, p. 10.

[48] Midland Bank Review, February 1974, p. 4-5.

[49] Midland Bank Review, February 1976, p. 19.

[51] Midland Bank Review, February 1977, p. 13.

[52] Gordon T. Pepper, Robert L. Thomas, and Geoffrey E. Wood of W. Greenwell & Co. in their submission to the Wilson Committee provided a theoretical description of what is meant by crowding out, and the presentation in the test is based upon this submission.

[53] Midland Bank Review (February 1979), pp. 12-13.

[54] J.S. Flemming, L.D.D. Price and Mrs. S.A. Byers, "The Cost of Capital, Finance, and Investment," Bank of England Quarterly, 1976.

[55] Unpublished data from Midland Bank.

[56] The Confederation of British Industry has addressed this question in its testimony before the Wilson Committee. While it agrees that companies in many other countries have higher leverage ratios than in the UK, it argues that the highly developed equity market allows firms to rely more heavily on equity. However, it does suggest that there may be some constraint by lenders which may keep firms from issuing as much debt they wished. Samuels, Grovers, and Goddard, op. cit., explore this issue in great detail.

[57] This conclusion requires that the investment strategy of the firm be known in advance, so that one class of owners cannot by changing the investment strategy confiscate wealth from another class. Usually, one of the primary purposes of the protective covenants in debt instruments is to force corporations to follow a predefined investment strategy.

[58] For a statement of this position, the reader is referred to Merton Miller, "Debt and Taxes," Journal of Finance (May, 1977).

[59] A description of the sample and a detailed summary of the results are contained in Appendix B.

[60] "Survey of the Investment Attitudes and Financing of Medium-Sized Companies," Research Report No. 1 for the Committee to Review ... Financial Institutions, op. cit., p. 14.

[61] These results are contained in Appendix B.

[62] This expansion could be due to either internal expansion or the acquiring of firms through mergers and acquisitions; the analysis did not distinguish between these two sources of growth.

[63] Written Evidence by the AIB before the Committee to Review... Financial Institutions, op. cit., volume 2, pp. 110-122.

[64] Supplementary Written Evidence by the Stock Exchange submitted to the Committee to Review ... Financial Institutions, op. cit., Volume 3, p. 265.

[65] AIB, op. cit.

[66] Supplementary Evidence... The Stock Exchange, op. cit., p. 263.

[67] Craig A. Simmons, "Immediate, Short, and Long Run Performance of New Issues, (Rodney L. White Center, University of Pennsylvania, 1973), presents some new evidence on this subject and references some of the prior literature.

[68] The only exception to this statement appears to be a black box system put together by the merchant bankers.

[69] Gilbert L. Beebower and William W. Priest, Jr., "An Analysis of Transaction Costs in Equity Trading," (Presentation on November 3, 1978 at the Seminar on The Analysis of Security Prices, University of Chicago) give some recent evidence on costs of trading.

[70] The Economist (March 3-9, 1979, p. 96-98) describes these types of transactions and suggests that the second broker may receive commissions to reward him for research, for the selling of units of a unit trust, or for having deposits made to a merchant bank.

Such practices, known as "give-ups" in the US, were quite common before the abolition of minimum rates. With competitive rates, such "give-ups" have become much less common in the US and the portion of the commissions subject to such "give-ups" has been substantially reduced. In this author's opinion, the US brokerage community has not yet fully adapted to a competitive commission market, and with full adjustment, there may be a further drop in commission rates from their current level. Even individuals in the US are now able to trade at substantially reduced rates if they wish.

[71] Blume and Friend, op. cit., p. 156.

[72] Irwin Friend and Marshall E. Blume, "Competitive Commissions on the New York Stock Exchange," Journal of Finance, September 1973; Blume and Friend, op. cit.; and numerous publications of investors' opinions by the New York Stock Exchange.

[73] Testimony of the Unit Trust Association before the Committee to Review ... Financial Institutions published in Evidence, op. cit. Vol. 7, pp. 42-43.

[74] The Securities and Exchange Commission publishes on a quarterly basis turnover statistics by major type of institutional investor in its publication Current Statistics.

[75] Paul Marsh, "An Analysis of Equity Rights Issues on the London Stock Exchange," op. cit., p. 72.

[76] These figures are derives from Table 6 of Cost of Flotation Registered Issues 1971-1972 (Washington, D.C.: Securities and Exchange Commission, December 1974).

[77] Paul Marsh, "Equity Rights Issues and the Efficiency of the UK Stock Market," Journal of Finance (forthcoming).

[78] If rights offerings of equity are preferable from the point of view costs, the question naturally arises as to why they are not used more often in the US. One possible reason is that in the US there is no institutional mechanism to protect stockholders who do not exercise or sell their rights, so that with any rights issue there are usually some stockholders, particularly the smaller ones, who forfeit through inaction the value of their rights. In the UK, however, unexercised rights are sold automatically at the expiration date and the proceeds distributed to the owner. Other reasons have also been given in the US for the relative sparsity of rights issues, including the desire of underwriters for greater fees and the perception of management that stockholders would not understand the dilution effects of a rights offering. For whatever reason, however, the predominant use of rights issues in the UK may make it less costly than in the US to raise new equity.

[79] One of the commentors on this paper pointed out the even greater tax savings associated with pension plans. In the national accounts, employer contributions to funded pension plans and the associated income are attributed to individuals. The apparent inference is that these tax savings give individuals an even greater incentive to save through pension plans.

The treatment of pension plans in the national accounts, however, obscures what is really happening. An employee is promised a pension, the amount of which is typically determined as a function of average wages. Thus is created an asset for the employee and a liability for the employer. If the employer had an extremely high credit rating, the existence or non-existence of a pension fund would be expected to have little impact upon the individual's saving behavior. In other cases, an individual may perceive a pension fund as affecting the probability of a firm's honoring its commitment. In this case, a pension plan is very similar to a sinking fund for a bond. Thus, tax concessions to pension funds are probably less important in explaining individual direct savings than in explaining the distribution of wage income as between current and deferred compensation.

[80] Creating such a further distortion in the tax code is obviously a "second best" solution, but it would help eliminate the discrimination against direct savings implicit in the current tax system.

[81] According to the Durbin-Watson statistic, the specification of the regression with financial wealth is somewhat better than that with net liquid assets.

[82] If one were to use as a predictor of the next year's savings rate, the past savings rate plus the average yearly increase of 0.55 over these years to remove bias, the standard error would be 1.14 which can be regarded as the standard error of a naive forecast and can be compared to those in Table A-1).