

**CORPORATE FINANCE POLICIES AND  
FOREIGN EXCHANGE RATE VARIATIONS—  
AN ANALYTICAL COMPARISON**

*Working Paper No. 51*

by

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## BACKGROUND

This paper represents an attempt to stimulate discussion of issues in financial decision making which arise when business firms begin to operate simultaneously in different countries. The basic goal is to extend and expand the theory which has been developed for domestic operations to problems inherent in the management of international corporations.

## ABSTRACT

The purpose of this paper is to analyze critically the concepts which are the foundation of current financial practices in international operations. The paper indicates alternative directions in which financial policy should develop in order to cope better with the problems posed by exchange rate changes.



### An Illustration

In 1962 a U. S. -based automobile manufacturing company with already extensive foreign operations began to expand and restructure its subsidiaries in the European Economic Community (EEC). The corporation decided to concentrate most of its engine production in a new plant in Strasbourg, France. This location was chosen because of shipping economies and in response to considerable inducements offered by the French government to export-oriented industries which were willing to settle in that part of the country. The company had no other facilities in France; however, it owned very large manufacturing operations in Germany and smaller ones in Belgium where vehicles were assembled. The entire output of the French subsidiary was sold to these two plants. The automobiles were then marketed throughout the Common Market and beyond, although the market share of the company in France was negligible.

After the political turmoil in France during May 1968, financial management executives at corporate headquarters in Detroit became increasingly concerned about the weakness of the French franc. As a result, the French subsidiary was ordered to keep working balances to an absolute minimum. By early 1969 the outlook for the French franc had not improved. The new government had steadfastly refused to devalue. Instead it had put stringent restrictions on the transfer of francs out of the country (management in Detroit congratulated itself for having moved its excess working balances just in time), but the threat of devaluation was still very much in the cards. Faced with the probability of a 10 to 20 per cent devaluation of the franc, financial planners viewed with concern the possibility that consolidated earnings of the corporation might be reduced by anywhere from \$2 million to \$8 million for 1969. Therefore, various "hedging" alternatives were prepared for the top corporate finance committee to consider. In one way or another all of these proposals involved substantial cost.

A member of the corporate finance committee was contemplating these alternatives before the meeting when a recent visit to Strasbourg came to his mind. There, the resident general manager had argued for expansion plans on the grounds that the upcoming devaluation of the franc would boost returns on his operations by over 20 per cent. At this point, the finance committee member began to wonder about some basic inconsistencies in his company's international finance policy.

The Problem -- Its Scope and Significance

Similar situations have troubled financial executives of international corporations for a long time. The underlying paradox is always there: the very same economic event, in this case an anticipated devaluation, calls for increased investment in the operation while it simultaneously compels management to engage in costly defensive strategies.

The basic theme of this problem has many variations; specific circumstances of individual companies differ as does the magnitude or direction of the exchange rate changes involved. Nevertheless, the fundamental dichotomy of inconsistent policies is always present.

The problem arises, in one form or another, whenever a company has operations in more than one country and the rate of exchange between the respective currencies is expected to change. The extent to which corporate assets are subject to these problems has been well documented in studies of the dimensions and growth patterns of multinational investment; the magnitude of this problem needs no further comment.<sup>1/</sup>

Likewise, the occurrence of exchange rate changes in the post-war years has been minutely documented in International Monetary Fund (IMF) statistics; the incidence of changes has been frequent and their

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<sup>1</sup>See, for example, Rainer Hellmann, The Challenge to U. S. Dominance of the International Corporation (New York, 1970).

magnitude sometimes very large. The outlook for the international monetary system foreshadows an increased frequency -- if not magnitude -- of situations such as those presented in the above case example.

During the past few years the subject of corporate finance policy with respect to exchange rate changes has received increased attention. Seminars and workshops have been organized by universities and management education organizations to study these changes.<sup>2/</sup> Consultants and financial institutions have begun to offer special advisory services to corporate treasurers.<sup>3/</sup> In addition, academic writers have begun to pay more attention to these problems. Formerly most articles on this subject were exclusively in the domain of accounting literature, which focused on translation practices. Recently, however, several publications have appeared which bring a new approach to the topic.<sup>4/</sup>

Still, there remains the need for a clear analysis of the reasons behind the apparent contradictions in the international financial policy of

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<sup>2</sup>For example: University of Michigan, Graduate School of Business Administration, Annual Workshop in International Financial Management; or American Management Association Programs.

<sup>3</sup>Morgan Guaranty Trust Company; International Money Management; Brown Brothers, Harriman & Co.; Foreign Exchange Advisory Service. Other organizations provide similar services.

<sup>4</sup>Robert B. Shulman, "Corporate Treatment of Exchange Risk," Journal of International Business Studies, Summer 1970; D. R. Mandich, "Devaluation, Revaluation -- Re-Evaluation?" Management Accounting, August 1970; Bernard A. Lietaer, "Managing Risks in Foreign Exchange," Harvard Business Review, March-April 1970.

many corporations in response to exchange rate changes. This is the purpose of the present paper. Specifically, it will first consider the effect of a devaluation on a subsidiary in terms of the standard cash-flow analysis framework. Then the policies resulting from the use of current accounting procedures will be retraced, and in the subsequent section an attempt will be made to isolate the core of the issue. Finally, suggestions will be made to indicate the direction in which financial policies should develop to deal adequately with the problems posed by exchange rate changes.<sup>5/</sup>

#### Profitability and Exchange Rate Changes

The problem of the finance committee cited in the introduction serves as a convenient starting point in considering the basic question, "What really happens to the subsidiary when the country in which it operates devalues its currency?" Any change in profitability will depend on the effect of the devaluation on the subsidiary's future revenues and costs. The first caveat, of course, is to distinguish clearly between the cash flows in terms of local currency (LC) and the currency in which the parent company calculates its results: here, the U. S. dollar.<sup>6/</sup>

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<sup>5</sup>There is no intention to suggest specific changes in current accounting practices. Wherever criticism of such practices occurs, it is strictly on the grounds of their use as a basis for international financial policy. The author wishes to thank Mr. T. P. McDermott of Arthur Young & Co. for some very helpful comments.

<sup>6</sup>The analysis abstracts completely from exchange controls; however, they can be included by giving consideration to (a) the time value of the delayed cash flows in the unit of final account, and (b) the return on the unremittable local currency funds.



Any analysis should first consider the expected behavior of LC streams. At this stage the second warning is in order. It is incorrect and utterly misleading simply to depreciate the streams projected before the devaluation in order to arrive at the new dollar equivalents. The fundamental point to grasp is that local currency revenue and cost flows will not follow the pattern projected before the devaluation was anticipated. In fact, after the devaluation these LC flows will develop differences which are systematic and predictable, at least as to the direction which the digression will take. Since postdevaluation LC flows will not duplicate those that would have occurred without the devaluation, a uniform, indiscriminate application of the devaluation percentage to the projected predevaluation flow gives a totally inaccurate picture of the effect that the devaluation will have on the subsidiary.

How, then, will a devaluation affect LC cash flow? It will undoubtedly improve the LC revenues that result from a firm's export sales. The firm may either maintain the former price in terms of foreign currency, thereby increasing its LC receipts by the devaluation percentage, or it may lower the foreign currency price and increase its sales volume. It is true that the firm's revenues may not receive the full benefit of the devaluation because of increased competition from other exporters, but situations in which LC revenues do not benefit to some extent from export sales will be rare. Similarly, firms producing goods that compete with imports in the domestic market should normally

see an improvement in revenues since the devaluation adversely affects foreign competition.

If a firm is producing goods for the domestic market where import competition is not a factor, LC revenues will suffer because demand is likely to decrease. The reason for this decrease is that the firm's customers will have less purchasing power, since imports will usually cost more as will goods which have benefited from the export boom. In addition, austerity measures which the government is likely to reinforce after the devaluation will have their greatest effect on such a firm.

The devaluation will cause a rise in the LC cost of inputs for most firms. Obviously, those companies whose expenses include a high proportion of imported materials will be hardest hit. The price of imported inputs can increase by any percentage up to the full amount of the devaluation rate, although normally it will be somewhat less, the final level depending upon competition. Even firms using primarily domestic inputs will also experience a rise in costs, because the expanding export- and import-competing companies will tend to require increasing amounts of labor, material, and capital. Of course, the extent of the rise in cost of local inputs will largely depend on the employment situation before the devaluation, the effectiveness of the government's austerity program, and the speed with which productive resources can be shifted to different types of production. The reader trained in

international economics will recognize this analysis as a simplified version of the "adjustment process" applied to the individual firm.

In summary, as a result of the devaluation, revenue and cost streams of firms will be altered in different ways, so that the effect on profitability will also vary. No two firms will be affected in exactly the same way by developments in the postdevaluation economy. Some may be better off as a result of the devaluation and some will fare worse, but for a few the net change will be negligible. Note, however, that to this point the analysis is strictly in terms of LC units.

Any final effect of a devaluation on the profits received by the parent company can be computed only after the expected LC revenue and expense streams have been adjusted. The effect is determined by applying the new exchange rate to the predicted net LC profit. After translating the adjusted net LC cash flows into dollars, the final devaluation gain or loss can be determined. The result will depend upon whether the loss arising from the new rate exceeds, equals, or is less than the change in the net LC cash flow. Thus, the outlook for some subsidiaries will actually improve after a devaluation, for some it will deteriorate, while for others the net changes will be close to zero.

A further point must be kept in mind: the analysis was made only in incremental terms. This is important when considering the all too common case where inflation has been rampant. To illustrate,

devaluation induces an increase in costs and prices beyond that rise which would otherwise have occurred.

This point leads to a consideration which is very relevant for the economic rationale of multinational firms. The situation with which this problem of international financial policy was introduced can serve again as an illustration. If the above analysis is applied to the French operation of our multinational automobile manufacturer, it becomes obvious that the profitability of its French subsidiary will be favorably affected by the devaluation, at least in terms of French francs. By the same token, engine production in Germany, for example, will be less profitable relative to the French operation. Clearly, after both a German revaluation and a French devaluation it may well be worthwhile to cut back on this type of operation in Germany and serve markets in third countries entirely through the French plant. The net devaluation loss is restricted to the costs inherent in the expansion and contraction of operations in the two countries. This illustrates one of the key advantages of the multinational corporation: shifts of competitive advantages because of exchange rate realignments do less harm to such corporations than to companies whose operations are confined within national boundaries.

#### Current Accounting Practices and Resulting Financial Policies

A quick survey of corporate practices suggests that current financial policies which are pursued by international corporations as a

response to changes in exchange rates are not based on the incremental profit analysis which is outlined above. The stated objective, however, is the same: to counter any negative effects of a devaluation on subsidiary profits emitted to the parent company. Nevertheless, there is a fundamental difference in the underlying concept of the loss due to exchange rate changes.

The loss with which financial management is currently concerned is perceived as the potential reduction in reported earnings caused by the restatement, or translation, of the LC accounts of a subsidiary into dollar equivalents at a "new" exchange rate. Translation of subsidiary accounts is largely a consequence of (a) centralized management, and (b) the need to publish consolidated statements. While it is conceivable that corporate management could be educated to think simultaneously in ten or twenty currencies, a company cannot expect its present and prospective shareholders, creditors, and governments to have the same ability. In fact, internal revenue authorities and public supervisory bodies such as the Securities and Exchange Commission (SEC) in the United States require by law that foreign subsidiary accounts be translated into domestic currency equivalents.

As a consequence, many international companies make use of the concept of "exposure" as a basis for their international financial policies. This is the net LC asset base, the dollar value of which would shrink when restated at the postdevaluation exchange rate. This

translation loss, which shows up as a reduction on reported earnings in the period during which a devaluation occurred, is what makes financial managers so concerned.

Two factors determine the magnitude of exposure: One is the amount of the LC accounts; the other is the method of translation. The first can obviously be controlled by the firm, to a certain extent at least, and is therefore a policy variable. The second factor is presumably fixed for the individual firm by the prevailing accounting principles which govern the translation of foreign currency accounts.<sup>7/</sup>

The following is a schematic summary of these translation principles in which C denotes the use of the current (postdevaluation) rate, and H the historical rate of exchange.

Cash (LC)	C	Current liabilities (LC)	C
Marketable securities (LC)	C	Long-term liabilities (LC)	C/H
Receivables (LC)	C	Capital stock	H
Inventories	C/H	Preferred stock	H
Fixed assets	H	Retained earnings (residual)	

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<sup>7</sup>For a detailed presentation of current accounting practices see Samuel R. Hepworth, Reporting Foreign Operations (Ann Arbor, Michigan: University of Michigan, Graduate School of Business Administration, Bureau of Business Research, Michigan Business Studies, XII, No. 5, 1966). The example is adapted from p. 68 of this source.

Although these simplified rules may be modified in a few well-defined cases, such as long-term liabilities and receivables, the only item where accounting principles allow a choice in accord with economic realities is the valuation of inventories. For example, when the local selling price of inventories is expected to rise in proportion with the devaluation, the use of the historical rate of exchange is deemed proper.<sup>8/</sup> Exhibit 1 illustrates the effect of these translation principles on projected balance sheets of a foreign subsidiary, first under the assumption of no change, i. e., an exchange rate of 4 LCs = \$1, and then assuming alternatively a devaluation of the foreign currency to 5 LCs = \$1. This example also serves to illustrate the exposure concept:

Financial assets	LC	160	
LC liabilities		<u>60</u>	
Exposure	LC	<u>100</u>	
Predevaluation rate	LC	100	= \$25
Postdevaluation rate	LC	100	= <u>20</u>
Potential foreign exchange loss			<u>\$ 5</u>

The policies which are based on this concept can be divided into two groups. One comprises all those measures by which any positive exposure is reduced, such as decreasing LC monetary assets and/or increasing LC denominated liabilities. The other is hedging the

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<sup>8</sup>Ibid., pp. 16-25.

Exhibit 1

Projected Balance Sheet of Subsidiary Z  
for Dec. 31, 1969

	LCs	4LCs=\$1	5LCs=\$1	LCs	4LCs=\$1	5LCs=\$1
LC financial assets	\$160	\$40	\$32	\$ 60	\$15	\$12
Inventory	20	5	5	280	70	70
Fixed assets (net)	200	50	50	40	10	5
				Retained earnings		
Total	\$380	\$95	\$87	\$380	\$95	\$87



remaining exposure through forward operations in the currency involved.<sup>9/</sup>

Unfortunately, current accounting practices with respect to international operations are too rigid to make the conventional exposure concept very meaningful. Two examples, which are admittedly extremes, may serve to illustrate this point. One assumes that Subsidiary Z is an assembly operation, where imported parts comprise the bulk of the operating costs while the output is sold exclusively in the domestic market of the host country. It is conceivable without too much mind-bending that the devaluation may so completely alter the revenue-cost relationship that the total operation becomes unprofitable, the loss far exceeding that shown when traditional translation methods are applied. The issue becomes even more obvious if one assumes alternatively that Subsidiary Z, having the same balance sheet, sells a large portion of its labor and materials from sources within the country. Obviously, the profitability of the subsidiary increases because of the devaluation, and there is no economic justification for the translation loss shown.

Whenever a method of measuring provides the same answer to situations which are, in effect, different, it must be judged deficient as

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<sup>9</sup>In this case, for example, the company would sell LC 100 in the forward exchange market for a fixed price in terms of dollars. The cost of this transaction is given by the discount prevailing in the forward exchange market, e. g., \$1 = 4.1 LCs. The difference between the current rate and the forward rate of .1 LCs can be expressed as an annual percentage rate.

a basis for financial decision making. Where then are the roots of this deficiency?

Going Concern vs. Exposed Assets

Part of the problem with current accounting methods and consequent financial practices is that they are based on concepts developed to deal with the simple export-import transaction, with its inherent focus on exposed receivables. Under this concept, a given report transaction results in a foreign currency receivable; the value of this asset decreases by the devaluation percentage. The same considerations apply to foreign currency loans where repayment of principal and interest is reduced as a result of a devaluation and so, therefore, is the value of the underlying asset. To illustrate, an investment in British consols carrying a 10 per cent coupon yields only 8 per cent if there is subsequently a 20 per cent devaluation of the pound sterling.

In contrast, if an equity investment in a British enterprise is considered, the devaluation loss is not automatically equal to the devaluation percentage. The profitability of this British enterprise in terms of pounds sterling will itself be affected by the very fact of the devaluation. If this devaluation leads to an increase in the returns measured in sterling which is more than the devaluation percentage, the equity will have a higher value in terms of dollars after the devaluation

of the pound.<sup>10/</sup> Thus, it is crucial to differentiate between (a) the one-shot transaction of the creation of a receivable or an investment in a fixed interest security, whose underlying LC return is not changed by the devaluation, and (b) the value of an asset, whose basic LC return does change because of the exchange rate adjustment.

An argument which is based on a piecemeal approach is that certain portions of the "bundle of assets" which constitutes the subsidiary undergoes a loss in value because of the exchange rate change. Viewing the subsidiary realistically as an ongoing concern, one would expect that a certain minimum amount of LC cash, receivables, and other financial assets are as necessary for continuing profitable operations as the brick and mortar for its building. Therefore, it seems illogical to act as if certain parts of that bundle of assets, the subsidiary, were subject to the full devaluation loss, while other equally necessary parts are treated as automatic "self-hedging."

One fact is clear. A loss always occurs on those LC assets which, at the time of devaluation, were in excess of the required minimum level of financial assets and were destined for transfer to the parent company. Otherwise, the value of individual assets and liabilities

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<sup>10</sup>The failure to distinguish clearly between the "static" and the "dynamic" effects of an exchange rate change greatly distracts from the value of an otherwise very sophisticated approach which is presented in Bernard A. Lietaer, Financial Management of Foreign Exchange (Cambridge, Mass.: M. I. T. Press, 1970).

is altered only to the extent that their relative contribution to the profitability of the subsidiary changes.

Before reform of current practices is promoted, it must be recognized that several factors tend to favor them. One is again related to the accounting treatment. Foreign exchange losses on translation are very obvious and show up in the published statements. However, incremental costs of forward currency operations, increased interest payments on LC liabilities, and the reduction of LC monetary assets below levels which are necessary for ongoing profitable operations are all buried somewhere in the income statement and are difficult to trace. As a result, human nature being what it is, there will undoubtedly be an inducement for financial executives to pursue the "safe" path and try to eliminate accounting exposure, even if it is based only on accounting conventions which are inadequate for the specific purpose of financial policy making.

A corollary to this situation is that the treasury function in many corporations has become a profit center, beginning in the early fifties when financial managers found out that aggressive fund management can yield considerable returns for the company. Operations in foreign currency markets now provide a welcome additional opportunity to make money at the treasury. This type of operation has an added advantage: if the expectations of financial management do not materialize, the cost of these operations -- high interest rates on LC

borrowings and excessive discounts on foreign exchange contracts -- can always be justified under the label "insurance for foreign asset protection."

Another quirk must be mentioned in connection with this kind of operation. In general, present U. S. taxation practices do not allow for the deduction of translation losses in foreign operations. However, hedging profits are normally subject to the full corporate income tax rate unless the firm is able to take very special steps to present them as capital gains. In most cases, foreign exchange gains are treated as current income. Therefore, in order to compensate for a given translation loss -- assuming a tax rate of 50 per cent on current income -- a company would have to hedge twice the amount of exposure in order to compensate fully for the translation loss.<sup>11/</sup>

The above considerations make it clear that current practices are deficient because they prevent the firm from maximizing profits. They have also been criticized on other grounds. Given the large-scale operations of multinational companies, the financial flows caused by present practices can be enormous. It is sometimes said that "nowadays an international monetary crisis occurs when three large multinational corporations decide to shift around their working capital." As a matter of fact, there is evidence that some very large corporations

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<sup>11</sup> D. R. Ravenscroft, "Taxation of Incomes Arising from Changes in Value of Foreign Currency," Harvard Law Review, Feb. 1969, p. 772.

may have decided, strictly as a matter of public policy, not to engage in any kind of aggressive international fund management because it might possibly disturb the international payment situation of their host countries. Be that as it may, if these fund flows occur for the wrong reasons they are doubly damaging, both for the firm and the countries involved.

There is an additional point: one might wonder how often corporations pass up profitable investments in countries with unstable monetary situations just because management is worried about the embarrassing write-offs which are caused by devaluations.<sup>12/</sup> Certainly, unstable monetary conditions may reduce the attractiveness of an investment for other reasons, but translation losses which do not adequately reflect the change in profitability of operations are surely an unnecessary deterrent. The countries which are deprived of investments are usually underdeveloped countries -- those which most need a boost in economic growth.

#### Toward Better Financial Policies

Mere negative criticism serves little purpose. Here, then, is an outline of what seems a preferable way to deal with the problem of changing exchange rates.

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<sup>12</sup>D.R. Mandich, "Devaluation, Revaluation."

First of all, corporations should attempt to persuade their accountants to take a more realistic approach to a revaluation of assets after changes in exchange rates. As a matter of fact, there are indications that the accounting profession is not at all happy with present practices, and the American Institute of Certified Public Accountants (AICPA) is now engaged in a wide-ranging study whose object is reforming current accounting methods for foreign operations. In the meantime, a survey of corporate reports shows that corporate managements and their public accountants have recently become somewhat more realistic, particularly in respect to the treatment of inventories. As an interim measure one might well consider the possibility of setting up a special reserve account for foreign exchange losses, a measure which occasionally seems acceptable to accounting firms. International Telephone and Telegraph's (ITT) consolidated accounts are a good example of this. However, the device of an exchange reserve does not really solve the basic problem, which is the realistic valuation of assets and liabilities -- taking into account the changes in the economic value which are caused by exchange rate changes.

Second, corporate financial management must take a stand on whether to attempt to educate the board, shareholders, and security analysts about the real effects of a devaluation or revaluation. In essence, the problem can be stated as one of "education versus cosmetics."

Third, exchange rate changes must become an integrated part of decision making in the corporation. As a matter of fact, all parity changes can be translated into a change in the real rate of interest on liabilities and a change in the real rate of return on assets. The implications of this fact are as follows:

a. Prediction and forecasting of devaluations and revaluations are as important as ever. Forecasting of exchange rate changes must become integral to the function of the financial management of an international corporation, just as forecasting of interest rates, prices, wages, and political developments is the responsibility of management.

b. Working capital management takes on increased importance. It has always been an essential task of financial management to keep the level of liquid assets such as cash, marketable securities, receivables, and similar items at just the level necessary for ongoing, profitable operations. When there is a possibility of devaluation or revaluation, however, so-called excess liquid assets are truly exposed. Excess assets are those which should have been transferred to the parent company but for some reason or another have not been moved. Any devaluation will cause a real loss on this portion of liquid assets.

c. The long-run prospects for devaluations and revaluations must be taken into account in the initial foreign investment decision. Unfortunately, most firms seem to leave it at that. However, the investment decision is not a one-shot deal; it must be seen as a continuous



decision. The firm continually decides whether to expand or curtail part of its operations or shift operations from one country to another. The possibility of monetary changes must become an intrinsic part of these decisions, since, as was illustrated in the beginning of this article, exchange rate changes affect the real rate of return. In this sense, asset management includes the whole package of pricing decisions, product policy decisions, and exporting and importing decisions. To illustrate, when devaluation is a near-term prospect, the corporation may well want to raise prices prematurely, especially if the devaluation is expected to be accompanied by price controls.

d. Last but not least, the possibility of exchange rate changes directly affects the financing decision because devaluations and revaluations influence the real cost of funds. With this in mind, hedging decisions take on a new meaning. They must be clearly seen as alternatives to borrowing and lending in every way, including timing. For example, deciding on the length of a foreign exchange contract is the same as deciding whether to borrow short or long.

For illustrative purposes, this article has focused almost exclusively on the problems posed by the devaluation of foreign currencies under the "rules of the game" inherent in a past international monetary system. The basic problem will remain the major concern of financial management of international corporations. For the future, however, it will become necessary to recognize significant variations in the way

the international monetary system operates. One aspect, particularly important for those U.S. -based international corporations whose management will have to face it squarely, is the possibility of a revaluation of some major currencies. The other innovation, which has already manifested itself, involves the way in which devaluations and revaluations will occur. Instead of occasional substantial changes of exchange rates, there may be increasingly frequent, but smaller, adjustments. Because of these conditions, the analysis which has been presented here of the implications of a devaluation is all the more important. Only those adjustments which account for the direction and frequency of change are required; the basic methods of analysis remain the same.

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44. Sue Jorgensen and Trudy Casselman, "Women Power: The Underutilized Human Resource," and "The Female Blue-Collar Worker: Her Working Conditions, Union Membership, and Special Problems. An International Survey," Aug. 1971, 100 pages.
45. H. Paul Root, "New Product Investment Decisions: The Process and Procedures," July 1971, 12 pages.
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