

CURRENCY CHANGES AND MANAGEMENT CONTROL: RESOLVING
THE CENTRALIZATION/DECENTRALIZATION DILEMMA THROUGH
THE USE OF INTERNAL FORWARD EXCHANGE RATES

Donald R. Lessard and Peter Lorange

WP 849-76

April 1976

I. INTRODUCTION

Effective control systems for decentralized operations require that operating management have control over the variables affecting the performance on which they are evaluated. Changes in exchange rates are one set of variables which affect the performance of decentralized foreign divisions. Many multinationals' actions to cope with changes in exchange rates are set at the corporate level and thus are not under control of the foreign divisional manager.

This reflects a complex organizational dilemma. On the one hand, pressures of time, distance, marketing and product differentials, as well as complex business-government relations, point toward the advantages of a decentralized organizational structure. ^{1/} On the other hand, appropriate response to fluctuating exchange rates, taxation differentials, controls on currency flows and the resulting variations in financial markets from country to country often calls for highly centralized financial decision-making. ^{2/} If centralized financial decisions are imposed on operating managers, and if the effects of such decisions are not somehow eliminated from the reported operating results, accounting profits will not provide accurate guides for control and the motivational consequences may be severe. On the other hand, if operating managers are given the responsibility for financial decisions, it is unlikely that they will follow policies which are optimal from a corporate viewpoint. They are unlikely to undertake actions which increase total corporate after-tax profits at the expense of their own profits as will often be the case when there is an overall tax

management program and they are likely to overreact to risks of potential exchange rate fluctuations which may loom large from their limited perspective. ^{3/}

To resolve this dilemma we propose the adoption of "internal forward exchange rates" (IFRs) by which the corporate treasurer would guarantee the rate at which financial flows would be translated for internal control purposes at various points over the budgeting cycle. These IFRs, in turn, would be set to reflect the treasury's best judgment about the value, from the corporate perspective, of future receipts and expenditures in various currencies. Thus these rates could but need not be the same as the actual forward exchange rates since the firm's expectations, degree of aversion to risk, overall position in each currency, and, in particular, tax situation in each country, might lead it to place different values on future flows in various currencies than those set in the market.

With this system, operating managers would be held accountable only for budgeted changes in exchange rates as reflected by the IFRs. ^{4/} Any differences between the IFRs and realized exchange rates would not influence the reported performances of the foreign division. Their operating plans, therefore, would reflect the forecasts of exchange rate developments incorporated in the IFRs, but would not be distorted by local attempts to reduce their exposure to fluctuations of this rate about the anticipated level. The treasury, on the other hand, could decide the extent to which the firm would remain exposed to currency fluctuations by holding open positions and could be judged on its performance as a separate profit center.

The outline of this article is as follows: We first introduce the question of an appropriate exchange rate for use in the budgeting process, and through a simple example illustrate the effects of alternative approaches on management decisions. We then discuss the benefits of using the same set of exchange rates in both setting the budget and tracking performance relative to the budget. We conclude with a discussion of how such rates should be set and whether and how often they should be updated to reflect new information. Throughout the discussion we focus on budgeting over the operating cycle, with a time horizon of one year or less.

With combination A-1 the implicit assumption is that the exchange rate will not change, but if it does, it will have no effect on the manager's performance. A-3 also incorporates the implicit assumption of no change, but places the full effect of any change on the operating manager. P-2 incorporates a projected exchange rate, which may differ from the current rate, in the budget and holds the manager responsible for performance defined at that rate regardless of the actual outcome. We refer to the projected rates as internal forward rates (IFRs) in this case since their use is analogous to the treasurer acting as a banker and "buying forward" receipts in foreign currencies at a guaranteed rate(s). P-3 again incorporates a projection, but holds the manager responsible for the impact on performance of deviations from the projected rate. Thus, in this case the treasurer does not guarantee the forward rate. E-3 may or may not incorporate a projection, but does not hold the manager responsible for any exchange rate fluctuation since the budget is always updated to reflect the actual outcome. The three shaded cells in the lower left (P-1, E -1, P-3) are ruled out since they require exchange rate forecasts or updates for determining the budget but ignore these when tracking performance relative to the budget. The other shaded cell (A-2) is ruled out because it is inefficient, i.e., it requires a projected rate at the time the budget is set but does not use it in the budget.

A recent study of ten multinational corporations showed that five used variants of P-3, three used variants of P-2, and two systems resembling A-3. ^{6/} An examination of the foreign operations of the

ten corporations revealed that tracking at actual rates seemed to distort the reported performance of foreign subsidiaries. When operational decisions were taken in a more centralized manner, these distortions seemed to cause little loss in local management understanding. However, in those firms with decentralized management control, use of some type of budgeted rates seemed to be necessary to assure goal congruent behavior by local management and to provide a linking pin for centralized financial management.

A Practical Illustration: The likely effect of each of these different approaches on operating managers' decisions can be illustrated with a simple example. Assume that the current dollar price of the foreign local currency (LC) is \$0.10 and that there are two equally likely possibilities for the dollar value of the local currency in the next period--a 50% chance that it will move to \$0.0833, and a 50% chance that it will remain the same, \$0.10. Thus the expected dollar value of the local currency is \$0.09167. ^{7/} Assuming for the moment that the firm requires no risk-premium for bearing the risk of foreign exchange fluctuations, we can use the expected rate of \$0.09167 as an appropriate IFR. Further assume that the manager is faced with a choice between three possible operating plans which are not mutually exclusive. As is typically the case, the computation in the example of adjustments to dollar profit due to currency fluctuations involve adjustments of the foreign asset values as well as adjustment of foreign operating profits.^{8/} We shall assume that the accounting data of a foreign responsibility center are translated from local currency into the parent company's currency according to the monetary/non-monetary method. ^{9/}

One option, operating plan "A", involves sales of LC 80,000 and requires LC 75,000 of "exposed" assets. ^{10/} The second alternative, "B", gives sales of LC 100,000 of the exposed assets. Finally, the third plan, "C", gives sales of LC 150,000 but requires LC 200,000 of exposed assets. The remaining details of each plan as well as their budgeted performance at each of the possible exchange rates are shown in Exhibit 2. For simplicity we assume changes in the exchange rate will have no impact on LC operating results. Therefore, the actual performance at each rate will equal the budgeted performance for that rate.

EXHIBIT 2

Budgeted Performance at Different Exchange Rates *

	Plan A	Plan B	Plan C
I. Stated in LC terms	Sales LC 80,000 COGS LC 60,000 OPX LC 4,000 <hr/> Profit LC 16,000	LC 100,000 LC 80,000 LC 5,000 <hr/> LC 15,000	LC 150,000 LC 125,000 LC 7,500 <hr/> LC 17,500
II. LC1 = \$0.10	Sales \$8,000 COGS 6,000 OPX 400 <hr/> Profit \$1,600	\$10,000 8,000 500 <hr/> \$1,500	\$15,000 12,500 750 <hr/> \$1,750
III. LC1 = \$0.0833	Sales \$6,664 COGS 4,998 OPX 333	\$ 8,333 6,667 417	\$12,500 10,417 625

(Continued on next page)

Exhibit 2 (continued)

	Plan A	Plan B	Plan C
III.			
(cont'd)			
**Loss on exposed assets	\$1,250	\$1,667	\$3,334
Profit	\$ 83	\$ -418	\$-1,876
IV. LC1 =			
\$0.09167			
Sales	\$7,332	\$9,166	\$13,749
COGS	5,499	7,333	11,457
OPX	367	458	687
***Loss on exposed assets	625	834	1,668
Profit	\$ 840	\$ 541	\$ -67

* Taxes are ignored for simplicity

** Loss on exposed assets are calculated as follows:

Plan A: Exposed assets LC 75,000; Loss: 75,000 (75,000x.9167)=6250 in LC or 625 in home currency.

Plan B: Exposed assets LC 100,000; Loss: 100,000 (100,000 x .9167)=8340 in LC, or 834 in home currency

Plan C: Exposed assets LC 200,000; Loss: 100,000 (100,000 x .9167)= 16,880 in LC, or 1688 in home currency.

*** Loss on exposed assets are calculated as follows:

Plan A: 75,000--(75,000 x .0833) = 1,250

Plan B: 100,000 - (100,000 x .0833)= 3,334

It is easy to see how the treatment of foreign exchange fluctuations will affect a manager's budgeted and reported profits and therefore his incentives. If, at the one extreme, the budget implicitly assumes no exchange rate change, and if foreign exchange fluctuations are considered to be outside of the realm of the operating manager (case A-1 in Exhibit 1), the results will be recorded as if the beginning and ending exchange rate is $LC1 = \$0.10$, i.e., budget II of Exhibit 2, regardless of the actual outcome. All three alternative plans will appear profitable, including plan C, which from an economic perspective should be avoided. If the possibility of exchange rate changes are ignored in the budget but all actual exchange fluctuations are imposed on the manager, on the other extreme (case A-3 in Exhibit 1), he will probably avoid plan B as well as plan C, because of the high probability of a very poor performance relative to the budget (see Budget III, Exhibit 2). This decision also is uneconomic for all but the most risk-averse firms.

If the budget and reported profit is based on the internal forward exchange rate, $LC1 = \$0.09167$ (Case P-2 in Exhibit 1), he clearly will accept Plans A and B and avoid Plan C. If the budget is based on the internal forward exchange rate, but performance is measured at the actual rate at the end of the period, he clearly will accept A and reject C, but his decision regarding B will depend upon the extent to which the manager is averse to taking risks. The effect of the various budget-rate/tracking-rate combinations on actual versus budgeted profit are illustrated in Exhibit 3. Note that all combinations along the diagonal, i.e., where the same type of rates are used in both budget preparation and

performance tracking, there will be no deviations due to exchange rate variations. However, the various combinations along the diagonal do have quite different implications for operating decisions. The combinations involving actual rates at the time of the budget or the actual rates at the end of the period for both budgeting and tracking (A-1 and E-3), implying an update of the budget in the latter case, allow the manager to ignore the effect of both anticipated and unanticipated fluctuations in exchange rates.

Exhibit 3

Budget vs "Tracking" Performance of Profits Example with Alternative Methods

Rate used for trans- Rate lation/tracking used in (posterior determin- rate) ing budget (prior rate)	Actual at time of budget		Projected at time of budget		Actual at end of period	
	Actual Outcome LC.1=\$1	Actual Outcome LC.0833=\$1	Actual Outcome LC.1=\$1	Actual Outcome LC.0833=\$1	Actual Outcome LC.1=\$1	Actual Outcome LC.0833=\$1
Actual at time of budget (LC1:\$.10)	<u>A-1</u>		/		<u>A-3</u>	
Plan A Profit	1600	1600			1600	83
Budget	<u>1600</u>	<u>1600</u>			<u>1600</u>	<u>1600</u>
Deviation						
Plan B Profit	1500	1500	1500	-418		
Budget	<u>1500</u>	<u>1500</u>	<u>1500</u>	<u>1500</u>		
Deviation				-1918		
Plan C Profit	1750	1750	1750	-1876		
Budget	<u>1750</u>	<u>1750</u>	<u>1750</u>	<u>1750</u>		
Deviation				-3626		
Projected at time of budget (LC.09167:\$1)			<u>P-2</u>		<u>P-3</u>	
Plan A Profit			840	83	1600	83
Budget			<u>840</u>	<u>83</u>	<u>840</u>	<u>840</u>
Deviation					+760	-757
Plan B Profit			541	-418	1500	-418
Budget			<u>541</u>	<u>-418</u>	<u>541</u>	<u>541</u>
Deviation			+959	-959		
Plan C Profit	-67	-1876	1750	-1876		
Budget	<u>-67</u>	<u>-1876</u>	<u>-67</u>	<u>-67</u>		
Deviation			+1813	-1813		
Actual rate at end of period (LC1:\$.10 or LC1:\$.0833)					<u>E-3</u>	
Plan A Profit					1600	83
Budget					<u>1600</u>	<u>83</u>
Deviation						
Plan B Profit					1500	418
Budget					<u>1500</u>	<u>418</u>
Deviation						
Plan C Profit	1750	-1876				
Budget	<u>1750</u>	<u>-1876</u>				
Deviation						

The combination of actual beginning of period rates for budgeting and actual end of period post rates for tracking A-3, although probably widely used in practice, appears to represent the worst of all possible worlds. In the budgeting process no account will be taken of possible exchange fluctuations, yet their full impact will be attributed to the manager at the tracking stage. The harmful effects of such a system can be expected to include "padding" of budgets or decentralized hedging actions by managers to reduce exchange risks which are likely to loom very large from their local perspective.

The combination involving IFRs at the budgeting and tracking stage isolates managers from unplanned exchange fluctuations but acknowledges them at the budgeting stage. Thus it will dominate the other alternatives which do not expose managers to unforeseen exchange fluctuations but fail to force managers to consider them at the budgeting stage. These dominated options are A-1 and E-3. Based on these observations, we believe that combination P-2 will generally be superior to all others.

The suggested procedure of using internal forward exchange rates as the basis for decision-making and performance evaluation goes a long way towards satisfying the two major criteria for good management control system, goal-congruence and fairness. Goal congruence is restored because a corporate-wide point of view has been brought to bear on the currency exchange rate, eliminating decision-making efforts taken on the basis of the expectations and risk-preferences of local managers who necessarily will have a narrower horizon on the currency risk problem than the corporate headquarters. Fairness is restored at least in regard to the exchange rate fluctuations, by the establishment of a standard under which the local decision-maker gets no blame or credit for currency fluctuations outside his control.

III SETTING INTERNATIONAL FORWARD EXCHANGE RATES

One possible objection to the use of IFRs is the need for exchange rate forecasts. This requirement may appear to be particularly onerous given evidence that under the current regime exchange rate fluctuations are large relative to fundamental factors such as inflation differentials and interest rate differentials, but that exchange markets appear to be efficient and therefore the fluctuations can be characterized as a random process. ^{11/} However, forecasts of some type, whether implicit or explicit, are required for proper planning regardless of the particular control system. Further, it is in precisely this type of environment, where there are large random exchange rate fluctuations, that it is important to shield operating managers from these unforeseeable exchange rate variations.

Even in this environment, some forecasting of exchange rates, at least in terms of long-term trends, is possible and forecasts are available from a variety of services. ^{12/} Rather than dwell on the issue of forecasting exchange rates, we focus here on how IFRs should relate to the firms' forecasts as well as other elements in an external environment and in its own financial position. The value to a firm of flows in a particular currency at a particular point in the future will not necessarily be equal to the expected value of the currency. Many firms seek to limit exchange rate risk by hedging their exposure through restructuring their financial asset and liabilities, changing the timing of international cash flows, or entering into forward

exchange transactions. Further, the value of flows in particular currencies to or from particular units of the firm depend upon their tax treatment which will be a function of the firm's overall tax position as well as the range of mechanisms it has at its disposal for shifting profits and/or funds among subsidiary firms. Thus it is useful to think of the IFRs as "shadow prices" emerging from a model for optimal international funds management, even if no such model is used in practice. ^{13/} The inputs into such a model will include the schedules of current and anticipated exposure as well as cash budgets which reflect planned activity, tax rates, interest rates, current and forecasted exchange rates, and both internal and external constraints on financial alternatives. Further, such a model should reflect the firm's willingness to bear exchange rate risks either through constraints limiting total risk exposure or through more explicit risk-reward tradeoffs. Since the objective of the model will be to maximize the value of future flows or minimize the cost of funding future requirements, taking risk preferences into account, the shadow prices associated with various flows will represent the best estimate of their value to the firm.

As an illustration of the possible types of relationships between the firm's forecasts of future exchange rates and its IFRs, consider a firm which due to management's risk aversion wished to hedge all foreign exchange exposures. Often, it will be able to do so either by arranging foreign currency borrowings to offset positive exposures. In other cases, it might hedge by entering into foreign exchange contracts. The choice between the two would be determined by cost and availability,

borrowing in LC if the spread between the effective after-tax interest rate for LC borrowing and dollar borrowing is greater than the forward discount (premium). In this case, the spread or forward discount, whichever is smaller, would provide the IFR to be used.

A further question regarding IFRs is whether and to what extent operating managers should have a role in setting them. The most important consideration, of course, is to incorporate all relevant information available on a timely basis. To the extent that operating managers in particular countries have access to information not available to central treasury personnel, they must be drawn into the process. This is unlikely for most major currencies, but may be significant for smaller or less-developed countries about which information is not readily available. A different consideration is the degree to which managers should be incorporated in the process to assure understanding and acceptance of the IFRs which are important inputs into business plans as well as reported performance. An honored convention for minimizing disfunctionalities in control systems is that managers should have a say in the negotiation of any performance budget relevant to their own units. This implies that operating managers participate, at a minimum, to the extent necessary to achieve this understanding. Confidence in the system would undoubtedly be strengthened if there were a procedure for appealing unacceptable IFRs to a higher level of management, and a procedure for revising the IFRs when unforeseen events dramatically change the exchange rate and when business plans should be changed in response.

The final and perhaps most important reason for involving operating managers in setting IFRs is that these rates will reflect not only the corporation's best estimates of exchange rates and international interest rate differentials, but will also reflect the extent to which the corporation can alter its business or financial decisions in anticipation of or in response to exchange rate changes. Decisions open to the firm might include changing prices or currencies in which sales are invoiced, sources of inputs, production schedules, markets for outputs, local borrowing and hedging as a means of shifting some funds from one currency to another, or leading and lagging certain receipts and/or disbursements to the same end. This suggests that IFRs cannot be determined properly without a schedule of receipts and disbursements and reflects the simultaneous nature of the problem. This problem might be resolved while maintaining a centralized finance function and decentralized control over operations by formally decomposing the overall problem as part of a mathematical programming approach. However, we consider the most realistic method to be the use of one or more iterations between the two related problems. Beginning with a set of provisional IFRs, operating managers could prepare rough, highly aggregated sets of operating plans for their divisions. These, in turn, would serve as input for a first solution of the centralized funds management problem. The resulting IFRs could, in turn, be used for produce a final set of operating plans and budgeting rates to guide subsequent decisions. This points out the need for close coordination between the two activities.

IV. ADJUSTING TO EXCHANGE RATE CHANGES WITHIN THE OPERATING CYCLE

To this point we have avoided the question of whether or not IFRs should be adjusted within the operating cycle if exchange rates change dramatically. This will depend on several factors including the volatility of exchange rates and the relative size of exposed assets and LC earnings streams within the corporate total, but most critically the extent to which operating decisions can be changed in response to the new exchange rates. Clearly, if the operating cycle corresponds to a period over which decisions are not reversible, IFRs should not be changed under even the most extreme circumstances since this would violate the basic concept--insulating operating managers from random exchange rate shifts. In other cases, decisions may be reversible at some cost. Here the basic concept would call for mechanisms which would call for new operating plans but also some adjustment in the manager's reported profits to offset the costs involved. If the operating cycle is sufficiently long relative to the duration of particular operating decisions, IFRs can and should be updated. However, even here the change should apply only to the remainder of the period--the period for which new operating decisions can be made. In all cases, it would appear that updating the IFRs when appropriate would be preferable to making the operating subsidiaries responsible for actual exchange rate outcomes whether reflected in the IFRs or not. Further, the coordination required for adjusting IFRs would create an environment of "sharing" the results of unforeseen developments instead of capriciously imposing them on operating units.

V. Conclusions

We have outlined an approach for handling the treatment of currency changes within the multinational corporation's planning and control systems which incorporates management control over operating decisions, undertaken fairly autonomously by each individual foreign subsidiary, and international funds management undertaken primarily by a centralized headquarters office. A set of currency rates which reflect the best judgement of not only the currency developments but also the corporation's position vis a vis these changes, called IFRs, were suggested to be an appropriate basis for the development of budgets, as well as for tracking the operating performance of the foreign subsidiaries relative to the budget. In this way, local management will be expected to take actions congruent with corporate objectives on the basis of these rates and to be held responsible for their performances relative to these rates. At the same time the international funds management task can be handled centrally, allowing for a more effective and coordinated execution of this management task. We feel that this approach offers an operational mechanism to more effectively cope with the foreign currency fluctuations while maintaining a decentralized management control system.

FOOTNOTES

- 1/ A market evolution of corporate structure towards decentralized operations has taken place over the last four decades. For the classical discussion of this development, see Chandler [1]; for the case of multinational corporations see Stopford [18] and Channon [2]. For a summary of planning and control tools in decentralized corporations, see Vancil [20], Vancil and Lorange [21], Lorange [11], and Lorange and Scott Morton [12].
- 2/ There is general agreement among academic writers that centralized financial decision-making is valuable in multinational firms as is evidenced by the textbooks of Eiteman and Stonehill [4] and Rodriguez and Carter [14]. Specific treatment of some of these advantages is provided by Horst [8], Lietaer [10], Robbins and Stobaugh [13], Rutenberg [15], and Shapiro [17].
- 3/ Although Robbins and Stobaugh [13] provide extensive examples and analyses supporting the benefits of centralized financial decision-making, they find that the largest corporations have backed off from complete centralization of this function. This may be due to the difficulties of coordinating it with the management control process.
- 4/ It should be stressed that the idea of a link between performance evaluation and financial management is valid irrespective of whether operating decision-making in the multinational firm tends to be centralized or decentralized. Centralized operations, however, will not encounter the same difficulties as decentralized operations where the operating divisions will be evaluated on a performance measure that might be influenced not only by currency changes but by corporate financial decisions which are outside the control of these operating managers.
- 5/ This option implies "updating" the budget as the exchange rate changes.
- 6/ See Traver [19].
- 7/ All computations are done in terms of the dollar price of LC. The expected exchange rate is arrived at as follows:

$$.0833 \times (.5) + .10 \times (.5) = .04167 + .0500 = .09167$$

Footnotes (continued)

- 8/ Throughout the paper we use the dollar as the parent company's home currency. All other currencies are lumped under the heading local currency (LC).
- 9/ In this paper we are not concerned with the definition of exposure, although the adjustments in our example are consistent with the latent FASB study [5]. Our proposal can be used in conjunction with a wide variety of exposure definitions, many of which would reflect economic reality more closely than current accounting conventions. See, for example, Dufey [3], and First National City Bank [6].
- 10/ "Exposed assets" under the monetary/non-monetary translation method, are the excess of cash plus LC receivables plus other LC financial assets over all forms of LC obligations.
- 11/ See, for example, Giddy and Dufey [7], or Kohlhagen [9].
- 12/ Several major banks which provide foreign exchange advisory services supply forecasts as do the major econometric firms.
- 13/ For further discussion of models for centralized funds management see the references in footnote 2/ above. Scott [16] provides a concise description of the key elements in this process.

REFERENCES

1. Chandler, Alfred D., Strategy and Structure, M.I.T. Press, Cambridge, Mass., 1962.
2. Channon, Derek F., The Strategy and Structure of British Enterprise, Division of Research, Harvard Business School, Boston, 1973.
3. Dufey, Gunter, "Corporate Finance and Exchange Variations", Financial Management, Summer 1972.
4. Eiteman, David K., and Arthur I. Stonehill, Multinational Business Finance, Addison-Wesley, 1973.
5. Financial Accounting Standards Board, Statement No. 8: Accounting for the Translation of Foreign Currency Transactions and Foreign Currency Financial Statements, October 1975.
6. First National City Bank, Corporate Foreign Exposure Management, 1975.
7. Giddy, Ian, and Gunter Dufey, "The Random Behavior of Flexible Exchange Rates: Implications for Forecasting", Journal of International Business Studies, Spring 1974.
8. Horst, Thomas, "The Theory of Multinational Firm: Optimal Behavior Under Different Tariffs and Tax Rates", Journal of Political Economy, September-October 1971.
9. Kohlhagen, Steven W., "The Foreign Exchange Markets--Models, Tests, and Empirical Evidence", unpublished working paper, Feb. 1976.
10. Lietaer, Bernhard A., Financial Management of Foreign Exchange: An Optional Technique to Reduce Risk, Cambridge, M.I.T. Press, 1970.
11. Lorange, Peter, "Divisional Planning: Setting Strategic Direction", Sloan Management Review, Fall 1975.
12. _____ and Michael S. Scott Morton, "A Framework for Management Control Systems," Sloan Management Review, Fall 1974.
13. Robbins, Sidney M. and Robert B. Stobaugh, Money in the Multinational Enterprise, New York, Basic Books, 1973.
14. Rodriguez, Rita and E. Eugene Carter, International Financial Management, Englewood Cliffs, NJ, Prentice-Hall 1976.

References (continued)

15. Rutenberg, David P., "Maneuvering Liquid Assets in a Multinational Company: Formulation and Deterministic Solution Procedures," Management Science, June 1970.
16. Scott, George M., An Introduction to Financial Control and Reporting in Multinational Enterprises, Austin, Bureau of Business Research, Graduate School of Business, University of Texas at Austin, 1973.
17. Shapiro, Alan C., "Hedging Against Devaluations: A Management Science Approach," in C.G. Alexandrides, ed., International Business Systems Perspectives, Atlanta: Bureau of Business Research, Georgia State University, 1972.
18. Stopford, John, "Growth and Organizational Change in the Multinational Firm," Unpublished Doctoral Dissertation, Harvard Business School, Boston, 1968.
19. Traver, Stuart, "Setting 'Smart' Budgeting Rates in the Control Process", unpublished Masters Thesis, M.I.T., Sloan School of Management, May 1975.
20. Vancil, Richard F., "What Kind of Management Control System do You Need?", Harvard Business Review, March-April 1973.
21. Vancil, Richard F., and Peter Lorange, "Strategic Planning in Diversified Companies", Harvard Business Review, Jan.-Feb. 1975.