CENTER OF ECONOMIC RESEARCH

LECTURE SERIES

9.

THE CHOICE OF FINANCIAL ASSETS IN GREECE

By

DIOMEDES D. PSILOS

ATHENS, GREECE

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THE CHOICE OF FINANCIAL ASSETS IN GREECE

THE CENTER OF ECONOMIC RESEARCH

The Center of Economic Research in Greece was established in 1961 in the expectation that it would fulfill three functions: (1) Basic research on the structure and behavior of the Greek economy, (2) scientific programming of resource allocation for economic development, and (3) technical-economic training of personnel for key positions in government and industry. Its financial resources have been contributed by the Greek Government, the United States Mission in Greece and the Ford and Rockefeller Foundations. The University of California at Berkeley participates in the process of selection of scholars who join the Center's staff on an annual basis. It also participates in a fellowship program which supports research in Greece by American graduate students, as well as studies by Greek students for advanced work in economics in American Universities.

Fellowships are also provided to young men who have graduated from a Greek University. They join the Center as junior research fellows for a three-year period. They assist the senior fellows in their research and participate in seminars given by them.

The Center's main task, naturally, is the carrying on of research on key aspects of the Greek economy and on the fundamental policy problems facing the country in its effort to develop rapidly in the framework of the European Common Market. This research is carried on by teams under the direction of senior fellows. The results

are published in a Research Monograph Series.

The lectures and seminars included in the Center's program are not for the benefit only of those working for the Center. Economists, scholars and students of economics are also invited to attend and participate in this cultural exchange which, it is hoped, will be carried out in co-operation with institutions of higher learning here and abroad. A Lecture Series and a Training Seminar Series round off the publications program of the Center.

Another need which the Center has set out to meet is the establishment of a library and a bibliographical service in the economic sciences. Besides its usefulness for the education of the trainees of the Center, this service will be of particular interest to Greek economists in general.

It is contemplated that the Center will exchange information and results with similar Centers in other countries and will participate in joint research efforts with Greek or foreign public and private organizations.

Finally, one should emphasize that this is one more example of Greek-American co-operation, a pooling of human talent, funds and efforts, designed to promote the training of economists and help in meeting Greece's needs in the field of economic development.

The ultimate aim is eminently practical: to help in creating a better life for the Greek people.

ANDREAS G. PAPANDREOU, Director

THE CHOICE OF FINANCIAL ASSETS IN GREECE

I

INTRODUCTION

The central issue of this study is the allocation of current savings in Greece among various assets, including *money*, *near monies* and all types of *securities* issued by government and private business units.

In general, we may suppose, that given the initial distribution of wealth, the distribution of savings among alternative forms of wealth depends upon the yield differentials as formed by demand and supply conditions in the assets markets. A higher yield, say, on time or savings deposits or on government or private securities can be expected, other things being equal, to attract funds into that medium, whether or not the total of saving is increased. The equilibrium position will be reached at the point where the anticipated yield net of risk allowance on each asset at the margin is equal. Each investor's total asset holdings of each type will be consistent with his preferences for safety and liquidity within each market. From the macro-economic point of view, on

the other hand, the structure of rates of return will be such as to equalize demand and supply both for individual assets (of various yields, risks, and liquidities) and for all assets.

Besides the yield factor which directly affects the asset choices, some institutional factors may also be very influential. For instance, the distribution of income and institutional rigidities, some of which are technical and others the result of business attitudes, may bear directly upon the level as well as the distribution of saving among different uses.

In the light of these considerations we attempt an analysis and evaluation of the allocation of wealth (savings) among alternative uses during the past 14 years in Greece, in the hope that some light will be cast upon the potential performance of the assets market. In particular, we analyse, first, the demand and supply of cash balances (currency outside the banks plus demand deposits); second, we examine the growth and determinants of «liquid assets» (savings and time deposits with financial institutions); third, we discuss the demand for marketable securities as alternative forms of wealth. The discussion closes with some remarks about the problem of optimum allocation of savings (and wealth) in the pursuit of economic development.

II

THE GROWTH AND COMPOSITION OF CASH BALANCES

In order to give perspective to our analysis of monetary developments we present below the behavior of the nominal stock of money and its composition during the period 1948-1962 in terms of annual averages.

Table 1 shows that the stock of money has increased about 14 times since 1948, rising from 1.3 billion drs. in 1948 to 18.2 billion in 1962. The annual rate of increase in the stock of money was about 21.9% between 1948 and 1962, while the rate of increase in GNP* at current prices was 13.2%. These changes meant a sharp decline in income velocity (defined as the ratio of GNP to the stock of money), from 17.10 in 1948 to 6.84 in 1962.

The primary force responsible for the increase in the stock of nominal cash balances during the period was the rise in the banking system's claims on the government. These rose from 7,386 million drs. in 1954 to 13,708

* Defined as Gross National Product plus net borrowing and net transfers from the rest of the world.

million in 1962, or about 10% per year. Although statistical information is not available for the 1948-1954 period, unquestionably the increase in these claims was proportionately much greater during the first part of the period. The implication of such changes in the system's

TABLE 1.

Nominal Stock of Money and Income Velocity, 1948-1962

(in million drachmas)

Year	Total Stock of Money	Currency	Private Demand Deposits	Public Entities Demand Deposits	Ratio of Currency to Total Stock of Money	G.NP.	G.N.P./M
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1948	1,289	957	208	124	74.2	22,046	17.10
1949	1,710	1,258	329	123	73.6	28,879	16.88
1950	2,360	1,662	503	195	70.4	33,889	14.35
1951	2,800	1,773	731	296	63.3	40,192	14.35
1952	3,152	2,000	871	281	63.4	41,044	13.02
1953	4,093	2,597	1,143	353	63.4	53,074	12.96
1954	5,395	3,306	1,570	519	61.3	63,031	11.68
1955	6,397	4,024	1,803	570	62.9	70,062	10.95
1956	7,956	5,237	2,101	618	65.8	83,115	10.44
1957	8,903	6,043	2,087	773	67.9	89,462	10.04
1958	10,341	7,003	2,892	1,046	67.7	94,977	9.18
1959	11,263	7,452	2,674	1,137	66.2	99,505	8.83
1960	13,658	8,901	3,335	1,422	65.2	110,392	8.08
1961	15,911	10,516	3,676	1,719	66.1	120,850	7.59
1962	18,188	12,483	3,934	1,771	68.6	124,476*	6.84

Source : Bank of Greece, Research Department.

* Estimate based on a 3% rate of increase over 1961.

claims on the government is that the role of the central bank was quite passive: the money supply was controlled primarily by the government, the Bank of Greece contributing to manipulation of the money supply only through selective monetary measures.

The banking system's financial claims on the entire private sector increased slowly and at a constant rate over the same period. This may be attributed to the credit-allocation policies of the Bank of Greece, which determined maturity terms and credit standards for loans to various productive sectors in the economy. It is worth mentioning that these claims consisted mainly of short-term credits, although the *rate* of increase of long and medium-term credits was much greater than that of short-term.

As for other factors affecting the money supply during this period, the security holdings of the banking system have, since 1956, also experienced a rapid growth, rising at a rate of about 10% annually. The influence of foreign assets upon the expansion of the money supply, on the other hand, seems to be very small.

Since our analysis is based upon the hypothesis that money is significant more as an asset than simply as a medium of exchange,

an examination of the demand for it is in order.

In general, the demand for money as a way of holding wealth may be supposed to depend on the preferences of the individual or entrepreneur, his income and the opportunity cost of holding money, the latter being the yield on assets other than money. We have used the following general form of the demand function for money:

$$(1)\ \log\left(\frac{M}{NP}\right) = a + b_1 \log\left(\frac{Y}{NP}\right) + b_2\left(E_p\,.\right)$$

The dependent variable (M/NP) is desired real per capita holdings of currency and demand deposits, implying that only the real value of money matters to wealth holders. The first independent variable is real per capita income. The variable (E_p) is the expected rate of change of the consumer price index, which may be expected to correlate negatively with the dependent variable. The expected rate of change of prices is assumed to measure the cost of holding money and has been interpreted as an average expected rate of change for all individuals.

The underlying assumptions of the above demand function are: (a) that desired real cash balances are equal to actual real cash balances at all times, (b) that assets which con-

stitute a hedge against inflation constitute the main alternative to money, and (c) that the expected rate of change in prices depends on the actual rate of change in prices.[1] The logarithmic form of the function was used - i.e., it was assumed that a given percentage change in each independent variable might lead to a particular percentage change in the dependent variable whatever the absolute levels of the variables.

The statistical analysis yielded the following regression equation for the period 1950-1962:

$$(2)\ \log\left(\frac{M}{NP}\right) = -3{,}464 + \underset{(.2453)}{1.745}\log\left(\frac{Y}{NP}\right) - \underset{(.00376)}{.01692}(E_p)$$

The multiple coefficient of correlation, $R = .9615$, and the coefficient of determination, $R^2 = .9245$.

The elasticity of the demand for money with

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1. We have used Philip Cagan's formula to estimate the expected rate of change in prices. As the starting point, we used the year 1946, where it was assumed that actual prices were equal to the expected prices. The annual expected rate of change in prices is an average of monthly expected changes calculated by using a constant weighting factor, $B = .5$. See his outstanding article, «The Monetary Dynamics of Hyperinflation,» in Milton Friedman (ed.) *Studies in the Quantity Theory of Money.* (Chicago: The University of Chicago Press, 1956), pp. 37-42.

respect to real per capita income observed in the above equation is greater than one (1.745), indicating that real cash balances are considered by the public to be a superior commodity. It is interesting to note that since the estimated elasticities of per capita real cash balances with respect to per capita real income in the United States are of about the same magnitude, ranging from 1.6 to 1.8, it may be argued that the behavior of people with respect to money is not very different between countries in different stages of economic development.

The relation of desired real cash balances to the expected rate of change in prices may be seen in the price-elasticity of demand for real cash balances, which for the period 1950-1962 was found to be —.01692, indicating a tendency for people to increase expenditures and reduce cash balances in the face of expected price rises.

Looking at the composition of the nominal supply of money, we observe that the ratio of currency to the total stock of money was 74.2% in 1948 and 68.6% in 1962. In the interim, however, there was an up and down pattern: the ratio declined from 74.2 in 1948 to 61.3 in 1954, then rose again to 67.9 in 1957, only to decline to 65.2 in 1960 and to rise again to 68.6 in 1962.

Generally speaking, the high ratio of currency to total money supply in the case of Greece may reflect general adverse feelings about deposits as a means of payment, due partly perhaps to institutional obstacles to their use. For instance, the legal status of checks, the legal penalties for writing a bad check, and the delay in punishment for fraud may be basic factors. The introduction of a proper legal framework and the initiation of a «pay by check» program by large companies, including the banks themselves, could lead to a substantial reduction in people's preferences for currency.

The underlying hypothesis here is that currency as a form in which accumulated savings may be held is not a very desirable monetary phenomenon, especially if the ratio of currency/money supply is very high. If the objective of the government is monetary stability, the Bank of Greece's open-market operations in foreign currencies, and especially in gold sovereigns for the purpose of holding the currency/money supply ratios within the bounds required by trends in the economy, may endanger the foreign currency reserves of the country. Sales of gold sovereigns by the Central Bank may reduce the currency holdings of the private sector, but of course always at

the expense of the Bank's foreign reserves.

Returning to our statistical analysis, we find that desired real per capita *currency* holdings correlate positively with changes in real per capita income and negatively with the expected rate of change in prices.
The regression equations for the period 1950-1961 are:

$$(3)\ \log\left(\frac{M_1}{NP}\right) = -5{,}108 + \underset{(.1478)}{2.0776}\log\left(\frac{Y}{NP}\right) - \underset{(.0067)}{.0154}(E_p)$$

with a multiple correlation coefficient R = .9883 and coefficient of determination R^2 = .9767. $R_{12.3} = .9803$ and $R_{13.2} = -.6340$. The simple logarithm regression of real currency holdings per capita on real income per capita is :

$$(4)\ \log\left(\frac{M_1}{NP}\right) = -5{,}827 + \underset{(.1519)}{2.2619}\ \log\left(\frac{Y}{NP}\right)$$

with R = .9803 and R^2 = .9610.

In both equations, the regression coefficients appear much greater than their standard errors, implying reasonable reliability in the estimates of the parameters. The high values of the income elasticities of demand for per capita real cash (currency) balances are to be explained mainly by the increased monetization of the Greek economy.

III

THE CROWTH OF LIQUID ASSETS

In this section we discuss the growth of liquid assets - i.e., savings and time deposits with financial institutions - owned by the private sector. The statistics of the money supply are also presented for comparison.

Although the degree of substitutability between each type of *near money* and *money* proper (as well as between the various types of near monies) cannot be measured, a few remarks are in order.

Savings deposits with the Postal Savings Banks and/or commercial banks in Greece possess a very high degree of liquidity; generally, they can be withdrawn *on demand* at any time. Time deposits bear the usual time restraints. Deposits owned by public entities include demand and time deposits, but their turnover is institutionally determined and takes place at irregular time intervals.

The following table presents the relevant statistics in terms of annual averages.

TABLE 2.
Nominal Liquid Assets, 1948-1962.

Year	Money Supply		Other Deposits*			
	Amount	% of Total Liquid Assets	Amount	% of Total Liquid Assets	Total Liquid Assets	Ratio of other deposits to Money Supply
1948	1,289	79.4	334	20.6	1,623	25.9
1949	1,710	74.4	588	25.6	2,298	34.3
1950	2,360	72.2	905	27.8	3,265	38.3
1951	2,800	72.6	1,056	27.4	3,856	37.7
1952	3,152	70.3	1,331	29.7	4,483	42.2
1953	4,093	72.2	1,570	27.8	5,663	38.3
1954	5,395	69.9	2,317	30.1	7,712	42.9
1955	6,397	66.4	3,226	33.6	9,623	50.4
1956	7,956	64.3	4,421	35.7	12,377	55.5
1957	8,903	54.9	7,319	45.1	16,222	82.2
1958	10,431	50.1	10,292	49.9	20,633	99.5
1959	11,263	45.9	13,273	54.1	24,536	117.8
1960	13,658	44.6	16,965	55.4	30,623	124.2
1961	15,911	44.4	19,850	55.6	35,761	124.7
1962	18,188	41.9	25,166	58.1	43,354	138.8

Source : Bank of Greece.

* Other deposits include time and savings deposits held by the public.

The table shows that the money supply rose from 1,289 million drs. in 1948 to 18,188 million in 1962, while all deposits other than the de-demand deposits increased from 334 million to 25,166 million drs. over the same period.

All liquid assets taken together rose from

1,623 million to 43,354 million drs. between 1948 and 1962, indicating that the liquidity of the public increased at an annual rate of 26.3%. This high annual rate is mainly explained by the rapid accumulation of savings and time deposits over the period. Thus, while the money supply increased by 16,899 million drs. between 1948 and 1962, the time and savings deposits rose by 24,832 million over the same period.

The high differential rate of increase between the two forms of wealth - namely, between money as a medium of exchange and money as a form of interest-bearing asset - is more significant after 1954. The net change in the money supply since then has been 12,793 million drs., while the corresponding change in «other» deposits has been 22,849 million. This is very significant because it points to the asset shifts which have taken place over the last 15 years in the private sector of the economy. Inspecting the table once again, we observe that while the money supply, expressed as a percentage of total liquid assets, declined from 79.4% in 1948 to 41.9% in 1962, «other» deposits rose over the same period from 20.6% to 58.1% of total liquid assets.

The asset shifts which occured over this period can also be shown by the ratio of «other»

deposits to the money supply, which increased tremendously, from 25.9% in 1948 to 138.8% in 1962. This ratio is usually very low in developing countries and very high in developed ones.

To see whether the observed rise in the «other» deposits/money supply ratio reflects a rise in savings out of current income or simply a substitution between deposits and other assets, particularly gold sovereigns, we take the ratio of the change in «other deposits» to gross private savings, as given in the national accounts. This ratio increased steadily from 8.9% in 1949 to 34.1% in 1961. This is consistent also with the regression equations yielded by our statistical analysis,* showing that the changes in deposits have been related to net private domestic savings at a rate of about 33% since 1950 and to national income at 54% . The ratio of the change in the money supply to private savings, on the other hand, has increased only slightly, from 13.8% in 1949 to 16.7% in 1961. All the above points indicate that the accumulation of saving deposits over the period in question is primarily explained by savings out of current income

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* The regression equation is : $\Delta L_0 = -47{,}277 + .333\ (S)$, with $R = .72498$ and $R^2 = .52559$. (.1056)

in the private sector.

Theoretically, both the amount of savings and their allocation among different investment outlets are influenced by a number of economic variables, of which income, interest rates, and price expectations are all of potential importance. So the real per capita savings and time deposits of private investors have been regressed on real per capita income and the expected rate of change in prices, for the period 1950-1961.

The regression equation appears as follows:

$$(5)\quad \log\left(\frac{Lo}{NP}\right) = -14{,}483 + \underset{(.53402)}{4.5745}\ \log\left(\frac{Y}{NP}\right)$$

where (L_o/NP) is real per capita savings and time deposits in the hands of the public and (Y/NP) is real per capita income. The coefficient of correlation $R = .9438$ and $R^2 = .8908$.

$$(6)\quad \log\left(\frac{Lo}{NP}\right) = -12{,}432 + \underset{(.57612)}{4.0484}\ \log\left(\frac{Y}{NP}\right) \underset{(.02593)}{-.0440\ (E_p)}$$

where (E_p) is the expected rate of change in prices. $R = .9590$ and $R^2 = .9197$. $R_{12.3} = .9277$ and $R_{13.2} = -.5146$.

The regression coefficients in these equations are considerably greater than their respective standard errors, a fact which indicates that

their reliability may not be questioned

The income elasticity of real per capita liquid assets in both equations is well above unity, indicating that superior character attaches to real liquid assets over all other commodities, and that any percentage increase in real per capita income brings forth a more than proportional increase in the individual's demand for real liquid assets. This high income elasticity of demand for real per capita liquid assets may also indicate that the financial market in Greece has been developing much faster than any other market in the economy, a fact which is further substantiated in our study of the capital market. The two main financial institutions, commercial banks and postal savings banks, have adopted an aggressive campaign and have been paying high interest rates. In addition, the lack of capital market institutions has influenced the behavior of surplus units in the financial market. As indicated below, no long-term private financial institutions exist as in countries with well organized financial markets. The Greek financial market is, generally speaking, a money market mechanism, which works mainly with cash balances in the form of deposits or currency. Notwithstanding the importance of this market, which has brought under control

substantial amounts of cash balances since 1952 (thereby mitigating potential inflationary tendencies in the economy), the fact remains that its oligopolistic structure may be held responsible for the observed distribution of savings.

The influence of the expected rate of change in prices was also found to be significant. The expectation coefficient was —.04402, showing that expected changes in prices account also for the accumulation of wealth in the form of savings and time deposits in Greece. This influence, was more conspicuous after 1954, as the period 1954 - 1961 was characterized by a mild rise in prices. The wholesale price and the cost of living indices rose by only 16.1% and 14.6% over this seven year period - i.e., an annual rate of 2.6% and 2.4%, respectively.On the other hand, the import price index rose from 100.0% in 1953 to 132% in 1957 and declined to 128% in 1960.

The channeling of current as well as past savings into financial institutions has required strong confidence in the newly created monetary claims as well as good rates of return. A look at Table 3, however, which shows the structure of interest rates prevailing on various types of assets since 1954, suggests some surprising conclusions. First, the rate of return

on time and savings deposits with financial institutions has been constantly declining over the period except for the first two years, falling from 9.57% in 1956 to 4.20% in 1962. Secondly, bond yields have also declined steadily since 1955, but in general less than the rates earned on deposits (although in four years bond yields were lower than yields on deposits). Finally, in all years the running yields on shares were negligibly higher than the rates of return on liquid assets - not high enough to compensate the investors for the greater risks involved or for the lesser liquidity of such investments as compared with deposits and bonds.

TABLE 3.

Weighted Rates of Return on Financial Assets.

Year	Rate of Return on Deposits[1]	Yields on Bonds	Yields on Shares[2]
1954	7.00	6.01	—
1955	7.00	8.25	—
1956	9.57	7.11	—
1957	8.62	8.49	9.26
1958	7.66	7.05	8.65
1959	6.66	6.26	7.83
1960	4.34	6.61	5.03
1961	4.43	6.36	4.48
1962	4.20	6.22	4.30

1. Deposits include only time and savings deposits with financial institutions.

2. Weighted averages for 23 private corporations which paid out dividends constantly over the period 1957-1962.

Under these conditions therefore, it is clear that individuals and business units preferred to invest their financial surpluses in deposits rather than in securities. The differential return from bonds and shares was too small to induce the investors to make substantial shifts in their assets. This point may also be strengthened by the fact that, on the average, the size of deposits accounts is relatively small, ranging from 15,000 to 30,000 drs. between 1960 and 1962. The small size of these holdings is relevant here because only depositors with large financial surpluses may benefit enough from small interest differentials between financial assets to find portfolio shifts worthwhile.

The folowing Table indicates the small average size of savings deposits with all banks, by saving group :

TABLE 4.

Average size of deposits (in drachmas)

	1960	1961	1962
Business Enterprises	26,193	29,315	29,102
Entrepreneurs	22,922	21,474	21,876
Professionals	26,449	25,081	27,319
Wage-Salary Earners ...	17,980	17,567	17,931
Farmers	13,514	12,937	13,566
Others	16,358	15,432	16,016

Source : Bank of Greece, Research Department.

It is difficult to establish, however, the quantitative influence of relative yields on shifts between various liquid assets. Nevertheless, our statistical analysis yielded the following regressions:

$$(7)\quad \log\left(\frac{Lo}{NP}\right) = 4{,}244 - \underset{(.063)}{.1708}\ \log(r).$$

$R^2 = .4837$ and $R = .6955$.

The dependent variable in the equation is real savings and time deposits per capita, and the independent variable log(r) is the weighted interest rate paid on these assets, for the period 1954-1962.

This equation shows that the influence of the interest rate upon the accumulation of real liquid assets in the form of savings and time deposits is negative - precisely the reverse of the relation to be expected if the data represented a series of observations on a single demand curve for savings and time deposits. The negative coefficient observed may be good evidence that it was not the nominal income earned on such liquid assets which was the crucial variable in determining the distribution of wealth between alternative liquid assets, but the real rate of returns on such assets. The apparent negative relation between deposits and interest rates paid on them very

likely reflects a lag between actual rates and expected rates. It took time for people to be persuaded that actual rates would be high, not only in nominal but also in real terms. Hence, during the period when nominal rates were falling, the real rates that the community expected to be earning on savings and time deposits may in fact have been rising. This would explain the paradox of growing savings and time deposits despite falling nominal yields.

IV

THE EX POST DEMAND FOR SECURITIES

The preceding analysis dealt with the demand for real cash balances and other liquid assets. These assets, however, must be studied in relation to other financial assets-namely, all types of securities issued by government and private business units; for there is an inverse relationship between *ex ante* demand for real cash balances and *ex ante* demand for securities.

The individual investor's demand for securities is positively related to real per capita income and real per capita cash balances and negatively related to the prices of securities. In addition, preferences also affect the demand for securities. Given these, an upward shift in the demand for securities takes place only if real income and/or real cash balances increase both in the aggregate and at the micro level; at the same rate of interest, individuals are then willing to hold more securities. Both real income and real cash balances, as pointed out earlier, increased during the period under

consideration. The demand for stocks and bonds, on *ceteris paribus* conditions with respect to the rate of interest and to expectations, should therefore have risen. But what actually happened? How has the demand for securities been affected by changes in income, real cash balances, and other variables?

At the micro level, the demand for particular types of securities is affected by different kinds of risk and liquidity considerations. However, the available statistics do not permit a detailed analysis of the demand for each type of securities. Nor is it possible to present a thorough analysis of the characteristics of traded security holdings (stocks and bonds) by groups of investors. Therefore we cannot give quantitative answers to such questions as who owns securities or how stock transactions affect the distribution of income and hence savings in the Greek economy. Our analysis is rather a description of total transactions in the securities market and their relation to other financial and economic variables.

The data presented here relate to the securities traded in the Athens Stock Exchange; over the counter market transactions are not touched at all, regardless of their relative significance.

TABLE 5.

New Issues of Securities, Publicly Placed (Offering Prices).
(in million drachmas)

	Private Issues			Government		Public Utilities Bonds	Grand Total
	Shares	Bonds	Total	Bonds	Treasury Bills		
1954	101	—	101	300	—	—	401
1955	159	15	174	—	—	—	174
1956	24	14	38	—	—	—	38
1957	4	—	4	—	—	—	4
1958	64	—	64	—	545	300	909
1959	7	—	7	—	86	400	493
1960	51	15	66	750	995	400	2,211
1961	139	—	139	—	380	500	1,019
1962	569	109.5	678.5	990	1,084	500	3,252.5
Total	1,118	153.5	1,271.5	2,040	3,090	2,100	8,501.5

Source : *Annual Bulletins* of the Athens Stock Exchange.

Table 5 shows that, on the whole, the market for private new issues has been very *thin* over the period under review. New shares sold on the Athens Exchange amounted to only 1,118 million drs. over the period 1954-1962. About half of this amount was issued in the single year 1962 by two commercial banks (560 million by the National Bank, and about 17 million by the Bank of Commercial Credit), while the rest, 541 million, was issued by non financial corporations over a nine-year period.

In addition to this 541 million of capital

obtained over the period on the open market, Greek non-financial corporations issued during the period 1956-1961 another 832 million drs. in stock sold directly to existing shareholders.* These statistics, however, are presented here with some reservations as to their reliability with respect to both timing and coverage. First, these figures, given annually, relate to the year in which the announcement of the new issues was published and not to that in which the amounts were actually raised. Second, they exclude all new equity covered by the issuing companies' reserves. Therefore, the actual amount of new share capital raised by private corporations in Greece may be larger than indicated by these statistics.

In short, in Greece only a few issues are publicly placed. There is evidence, moreover, that even these have been absorbed by existing shareholders and institutions having some affiliation with the issuing corporations. In five out of the nine years the amount of publicly placed issues were insignificant; in three of the years they slightly exceeded 100 million drs.; and only in 1962 did the amount of new share capital exceed 500 million. Subscriptions

* This figure was obtained from the changes in share capital of corporations announced in the *Official Gazette* for each year.

to new issues by existing shareholders, according to pre-emptive right, have risen from 83 million drs. in 1956 to 241 million in 1961.

These findings bear directly not only upon the development of a capital market in Greece but also upon the rate of capital formation in the economy as a whole, since they mean that corporate investment is closely tied to the wealth restraints of the original owners of the company, regardless of available aggregate savings in the rest of the economy. Of course, it is legitimate for existing shareholders to prevent dilution of their equity. It is, however, important that if no danger of losing control of the business exists, the pre-emptive right rule should be abandoned; in the interest of Greece's future economic growth new shareholders should be granted the privilege of subscribing to issues of the company on the stock exchange.

Table 5 also shows that Greek corporations do not resort to the bond market for capital. Four years out of nine saw the issuance of debt instruments of negligible amounts. The sum of 15 million drs. was raised publicly in each of three years (1955, 1956, and 1960), and only in 1962 did two companies (a textile firm and a cement firm) raise an amount of 50 million drs. by issuing bonds at 7% and 8%.

The government bond market presents a different picture. Up to 1954, the Greek government systematically abstained from the securities markets, its only resort being to the Central Bank. The reasons for such abstention were many, but the most important one may have been lack of confidence in its borrowing transactions on the part of the private sector, due (1) to the government's defaulting on its prewar bonds, (2) to inflationary pressures in the economy, (3) to government instability, and (4) to unprogrammed economic policy. It was not until 1953 that some of these obstacles were removed and monetary and government stability were restored again.

Now, at last, government borrowing has again been resumed, although on a small scale and at irregular intervals. Table 5 shows that the Government issued bonds of 300 million drs. in 1954, 750 million in 1960, and 990 million in 1962 for its development program. In addition, in 1958 treasury bills were sold to commercial banks to finance the public investment program. The commercial banks were obliged to invest in these interest-bearing treasury bills 18% of the average monthly increase in the private deposits held by them. Moreover, commercial banks were given the opportunity to purchase treasury bills over and above this

compulsory requirement, provided, of course, that additional government needs arose. The banks have also been allowed to invest in such bills the provisionally available part of their deposits intended for long-term advances. Thus, over the past five years these financial institutions have invested about 3,000 million drs. in treasury bills.

Another interesting recent development is the substantial scale of borrowing by a single state - owned corporation, the Public Power Corporation, which has financed investment expenditure of 2,100 million drs. in this way since 1958.

These statistics undoubtedly show an increasing response to offerings of securities by corporations and by the government. One may speculate that the shift which has occurred in the demand for new securities would have been much greater if corporations and the government had resorted more frequently to the capital market for long-term financing. But as will be explained in more detail below, the reluctance of industrial firms to issue new securities led to a large accumulation of savings in the commercial banks over the period under consideration.

It should be mentioned that the upward shift in the demand for securities, especially

after 1956, looks more significant - from the point of view of directing the public's investment habits towards such financial assets - if we take into consideration the fact that average yields on securities declined steadily over the period. The dividend yields declined from 9.26% to 4.20% between 1957 and 1962, while bond yields declined also from 8.2% in 1954 to 6.0% in 1962. Despite this decline in yields, the private sector in 1960 absorbed 2,200 million drs. of new issues of all kinds, while in 1962 the market sold about 3,250 million drs. of new securities. More than 50% of all private issues was subscribed by non-institutional investors, while the government Productive Loan issue in November 1960 was almost entirely taken up by private individual investors, despite the abnormal international monetary conditions prevailing at the time on account of the dollar crisis. There may be some validity to the frequently heard argument that this loan was forced upon public employees and other individuals during the subscription period, but this cannot totally convince the objective observer that relatively large savers have not shifted their preferences toward securities issued by well-established private corporations or toward government issues carrying advantageous terms.

To support further our hypothesis that the demand side has been fairly responsive to offerings of securities during recent years, we may measure the significance of the change in the investment pattern of investors by taking the ratio of new issues absorbed to total net private savings. This ratio rose from .7% in 1956 to 15.2% in 1960, and it is expected to pass the 17% mark in 1962. To the extent that the new securities are purchased by individuals who normally deposit their savings with the commercial banks, a shift is occuring from bank deposits to securities holdings; hence it appears that banking institutions are facing strong competition from the slowly emerging capital market. The money-saving public seems to be attracted by the favorable terms of government and public corporation loans, among which the dollar clause, the high coupon rate, and the lottery features are of major importance.

It should be pointed out that the value of securities traded in the Athens Stock Exchange is not a very accurate indicator of people's propensities to invest in such assets. The published figures for these values take the form of average monthly prices and reflect only very generally the market preferences of Greek investors. Prices are much affected by the ex-

pectations of stock buyers as to the economic performance of a given industry or the liquidity of a specific security. That stocks with good past dividend and growth records and favorable prospects are worth more than others goes without saying. But the *thin* stock market is particularly subject to wide fluctuations resulting from extreme speculation, and prices are not infrequently driven beyond reasonable limits. The absence of «positions» and the lack of a well-organized network connecting the market with institutional and non-institutional investors contribute to this tendency.

Despite the *thin* character of the stock market, however, the relative rise in the volume of shares and bonds traded may be regarded as an indication of a higher demand for securities. Thus, the number of traded shares has risen from 273,649 in 1954 to 607,644 in 1961 and declined again to 260,641 in 1962. The value of shares transactions increased from 57,919 million drs. to 269,661 million over the same period. Bond transactions on the stock exchange rose significantly in terms of both numbers traded and their value. The number of bonds traded approximately quadrupled over the period,while the value of these transactions increased from 36,905 million drs. in 1954 to 398,893 million in 1962.

V

CONCLUSIONS

The preceding analysis shows that a rapid accumulation of liquid assets has taken place over the 1950's in Greece. This has meant a shift in the supply of loanable funds and excess liquidity for the banking system. However, only a limited fraction of these funds can be used for financing capital formation without endangering the liquidity of the commercial banks.

The principal contention here is that the growth of savings deposits *per se* may not be a useful development. Their growth would have been more useful, if, partly at least, they had been allocated among other financial media, such as private and government securities. Such an allocation would be far more developmental than the accumulation of savings in the form of bank deposits. This particular form of the problem of allocation of capital shows the backward state of the securities market in Greece. The optimum allocation of a given supply of funds among competing uses

requires, on the one hand, the existence *of a wide range of financial outlets* consistent with reasonable placement or servicing costs and with risk differentials, and,on the other hand, the existence *of a multiple and complex set of institutions* which will facilitate the mobilization of savings and channel them into the hands on investment firms. The first condition refers to the growth and composition of total *debt*[1] in a society which is characterized by deficit and surplus-spending units.

The volume and composition of private and public *debt* have been considered as the counterparts of economic growth. With no debt other than money in an economy, there are restraints on savings, on capital accumulation, and on efficient allocation of savings to investment that depress the rate of growth in output and income. Real growth generates issues of *debt* instruments and incremental demand for real financial assets.[2]

As we indicated above, in Greece over the

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1. The term «debt» includes both bonds and equity (stocks) although the latter is a certificate of ownership. For our purpose the common stock is inseparable from the instruments of indebtedness.

2. See Albert Hart, *Money, Debt and Economic Activity* 3rd ed. (New York: Prentice-Hall, 1961) and John G. Gurley and Edward S. Shaw, *Money in a Theory of Finance* (Washington: The Brooking Institutions, 1960).

past 10 years the volume and structure of debt has not been conducive to economic growth. The stockpiling of liquid assets (debt of financial intermediaries) at the expense of other types of debt such as private and government securities tended to increase the risk inherent in the liabilities of financial intermediaries and functioned as a restraint on the equilibrium of the system. The real growth of the economy would have been greater over the period under review if the allocation of savings (and wealth) had taken place optimally, favoring a wide differentiation of private and public debt.

The significance of a wide differentiation of debt is twofold: on the demand side it tends to minimize the «disutility function» of the debt burden, and on the supply side (surplus-spending units) a mixed position of financial assets tends to maximize the utility function of a portfolio, or in other terms, to achieve the maximum prospective net yield.* Usually, the wider the asset differentiation is in a portfolio, the less is the risk of depreciation in the real value of the assets.

The volume and composition of debt in developed countries has grown hand in hand with the rate and pattern of real economic

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* Gurley and Shaw, *op. cit*, p. 118.

activity and with the growth of financial markets. The former means a rise not only in real per capita income but also in the level of industrial production, the forms of business enterprises, the scale and techniques of production, etc. The development of financial markets, on the other hand, requires specialized financial institutions which make available to investors information about market conditions. The development of a complex financial system increases the breadth of the market for loanable funds in developed economies, and as a result the inefficiency of funds allocation is minimized. As Gurley and Shaw put it, the development of financial intermediaries has «resulted in a more homogeneous debt structure, in more competitive markets, in greater flexibility of interest rates»[1]. In the United States, it was after 1914 that «the changed organization and mechanics of financial markets, through which issuers or sellers and purchasers or holders of debt were brought together, was one factor to alter the character of the supply and demand for debt instruments»[2].

In short, well-organized and adequate finan-

1. *Ibid*, p. 125.

2. R.V. Roosa, «Interest Rates and the Central Bank» in *Money, Trade and Economic Growth*, Essays in Honor of John Williams (New York: Macmillan, 1951), p. 278.

cial systems serve in developed countries both the demand and the supply side of the capital market. On the demand side, they act quickly to meet loan demands of various degrees of risk. This ability is mainly explained by the high degree of institutional specialization observed in these countries, which in this case provides the basis for evaluating the risks inherent in every planned investment. A great variety of financial intermediaries, such as investment banks, investment companies, underwriters' syndicates, mortgage banks, insurance companies, and others, have all, upon relatively short notice, provided funds to various sectors of the economy to finance new investment outlets at times requiring expansion or restructuring.

On the other hand, the supply side of the market is being facilitated by a number of financial institutions such as investment banks, mutual saving banks, insurance companies, special departments at commercial banks, etc. All these specialized institutions serve the entire economy as suppliers or issuers of a wide range of financial assets, enabling the savers to spread the risks inherent in such investments. The placing of funds in an investment bank for example, in effect enables the small saver to allocate his surplus among

a wide range of enterprises and industries, and this indirect diversification of his portfolio involves a smaller risk than would the investment of his funds in a bank account or in a single stock or bond issue.

Hence, the growth of specialized financial institutions in developed countries has led to a beneficial accumulation and optimum allocation of investible funds. Their evolution, it may be said, was a response to the needs of the market and very often has resulted in greater demands for funds. In Greece today, there are great financial needs evolving along with the development process, and large gaps exist in the financing of economic development. Therefore, in addition to the availability of funds and other conditions required for economic development, the growth of a multifaceted and specialized capital market is urgently needed.