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FOREIGN INVESTMENT BY U.S. CORPORATIONS AS A WAY OF REDUCING RISK

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"Surplus capital...will be used for the purpose of increasing...profits

by exporting capital abroad to the backward countries. In these backward

countries profits are usually high, for capital is scarce, the price of

land is relatively low, wages are low, raw materials are cheap."

V. I. Lenin, Imperialism, the Highest State of Capitalism (New York:

International Publishers), p. 63.

I

The notion that businessmen invest inorder to increase profits

still influences many economists analyzing investment in foreign countries.

MacDougall, for example, in 1960 analyzed the impact on Australia of

foreign investment from Britain by assuming that "...British investors,

if left to their own devices, equate the returns on home and foregin

investments."[1] Kindleberger, in the late 1960's, considered "...the

terrible possibility... that businessmen actually do as they say they

do and invest where markets are, without sufficiently considering long-

run profits margins."[2] In general, however, Kindleberger seems to feel

investment decisions are "...presumably made on the basis of fine cal-

culations of costs and prospective profits."[3] Aharoni, on the other

hand, concluded "...investors first wanted to avoid loss (both of

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[1]G. D. A. MacDougall, "The Benefits and Costs of Private Invest-
ment from Abroad: A Theoretical Approach," reprinted in Readings in
International Economics, ed. Richard E. Caves and Harry G. Johnson
(Homewood, Illinois: Richard D. Irwin, 1968), p. 174.

[2]Charles P. Kindleberger, American Business Abroad (New Haven:
Yale University Press paperback, 1969), p. 9.

[3]Ibid., p. 17

capital and management time) and uncertainty. Therefore, they were not attracted by an inducement that is a function of profits."[1]

If firms were maximizing profits, then we would expect the observed profit rate to be greater on foreign investments for two reasons. First, if firms face the same linear homogeneous production function at home and overseas and if the capital-labor ratio is higher in the U.S., then equating the marginal productivity of capital in the two markets implies a lower average rate of return in the U.S. Second, it is frequently asserted that the risks on foreign investment exceed the risks on domestic investment, and so it is argued foreign profit rates should exceed domestic profit rates.

Reported average profits on overseas investment by U.S. manufacturing firms are about the same or perhaps even slightly less than on domestic investment. While the return on foreign manufacturing investments slightly exceeded that on domestic investments in several recent years (1959, 1960, 1961, 1962, 1963, and 1969), over the decade the yield on domestic manufacturing investments averaged 12.4 percent as compared to 11.8 percent on direct foreign manufacturing investments.[2] Those who believe firms are maximizing profits explain these data in one of three ways: (1) firms maximize expected long-run profits, and

[1]Aharoni, The Foreign Investment Decision Process, p. 235. See also Robert Hellawell, "United States Income Taxation and Less Developed Countries: A Critical Appraisal," Columbia Law Review (December 1966).

[2]Survey of Current Business (October 1970) pp. 32, 33. In 1970 earnings in manufacturing declined to about 10 percent in the U.S. and to about 12 percent on U.S. foreign investments. Survey of Current Business (October 1971) p. 31.

we only observe actual short-run profits; (2) by manipulating "transfer prices" among subsidiaries in various countries, international firms are able to report their largest profits where the marginal tax rates are lowest;[1,2] to explain the observed data, this argument requires that the marginal tax rate be lower in the U.S. than in the rest of the world; and (3) international firms are able to avoid completely reporting some of their foreign profits.[3]

A second major empirical observation is that within the same industry there is investment abroad by U.S. firms at the same time that foreign firms are investing in the U.S. As Aliber put it, "the test of a theory of foreign investment is its ability to explain investment crossflows--why foreign firms invest in the United States in those industries in which

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[1] Raymond Vernon, Sovereignty at Bay (New York: Basic Books, 1971), pp. 154, 268, 276.

[2] The U.S. tax credit allowed for taxes to foreign government only partially eliminates the incentive to show profits in countries with lower tax rates than the U.S. Robert Hellawell, "United States Income Taxation and Less Developed Countries: A Critical Appraisal," Columbia Law Review, Vol. 66 (December 1966) pp. 1393-1422.

[3] For a discussion of possible ways using differences in national tax treatment of depreciation, see Walter A. Slowinski and Thomas M. Haderlein, "United States Taxation of Foreign Income: The Increasing Role of the Foreign Tax Credit," International Trade, Investment, and Organization, ed. Wayne R. LaFave and Peter Hay (Urbana: University of Illinois Press, 1967). I owe this reference to Robert Hudec.

U.S. firms invest abroad."[1] Probably the major theoretic explanation for

this two-way investment flow assumes that firms are partial monopolists

maximizing profits. This theory, developed by Stephen Hymer,[2] says that,

in Kindleberger's words, "for direct investment to thrive there must be

some imperfection in markets for goods or factors, including among the

latter technology, or some interference in competition by governments or

by firms, which separate markets."[3] Aliber has recently offered another

explanation of foreign investment, which stresses the differences in

capitalization rates of firms in different countries because the financial

markets in various countries apply different discount rates to the un-

certainty about future exchange rates.[4] This theory has not, however,

been empirically tested and has difficulty in explaining new two-way

investment.

Both the two-way flow of investment and the lower rate of profit

in foreign investment could be explained by the theory of optimum

portfolio choice which stresses that a low (or negative) correlation

between foreign and domestic risks can make foreign investment attractive

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[1] Robert Z. Aliber, "A Theory of Direct Foreign Investment," The International Corporation, ed. Charles P. Kindleberger (Cambridge, Mass.: M.I.T. Press, 1970), p. 32.

[2] Stephen Hymer, "The International Operations of National Firms: A Study of Direct Investment," (doctoral dissertation, Cambridge, Mass., M.I.T., 1960).

[3] Charles P. Kindleberger, op. cit., p. 13. Kindleberger presents Hymer's theory on pages 11-33.

[4] Aliber, op. cit., esp. pp. 28-34.

even if its risk is higher and its rate of return is lower.[1] While this

theory has recently been applied to long-term international portfolio

investment[2] and to international trade,[3] it has not been applied by

economists to direct corporate investment. For example, although Vernon

says that international firms encounter "...the pervasive presence of

ignorance and uncertainty in the decision-making process,"[4] he feels

"...the portfolio investment analogy was not very apt."[5]

Nor do those economists who stress the need for large firms to

reduce uncertainty deal with overseas investment. Galbraith, for example,

ignores foreign investment as a possible way for the "technostructure"

to reduce uncertainty over earnings and sales.[6] On the other hand,

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[1]Let x be the variable--such as sales or profits--on which management
focuses. Let p be the proportion of x in country 1 and 1-p the proportion
in country 2. Let r be the correlation between x in country 1 and x in
country 2. Let v^2_{1+2} be the total variance of x, v^2_1 the
variance of x in country 1, v^2_2 be the variance of x in country 2. Then:
$v^2_{1+2} = p^2 v^2_1 + 2p(1-p)r\ v_1 v_2 + (1-p)^2 v^2_2$. For example, suppose the
variance of sales is 9 in one country and 16 in another country and the
correlation between sales in the two countries is .25; then having
half of a firm's sales in each country gives a variance for the firm's
worldwide sales of 7 3/4.

[2]Herbert G. Grubel, "International Diversified Portfolios: Welfare
Gains and Capital Flows," American Economic Review, Vol. 58 (December 1968),
pp. 1299-1314. Norman C. Miller and Marina V. N. Whitman, "A Mean-Variance
Analysis of United States Long-Term Portfolio Foreign Investment," Quarterly
Journal of Economics, Vol. 84 (May 1970), pp. 175-196. Haim Levy and
Marshall Sarnat, "International Diversification of Investment Portfolios,"
American Economic Review (September 1970), pp. 668-675.

[3]William C. Brainard and Richard N. Cooper, "Uncertainty and Diversi-
fication in International Trade," Studies in Agricultural Economics, Trade
and Development, Vol. 8 (1968).

[4]Vernon, op. cit., p. 113.

[5]Ibid., p. 153.

[6]John Kenneth Galbraith, The New Industrial State (New York:
Houghton Mifflin Co., 1967), esp. chs. 3 and 20.

the president of a large U.S. firm with plants in 33 countries said,

"we know...that our worldwide operations cushion the impact on the

corporation as a whole of a recession in any one country. This has,

in effect, given our total operations more stability..."[1]

Using a sample of 88 large firms during the period 1950-1964,

Fisher and Hall found that firms with larger fluctuations in their

profits[2] have larger average profit rates. If one accepts the notion

that management looks at both fluctuations and at the rate of return

in choosing investments and that different managements have different

trade-offs between risk and return, then one could explain with one theory

(1) two-way foreign investment in the same industry, (2) lower observed

rates of return on foreign investment than on domestic investment, and

(3) differences among industries and among firms in an industry as to

the extent of foreign investment.[3]

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[1]Testimony of James W. McKee, Jr., Hearings before the Subcommittee on Foreign Economic Policy of the Joint Economic Committee, July 27-30, 1970, (Washington: U.S. Government Printing Office, 1970), p. 767.

[2]Fluctuations are measured by the standard deviation of the deviations of observed rate of return from the rate of return predicted by a fitted trend. I. N. Fisher and G. R. Hall, "Risk and Corporate Rates of Return," Quarterly Journal of Economics, Vol. 83 (February 1969), pp. 79-92.

[3]Vernon, for example, finds that only 187 of the Fortune "500 firms" have at least six foreign manufacturing subsidiaries. These 187 firms fall into 23 SIC industries. In some industries almost every firm is "international", and in other industries only a few firms are. The proportion of industry sales accounted for by Vernon's 187 "international" firms ranges from 85 percent to 4 percent.

In the next part of this paper I present some empirical results
on the extent to which overseas operations reduced the amount of risk
faced by large U.S. corporations in the 1960's. The results suggest
that in some industries overseas activities reduced the firm's risk.
While the statistical results are not overwhelming, I do not know of
any statistical studies, at the firm level, which test any of the
competing theories of direct foreign investment. The third part of
the paper presents evidence that there is less than a perfect cor-
relation among the gross national products in the U.S. and the major
centers of U.S. foreign investment. The final section is a brief
conclusion.

II

The major data problem is measuring the extent to which U.S.
firms have overseas operations. I use two alternative measures.
Bruck and Lees examined the Fortune 500 largest industrial firms
for 1965; using mainly company reports, they examined each firm's
foreign operations in terms of sales, profits, assets, employment,
and production and then assigned a single ranking to each of 335 firms;
they were unable to collect enough data to rank the remaining 165
firms.[1] From the point of view of testing a diversification model,

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[1] Nicholas K. Bruck and Francis A. Lees, Foreign Investment,
Capital Controls, and the Balance of Payments, New York University
Institute of Finance Bulletin No. 48-49 (April 1968).

their data have the disadvantage of viewing the world as having only two areas: the U.S. and the rest of the world. Thus one cannot test, with their data, the presumption that it makes a difference whether a firm with half its operations in the U.S. has operations in only one foreign country or in many foreign countries. I therefore also used the number of foreign countries in which in 1967 there was a manufacturing subsidary owned by one of the 1963 Fortune 500 or the 1964 Fortune 500[1].

The two major conceptual problems are identifying the variable that management wishes to maximize and measuring the risk attached to this variable. Finding inconclusive the discussion on whether management maximizes sales or profits after taxes, I examine both.[2] Following Fisher and Hall, I use as one measure of risk the standard deviation of the deviations around a fitted trend line,[3] which I call the standard error. I also measure risk by the coefficient of variation: the standard deviation of the observations divided by their average value.

I examine both the nine year period centered around 1965 (1961-1969) and the five year period centered around 1965 (1963-1967).

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[1] These unpublished data were kindly made available to me by the Harvard Multinational Enterprise Project.

[2] Data on annual sales and annual profits after taxes are from Moody's and Standard and Poor.

[3] Let x_t = sales or profits in year t and t = year t. Then the trend is computed by least-squares estimation of $\log x_t = a + t \log (1 + b)$.
Those 33 companies having occassional negative profits during the period are therefore omitted from the sample.

I follow the allocation by Bruck and Lees of each company to one of the 42 industries based on the 3 digit SIC code. I then limited my study to those 26 industries which have at least five firms. I use 25 dummy variables to identify these industries, which are listed in Table I. On the conjecture that a firm can increase its stability by producing many products, I use the product diversification index of the Harvard Multinational Enterprise Project. This index is the number of 5 digit SIC categories produced in 1966 by each company. Finally, I use as an independent variable the size of the company, measured as either the average annual sales or the average annual profits, during the period.

In summary, I conjecture that the stability of a company's profits or sales (1) is positively related to the extent of its foreign activities, the number of products it produces, and its size, and (2) depends on the industry to which it belongs. Data limitations reduce my sample size to 233 firms. Tables 2 and 3 give the results of ordinary least squares regressions for 1961-1969 and 1963-1967 for all variables except the dummy variables.

Since I look at two time periods, two measures of risk, and both sales and profits, there are 8 possible dependent variables. For each dependent variable there are two measures of foreign investment: the number of countries and the Bruck and Lees ranking of overseas activity. The 16 regressions each explain about 20-30 percent of the variation in the dependent variable. Regressions (3) and (4) for 1961-1969 are

Table I

Industry	SIC Number	Number of Firms in Sample
(1)	(2)	(3)
Meat products	201	5
Dairy products	202	7
Canning fruits and vegetables	203	9
Grain mill products	204	6
Bakery products	205	5
Alcoholic beverages (excluding soft drinks)	208	5
Textile mill products	221	12
Paper and allied products	262	14
Chemicals	281	20
Drugs	283	13
Soaps, detergents, and cosmetics	284	6
Petroleum refining	291	21
Glass and glass products	321	5
Concrete, gypsum, and asbestos	326	5
Steel works and mills	331	15
Nonferrous metals	333	12
Miscellaneous fabricated Metal products	349	5
Farm and construction machinery	352	11
Metal working machinery	354	6
Office machines and computers	357	5
Electrical equipment and apparatus	361	9
Household appliances	362	5

Table 1 continued:

Industry (1)	SIC Number (2)	Number of Firms in Sample (3)
Communications equipment	366	8
Motor Vehicles and parts	371	6
Aircraft and parts	372	12
Optical instruments	383	6
Total above:		233

Table 2

1961-1969

Profits	Number of countries (1)	Overseas Activity (2)	Number of Products (3)	Size (4)	$\bar{R}^2$ (5)	F (6)
Coefficient of Variation						
(1)	-.0071 (-3.56)	—	.0002 (.23)	-.086 (-1.00)	.32	3.37
(2)	—	-.0002 (-2.06)	-.0005 (-.74)	-.165 (-1.97)	.29	2.96
Standard error						
(3)	-.0007 (-.15)	— —	-.0029 (-1.74)	-.058 (-.29)	.19 .	1.67*
(4)	—	-.0003 (-1.64)	-.0025 (-1.57)	-.026 (-.14)	.20	1.79*
Sales						
Coefficient of Variation						
(5)	-.003 (-1.40)	—	-.0008 (-.98)	.015 (1.85)	.22	2.02
(6)	—	.0000 (-.37)	-.0011 (-1.39)	.012 (1.48)	.21	1.93
Standard error						
(7)	-.0021 (-1.80)	—	-.0005 (-1.18)	.013 (2.94)	.28	2.77
(8)	—	.0000 (-.95)	-.0007 (-1.63)	.011 (2.56)	.27	2.66

*Significant at 2 percent.

Table 3

<u>1963-1967</u>

Profits	Number Of countries (1)	Overseas Activity (2)	Number of products (3)	Size (4)	$\bar{R}^2$ (5)	F (6)
Coefficient of Variation						
(1)	-.0046 (-2.69)	-	.0007 (1.16)	-.169 (-2.39)	.31	3.34
(2)	-	-.0001 (-1.68)	.0003 (.53)	-.217 (-3.17)	.30	3.12
Standard error						
(3)	-.0006 (-.29)	-	-.0008 (-1.01)	-.049 (-.56)	.28	2.86
(4)	-	.0000 (-.44)	-.0008 (-1.08)	-.053 (-.63)	.28	2.86
Sales						
Coefficient of Variation						
(5)	-.0021 (-1.32)	-	-.0008 (-1.36)	.019 (3.26)	.28	2.85
(6)	-	.000 (-.40)	-.001 (-1.78)	.017 (3.00)	.28	2.77
Standard error						
(7)	-.0015 (-1.41)	-	-.0007 (-1.70)	.020 (4.94)	.29	3.01
(8)	-	-.0001 (-1.31)	-.0008 (-2.00)	.018 (4.87)	.29	3.00

significant at the 2 percent level, and the other 14 regressions are
significant at the 1 percent level.

Either measure of foreign investment—the number of countries
[column (1)] or the Bruck and Lees ranking [column (2)]—has the
predicted negative coefficient in all cases, but the coefficient for the
number of countries has the greater t-ratio (shown in parentheses) in
6 of the 8 cases: all except the standard of error of profits for
1961-1969 and for 1963-67. In these six cases the significance level
fo the coefficient for the number of countries ranges between 16 percent
and 7 percent except for the coefficient of variation for profits,
where the significance level is 1 percent.

The coefficient for the number of products—column (3)—has the
predicted negative value in 13 out of the 16 regressions. The coefficient
for the size of the firm—column (4)— has the predicted negative value
for the 8 regressions for profits but is unexpectedly positive for the
8 regressions for sales.

When viewed in isolation , overseas activities may well be more
risky than domestic activities. The regressions are consistent
with the view that overseas investment increased the worldwide stability
of large U.S. firms in the 1960's.

III

The analysis in the preceding section assumed that foreign invest-
ment led to greater stability. The regressions are equally consistent
with the other stream of causality: more stable firms have more foreign
investment. A recent study suggests that U.S. firms with higher vari-
ability in earnings pay out larger dividends in order that management not
be fired by dissident stockholders[1]; firms with more retained earnings
could undertake more foreign investment. To make a judgment on these
two alternative interpretations of the regression results, I examined
the correlation in the economies of various countries.

While I would have liked data on sales and profits for the 26
industries in each country, I only examined GNP in current prices in
Australia, Brazil, Canada, France, Germany, and U.K. These six countries
accounted for 70 percent of the book value of all foreign U.S. investments
in manufacturing in 1970.[2] I converted GNP in local currency and current
prices to dollars, on the assumption that U.S. firms use dollars as the
unit of account. Occasional large devaluations of foreign exchange
rates are more than offset by inflation and by growth in real GNP in
each of these countries, so that in the 1960's the dollar value of

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[1] Henry G. Grabowski and Dennis C. Mueller, "Managerial and
Stockholder Welfare Models of Firm Expenditures," Review of Economics
and Statistics (February 1972), p. 20.

[2] Survey of Current Business (October 1971), p. 33.

foreign GNP increased in almost every year. I therefore estimated the
trend value of the aggregate dollar GNP of these six countries and the
U.S. from 1961-1969; the trend in the annual rate of growth for these seven
countries is 7.4 percent. I then calculate the deviations from
this trend for each country for each year. For France
the actual rate of growth always exceeded 7.4 percent; for the United
Kingdom the acutal rate was always less than 7.4 percent; for the
other five countries the actual rate was sometimes more than 7.4 percent
and sometimes less. I then calculated the correlations among these
deviations. The results are shown in Table 4. For a company whose
main orientation is the U.S., deviations from the aggregate trend of
GNP are negatively correlated in Australia and the U.K. and less than
1.0 for the other four countries. To the extent that industry sales or
profits are correlated with GNP, this evidence supports the view that
overseas investment leads to more stability about the trend.

Table 4

Correlations of Deviations from Average Aggregate GNP,
1961-1969

	U.S.	Australia	Brazil	Canada	U.K	Germany	France
U.S.	1.0	-.71	.64	.64	-.55	.44	.28
Australia		1.0	-.95	-.88	.85	-.36	-.75
Brazil			1.0	.87	-.82	.47	.71
Canada				1.0	-.84	.60	.84
U.K.					1.0	-.33	-.73
Germany						1.0	.30
France							1.0

Source: GNP in current prices and in national currency and exchange
rates from International Financial Statistics (International
Monetary Fund).

IV

The finding the large U.S. corporations with more extensive
overseas activities tended to have smaller fluctuations in the 1960's
does not allow one to conclude that U.S. firms invested overseas in
order to reduce their risks. This conclusion would be no more
warranted than if one were to conclude that firms invest overseas
in order to increase profits simply because one found that profits
were larger for firms with more overseas activity. Reducing risk
(or increasing profits) may be the unintended result of corporation
actions taken for other reasons.[1]

A judgment on the motivation for foreign investment is important
because economists frequently deduce the impact of foreign investment
from an assumption concerning motivation. As Caves put it, "in the
absence of externalities and market imperfections, the case for free
movement of direct investment as a means of maximizing world welfare
is simply the case for allowing any factor or product to flow towards
locations where it has the greatest excess of marginal value over

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[1]Most economists tend to assume that large firms are motivated in
ways analogous to individuals, though economists are at a comparative
disadvantage in explaining individuals' motivation. As the psychologist
David McClelland put it, Freud "...destroyed forever (except, perhaps,
in the minds of economic theorists) the notion that motives are rational
or can be rationally inferred from action." David C. McClelland, The
Achieving Society (New York: The Free Press, 1961), p. 38.

marginal cost."[1] Caves, of course, stresses that much international

investment seems to depend on market imperfections even if one assumes

firms are maximizing profits. The recent Presidential Commission seems

to ignore this qualification in saying "...the international investment

process may be viewed as the movement of productive resources from areas

of lesser to areas of greater relative opportunities, thereby improving

the world's allocation of resources to the mutual benefit of parent, host,

and other countries."[2]

If further research should support the view that a major reason

for investment in foreign countries is in order to reduce the firm's

risks, then one might be even more skeptical of the mutual benefit

of a free international movement of corporate capital. While each firm

may feel it is reducing its own risk through foreign investment, the

actions of all the international firms may increase the instability of

some national economies and reduce the instability of others.

Finally, a judgement on firms' motivation is important for those

countries which seek to attract foreign investment. Foreign countries,

especially developing countries, advertise incentive schemes designed

to increase the foreign firm's profits and also emphasize the stability

of the country. My analysis suggests a country could attract foreign

investment by emphasizing the low (or negative) correlation of its

fluctuations with those of other countries. Rather than claiming for

example, that workers never strike, a foreign government could claim

they never strike in years when workers in other countries are on strike.

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[1]Richard E. Caves, "International Corporations: The Industrial
Economics of Foreign Investment," *Economica* (February 1971), p. 22.

[2]*United States International Economic Policy in an Interdependent
World* (Washington, D.C., July 1971), p. 173.