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THE ENERGY CRISIS, INFLATION AND INVESTMENT

Remarks of

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There are few things which are so important to this country -- yet unfortunately are so misunderstood -- as the need for more capital formation. Comparisons between the U.S. and other major industrial countries point up the fact that the substantial increases in productivity enjoyed by our major world competitors can in large part be attributed to substantially higher rates of capital investment.

The increase in U.S. investment which the paper prepared for this meeting by Dr. George Terborgh documented is an encouraging sign -- unfortunately I must qualify my enthusiasm by suggesting that it is not enough.

There are several factors which require our devoting an even higher share of our national product to investment than we have in the 1965 to 1973 period. Perhaps most would agree that the two most significant problems confronting us now are inflation and energy. The need for increased and modern industrial capacity of the most effective kind is essential to a long run solution to either of these problems.

Many of us in this nation seem to have forgotten a basic economic law: in order to consume more we have to produce more. Americans have come to expect a continually rising standard of living. The only way to fulfill these expectations is through the maintenance of a high rate of productivity growth. To break our present inflationary spiral, productivity

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The usual disclaimer -- that I speak for myself and not for the entire Federal Reserve Board -- is, of course, in order.

must rise by at least as much as wages increase. In fact, to make real progress we should have increases in output per manhour that are greater than those in wages. Such productivity increases will require a substantial increase in capital per worker. Thus an increase in investment is essential to solving our inflation problem.

The Arab oil boycott has focused attention on an energy shortage which has been building for years; its potential long-term implications touch the heart of the American way of life. Obviously, energy is a crucial factor of production. The current demonstration of our energy supply's sensitivity to world political problems has made apparent our need for a more reliable, independent U.S. energy supply. Since many of the alternative sources being considered, such as shale oil and nuclear power, require extensive capital investment per unit of output, solving the energy problem will require an intensive capital investment effort. My fellow Board Member, Robert C. Holland, recently noted that the energy industry may require capital outlays between now and 1985 of approximately $700 billion dollars. To put this in perspective, between 1961 and 1971 the energy industry's capital expenditures were about $200 billion dollars.

Recent private U.S. capital investment can be categorized as follows: capacity expansion, modernization and pollution abatement.

The drive toward modernization has gained impetus primarily from the need to offset sharply rising labor costs and from the need to adopt previously unused technology in response to changing market conditions and changed social attitudes. Our steel industry's adoption of the basic oxygen process, much of which has taken place since 1965, is a good example of such modernization. While the basic oxygen process has been commercially viable for many years and was adopted in foreign mills well before it was here, changed world steel market conditions made it essential for the survival of U.S. mills by the mid-1960's.

While, as Dr. Terborgh indicates, it is true that it is difficult to defend the thesis of an acceleration in technological development in the 1960's, U.S. industry does seem to face the requirement for a substantial catch-up modernization effort in the manner of the steel example.

Second, pollution control has made a significant claim on corporate financial resources in recent years. Dr. Terborgh's paper points out that six per cent of all business capital expenditures have recently been for anti-pollution equipment. The McGraw Hill survey of May of this year now reports that 8.2 per cent of all business capital expenditures in 1972 was for this purpose. For example, a reported 23 per cent of paper industry investment and a reported 12 per cent of steel industry investment were for pollution control in 1972.

The growth of pollution abatement regulations has substantially contributed to our current shortage dilemma and increased the necessity for new investment by rendering unusable many economically marginal facilities. These facilities constituted the overload capacity in past peak business periods, but now cannot operate because of the more stringent pollution requirements. I believe this is one reason why we ran up against capacity constraints surprisingly early in this latest upswing in our economy.

A major element in our battle to diminish inflation must be to expand the supply of basic materials, and this requires elimination of bottlenecks in the capacity to produce these materials. The accompanying chart shows the FRB major materials capacity and output series. This series is not industrially complete, but as it includes such strategic industries as paper, raw steel and petroleum refining, I believe it is a good window through which insight on basic materials industry capacity in general can be gained.

Capacity in this group of industries has grown about 40 per cent since 1965. However, our evidence suggests that the rate of capacity growth has slackened in recent years, especially since 1971. The investment patterns in these industries tend to be similar to the pattern illustrated in Dr. Terborgh's paper. Thus, the intense investment

effort he documented apparently has not provided the required capacity expansion. It seems safe to say at any rate, that our investment effort since 1965 has been, although intensified, inadequate.

One reason that we may not have had as much expansion in capacity as desirable was the slump in corporate profits from 1966 to 1970. As the accompanying chart indicates, the rate of return for all manufacturing fell from over 13.4 per cent in 1966 to 9.7 per cent in 1971. The rebound in profits that we have seen recently is essential for financing an increase in productive capacity. While some have criticized the oil industry for its present high profits, those same profits if channeled back into investment for capacity expansion will go a long way toward solving our energy problem.

Another factor which had a constraining effect on capacity expansion was the relative overvaluation of the dollar in the postwar period. Because the dollar was overvalued, foreign competitors were able to penetrate our domestic market more than they should have been able to and we ourselves were priced out of some overseas markets. As a result in some industries we were not able to expand output and capacity as much as we otherwise would have.

I believe that if we are going to solve the energy problem and reduce inflation it will not be enough just to maintain the current intensity of our

investment effort -- we will need a far greater investment boom in the 70's and 80's than we have had in recent years.

In order to do this it will be necessary for us to increase the share of investment in our national product. I do not want to explore now the detailed mechanism by which this might be done, although I do have some tentative ideas I would like to mention.

In 1972 business fixed investment accounted for approximately 10.6 per cent of our gross national product. As the accompanying chart indicates, the comparable figure for Japan and West Germany are 21.2 per cent and 21.7 per cent respectively. Furthermore, while, as Dr. Terborgh pointed out, business investment as a share of total corporate product increased substantially from 1962 to 1972, this 10.6 per cent share of real U.S. GNP was only a slight increase from the 1962 share - 9.4 per cent.

As the attached table indicates, the biggest increase in the share of real GNP during this 10-year period was for personal consumption and the next largest was for State and local governments. Real consumption as a share of GNP increased from 63.9 per cent in 1962 to 66.6 per cent in 1972. State and local expenditures as a share of real GNP increased from 9.0 per cent to 10.4 per cent. A substantial drop in real defense expenditures from 9.2 per cent to 5.5 per cent of GNP

allowed the Federal government to decrease its overall share by about 3.6 percentage points.

In looking around for areas from which resources can be shifted into investment, it seems clear that a large part would have to come from personal consumption; although I think we should also take a long, hard look at the increase in State and local expenditures, as well as Federal non-defense expenditures.

I want to emphasize that, while we need to cut consumption as a share of GNP, in absolute terms consumption would continue to grow. The productivity gains the increased investment would yield would mean that we would have a larger national product to work with. This is what all of us should be working towards rather than bickering about maintaining or increasing a certain share of our present 'economic pie'.

The capital boom we need in the 1970's will require substantial investment in plant as well as in equipment. I am very concerned that rigidities in the construction industry may be the principal bottleneck to the building effort we require. It is time that outmoded and self-serving work rules which restrict efficiency be removed. If we are going to make the investment necessary for developing an independent energy supply we will also need a large highly skilled and highly paid work force in the building industry. Accordingly, we must have wider

access to construction jobs for people of all racial groups - both men and women.

Because of the cyclical nature of their industry, construction labor leaders have traditionally been less than enthusiastic about dramatic increases in the building trades labor force. However, the kind of investment effort we need to solve the energy crisis should mean a substantial increase in the demand for skilled construction workers for some time to come.

Labor as well as management must come to realize that the economy has to be looked at in a dynamic framework and that the maintenance of outdated work practices is not in their long-run self-interest. They and all Americans will benefit most in an atmosphere of healthy economic growth. Attempts to impose restrictions which inhibit that growth hurt all of us.

Nor are work rules the only impediment to productivity growth in the construction industry. Artificial and unrealistic building codes which act as a stumbling block to efficiency also need to be revised.

The construction industry is not the only one in which artificial restrictions are a problem. Our goals for the 1970's would be greatly facilitated by improvements in the efficiency of our transportation and distribution system. It seems hardly necessary to rehash the long sad story of how restrictive labor and regulatory practices have hamstrung the growth of efficiency in our railroads.

One additional comment regarding inflation and its role in the current situation appears useful here. By definition inflation is a failure of physical production to keep up with current dollar expenditures. Our traditional short-run solution to this problem has been to slow the growth of current expenditures whether by fiscal policy or monetary policy, or both. But we must also seek to stimulate growth of productive capacity, even though it may take some time for this effort to bear fruit. Thus, the near-decade of inflation behind us and the lively possibility of recurrent inflation through much of the 1970's are loud alarms telling us to increase our ability to produce goods and services.

In summary, while there has been substantial capital investment in recent years, I foresee the need for and predict the development of much more in the immediate future. We will need to devote a larger share of our national income to investment in an attempt to bring inflation under better control as well as to solve our energy problems. In order to make this increase in investment possible, we may have to cut back on the share of GNP going to consumption, although in absolute terms consumption would continue to grow. The increases in government non-defense expenditures, particularly in the State and local sector, have to be carefully questioned against the need for more productive capacity. Restrictive work rules and entry requirements as well as unrealistic building codes and practices of both regulators and industry which serve to restrict productivity growth should be eliminated.

TABLE I

Real Share of Major Components of GNP
1962-1972 1/

	Consumption	Bus. Fixed Inv.	Prod. Durable Equip.	Bus. Structures
1962	63.9	9.4	6.0	3.4
1963	64.1	9.4	6.2	3.2
1964	64.3	9.9	6.7	3.3
1965	64.4	10.7	7.1	3.6
1966	63.5	11.3	7.6	3.6
1967	63.7	10.8	7.5	3.3
1968	64.1	10.7	7.4	3.3
1969	64.6	11.0	7.7	3.3
1970	66.1	10.7	7.4	3.3
1971	66.6	10.2	7.2	3.0
1972	66.6	10.6	7.7	2.9

	All Gov't.	Federal Gov't.	Federal Defense	State & Local Gov't.
1962	20.3	11.3	9.2	9.0
1963	19.9	10.8	8.5	9.1
1964	19.1	10.0	7.7	9.2
1965	18.6	9.4	7.0	9.2
1966	19.2	9.9	7.8	9.3
1967	20.8	11.1	8.8	9.7
1968	20.9	11.1	8.8	9.8
1969	20.1	10.1	8.0	10.0
1970	19.3	8.9	6.9	10.4
1971	18.6	8.2	6.0	10.4
1972	18.1	7.7	5.5	10.4

1/ Shares computed for all sectors in 1958 dollars. Will not add to 100.0 because residential structures inventory changes, net exports are not included.

Source: National Income Accounts

Chart I

MAJOR MATERIALS

SEASONALLY ADJUSTED, QUARTERLY

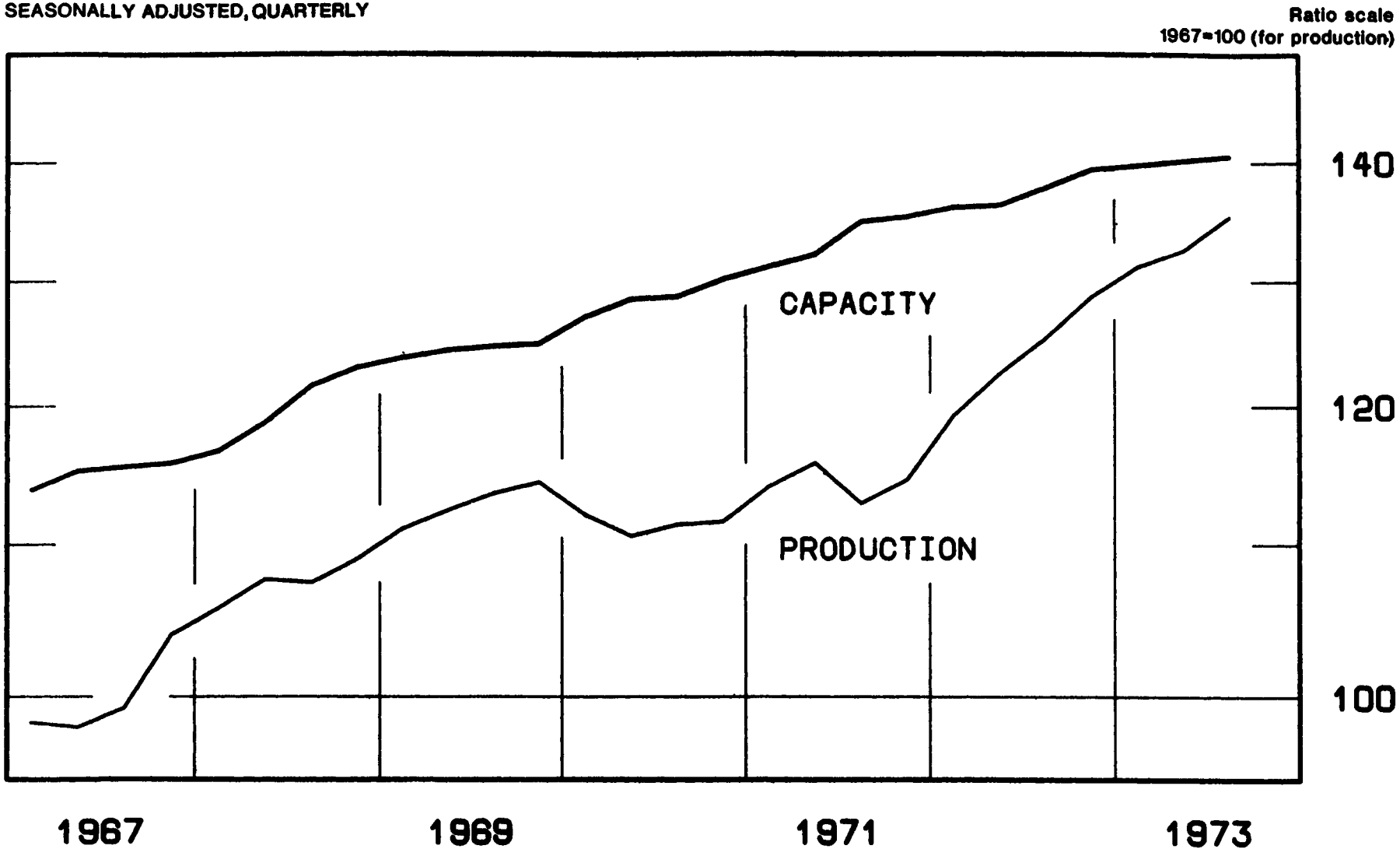
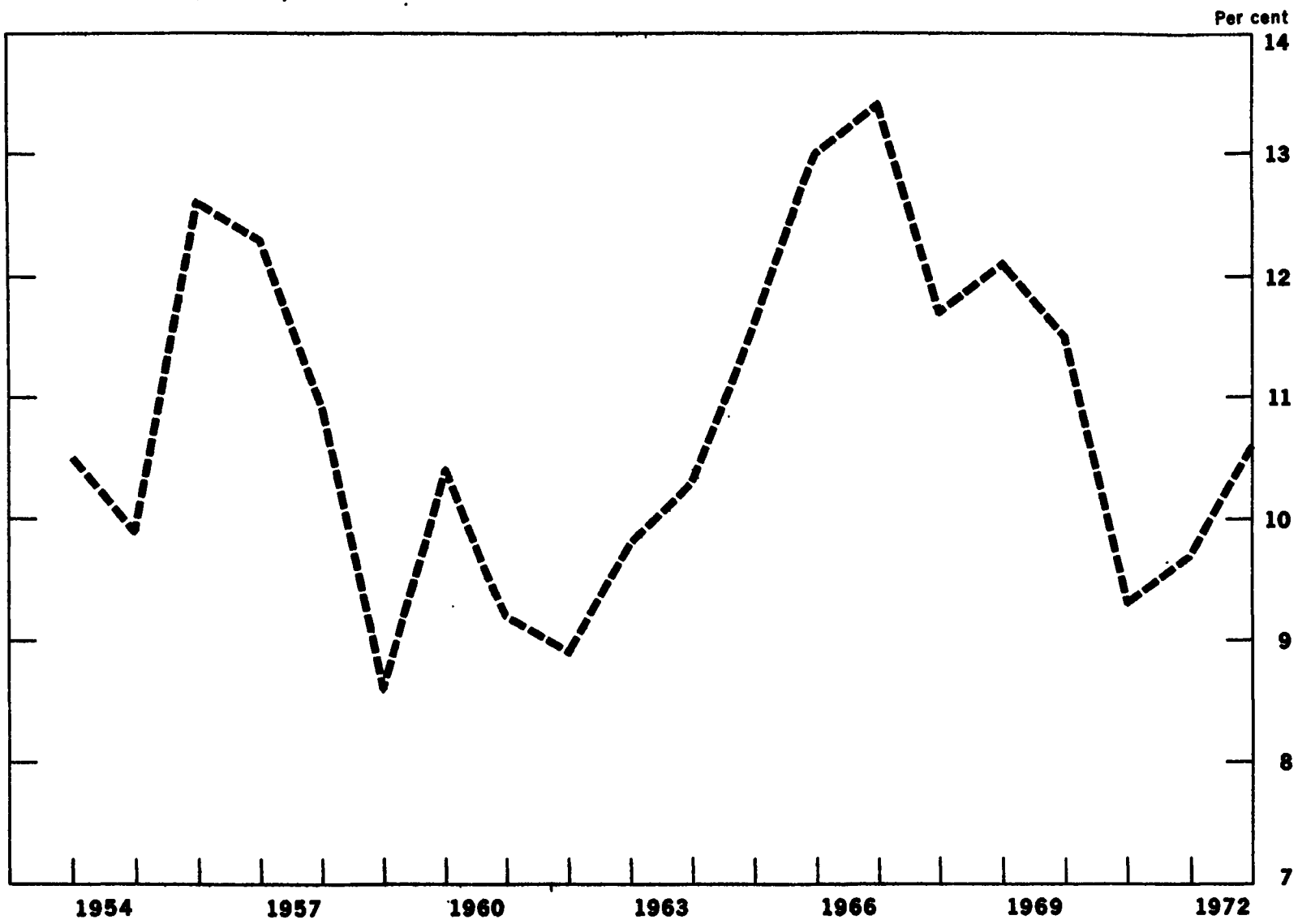


Chart II

AVERAGE ANNUAL RATES OF RETURN
FOR ALL MANUFACTURING, 1953–1972 1/

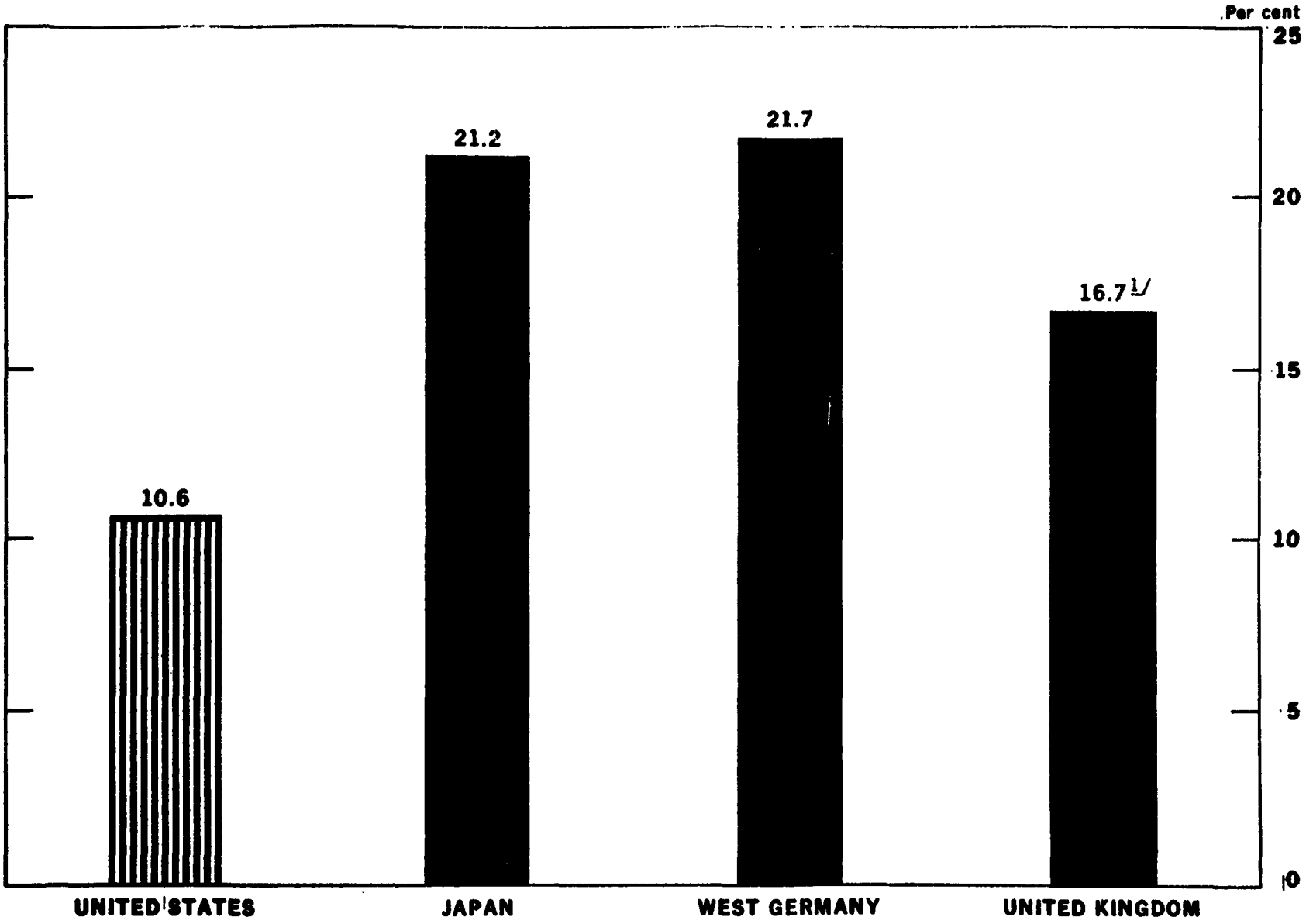


1/ Rates of return refer to net income/equity capital.

Source: The Economic Report of the President, 1973.

Chart III

BUSINESS FIXED INVESTMENT AS A PERCENTAGE OF GNP IN 1972



1/ Estimated

Source: Main Economic Indicators OECD August 1973