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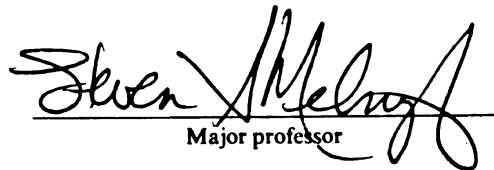
INDUSTRIAL BUYER-SUPPLIER RELATIONSHIPS UNDER
COUNTERTRADE RECIPROCAL PURCHASE OBLIGATIONS

presented by

Leland A.W. Buddress

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Business Administration


Major professor

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**INDUSTRIAL BUYER-SUPPLIER RELATIONSHIPS UNDER
COUNTERTRADE RECIPROCAL PURCHASE OBLIGATIONS**

By

Leland A.W. Buddress

A DISSERTATION

**Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of**

DOCTOR OF PHILOSOPHY

**Department of Management
The Eli Broad Graduate School of Management**

1995

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ABSTRACT

INDUSTRIAL BUYER-SUPPLIER RELATIONSHIPS UNDER COUNTERTRADE RECIPROCAL PURCHASE OBLIGATIONS

By

Leland A. W. Buddress

Countertrade - international reciprocity - is an activity whose growth has been well documented over the last decade. The imposition of reciprocal business activity as the price of making a sale is a tactic now employed, in one form or another, by more than 100 nations. The majority of countertrade contract forms result in reciprocal purchase obligations for the countertrading firm.

Senior managers of four countertrading firms and four suppliers to each of these firms were the subjects of in-depth interviews. Using both quantitative and qualitative methodologies, three research questions were examined. The first determined that the favored method of disposal of reciprocally purchased goods was by internal consumption.

To be able to generate orders for new countertrade suppliers, the firm must either shift orders from existing suppliers, divert orders which otherwise might go to existing suppliers, or outsource tasks previously performed within the firm. The second question ascertained the

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factors of importance to countertrade firms when selecting from those order reallocation options.

The third question examined the impacts to relationships between countertrading firms and existing suppliers when reciprocal requirements are undertaken. Relationships were found to improve under certain circumstances and to deteriorate under others.

Two theoretical frameworks were derived from the interview data; a general framework of buyer-supplier relationship impacts of countertrade and a dyadic relationship framework illustrating the flow-down of reciprocal obligations throughout the supply base of a countertrading firm.

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Leland

1995

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Dedicated to my wife Janet
who suffered through every moment of this process with me,
and to Nathan and Jeremy
who gave up a significant portion
of their claim to Dad's time.

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And to

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all for one.

ACKNOWLEDGEMENTS

Any dissertation is more than an individual effort. I owe a large debt of thanks to many including the following:

Dr. John H. Hoagland, who started it all and made it possible.

Dr. Steven A. Melnyk, who was always there when I needed him most.

Dr. Alan Raedels, friend, colleague and confidant.

Dr. Donald Bowersox and Dr. Stanley Faucet, steadfast throughout.

And to the rest of the four musketeers; Barbara Cofield, Laura Birou, and Ernie Nichols. One for all and all for one.

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CHAPTER I

INTRODUCTION

Countertrade is, in essence, international reciprocity in one of several forms. This research explores some of the effects of countertrade reciprocal purchase requirements on relationships between the countertrading firm and its existing suppliers.

Traditional reciprocity takes the form, "I'll buy from you if you'll buy from me." Under countertrade, international reciprocity exists between a firm and its customer as in traditional reciprocity. However, previous studies have indicated that there may be several additional levels of reciprocity resulting from countertrade agreements; between the firm and its suppliers, as well as between the suppliers and their sources of supply (Carter and Gagne, 1988; Forker, 1991). The new countertrade reciprocity is, "I (a multinational firm) will buy from you (my supplier) if you'll buy from my customer to help fulfill my reciprocal purchase obligation."

In today's global marketplace, a firm's supply base can be both a strategic asset and a source of competitive advantage (Bhote, 1989). Sourcing - the industrial purchasing process of supplier location, qualification and

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selection - should be practiced with great care. With the average manufacturing firm spending sixty to seventy percent of the cost of its products for the purchase of necessary materials and services, the selection of world-class suppliers, and the development of long-term, collaborative relationships with them, are critically important (Dobler, Burt and Lee, 1990).

Countertrade can cause firms to purchase from suppliers who are selected, not for their least total cost or their global competitiveness, but because purchases from them enable the countertrading firm to make a sale. While there have been many prescriptive articles instructing purchasers in ways to approach countertrade obligations¹, there have been only four formal studies (Bluestein, 1986; Carter and Gagne, 1988; Bingham and Quigley, 1990; Forker, 1991) which even touched on purchasing issues related to countertrade. There has been no research into changes, beneficial or detrimental, to buyer-supplier relationships as a result of the imposition of countertrade reciprocal purchase obligations. It is this void which this research addresses.

1. For example see Warren E. Norquist, "Countertrade: Another Horizon for Purchasing." Journal of Purchasing and Materials Management (Summer 1987), pp. 2-6; or Raj Aggarwal, "International Business Through Barter and Countertrade." Long Range Planning 22, no. 3 (1989), pp. 75-81; or "101 Checklist for Coping with Worldwide Countertrade Problems." Business International, June, 1985, p. 22.

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COUNTERTRADE

International reciprocity is often imposed upon multinational firms by foreign governments as a requirement for making a sale. The various forms and requirements of these reciprocal obligations are collectively known as countertrade. One definition holds that any transaction which involves the acceptance of something other than cash as at least partial payment for goods sold qualifies as countertrade (Hanafee, 1984). In other words, countertrade involves, at least to some degree, the exchange of goods or services for other goods or services. Local content requirements, co-production, and reciprocal purchasing are examples.

EVOLUTION OF MODERN COUNTERTRADE

In 1972, countertrade transactions - international reciprocity - amounted to roughly 2 percent of world trade (Carter and Gagne, 1988). Use of these transactions has grown to the point where some estimate that by the end of the century as much as 50 percent of all world trade will be in this form (Ronkainen, 1984; Norquist, 1987). Other estimates of the impact of countertrade range from twenty to forty percent (Briggs, 1984; Maher, 1985; Cohen and Zysman, 1986). Similarly, in the early 1970's, only 15 countries participated in countertrade, while by the mid-1980's, more than 100 countries were involved (Bluestein, 1986). By any

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The modern forms of reciprocal trade had their origins following the Second World War when countries of the Eastern Bloc needed goods and materials from western nations, but lacked the hard currency with which to purchase these requirements (Elderkin and Norquist, 1987; Alexandrides and Bowers, 1987). Instead of cash, they offered to exchange their natural resources or manufactures for needed goods and materials. Because of its location, Vienna became the center of that trade.

By reason of massive debt undertaken by many third world countries during the early 1980's, they too suffered from shortages of necessary hard currencies to sustain their economies. Hard currencies which these countries did accumulate were often required to service their debt. In both situations, countertrade offered a solution to the acquisition of necessary goods without depletion of scarce hard currency resources. London developed into a center for this sort of reciprocal activity as its banking community became increasingly involved in these transactions (Spence, 1985; Haar and Renforth, 1986; Kassaye and Vaccaro, 1992).

Politically, a government may elect to impose countertrade requirements for several reasons. It may be used in an attempt to more closely balance imports and exports. It also may be the political expedient which allows the government to purchase foreign-made goods. In 1987, the British

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government purchased Advanced Warning and Control System (AWACS) radar aircraft from Boeing, in spite of a competing offer from a domestic firm (Schaffer, 1989). The expenditure of large government sums with a foreign supplier was made politically acceptable by Boeing's acquiescence to a 130 percent offset agreement. The government could then claim a net economic benefit, thus damping the "buy domestic" outcry. Each of these reasons; non-convertible currency, hard currency commitments, and political expediency has led to the upsurge in countertrading activities noted by many studies (Cohen and Zysman, 1986; Carter and Gagne, 1988; Forker, 1991).

This expansion, coupled with increased world trade volumes, indicate that industrial purchasing activities related to countertrade are becoming more common. The involvement of industrial purchasing in the reciprocal obligations of countertrade will likewise increase as world trade grows and as firms elect to consume more of their reciprocal purchases (Carter and Gagne, 1988).

COUNTERTRADE FORMS

While there are many variations of countertrade transaction types, there are five general forms upon which most authorities agree (Elderkin and Norquist, 1987; Carter and Gagne, 1988; Forker, 1991).

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The simplest of the types of countertrade is the ancient practice of barter. In the modern version, goods are exchanged for other goods without cash. Typically, coincident shipments are made at a specific time and are governed by a single contract between the two parties.

Counterpurchase

A second form of countertrade involves two separate but linked sales/purchase agreements. In this case, each party agrees to buy and pay cash for goods from the other party. Here, there are two separate contracts, typically linked by a third protocol agreement. The compensating reciprocal purchase to be made by the multinational firm may be equal to the value of the goods sold to the countertrading country, but frequently the proportion may be less than or greater than the sale value. The counterpurchase requirement typically spans several years, as well. In the Boeing AWACS example cited above, the 130 percent offset obligation was to be discharged over eight years (Schaffer, 1989).

Buyback

In situations where countries acquire technology or manufacturing capability from the countertrade transaction, several reciprocal possibilities exist. One form allows the buying country or firm to pay for its acquisition with the output of the capacity it purchased. This may be in the

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form of a percentage of the facility's output over ten to twenty years. Alternately, a joint marketing agreement may be formed between the facility and the multinational firm whereby the firm markets the output of the facility worldwide for an extended period of time. Collectively, these forms of reciprocity are referred to as "buyback".

Offset

The term "offset" pertains to a wide variety of activities imposed on the seller by a government which is making large, typically military, purchases. Reciprocal concessions required of the seller may include local sourcing of components or materials, increasing general imports from the buying country and transfers of technology (Hennart, 1990). Another offset form is commonly known as co-production, where a country agrees to buy goods if the seller will establish, in the buying country, facilities which will manufacture or assemble at least some part of the finished product.

Switch

A switch trade is simply one in which a third party is involved. In this form, for example, the multinational firm might direct that the counterpurchased goods be shipped to a third party, often a broker, who will sell the goods and pay the multinational firm in cash.

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PROBLEM STATEMENT

As countertrade becomes more prevalent in international transactions, purchasers are more likely to become involved in reciprocal purchase requirements. Countertrading firms typically acquire and develop new countertrade suppliers in the country into which countertrade sales are made. The problems with reciprocal purchase requirements, from the industrial purchasing view, are that they disrupt and may damage established supply relationships, and they counter the purchasing objective of a reduced supply base of world-class capability.

Hennart (1990) has identified buyback, counterpurchase and offset as the three types of countertrade which generate reciprocal purchase obligations for countertrading firms. Carter and Gagne, (1988) and Forker, (1991) found that these three forms of countertrade constitute the vast majority of countertrade transactions. There is no research to date which has identified the impacts of countertrade requirements on buyer-supplier relationships. This research extends the concepts of Hennart's work by determining reactions of both buyers and suppliers to reciprocal obligations and by identifying and assessing their impacts on buyer-supplier relationships.

FOCUS OF THIS RESEARCH

The first purpose of this research is to confirm that the preferred method of disposal of reciprocally purchased

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goods is internal consumption, as implied by previous research (Carter and Gagne, 1988; Forker, 1990). Second, the factors which are important in the selection of source shift options for orders placed with countertrade suppliers are determined. Third, it is important to examine suppliers' direct or indirect involvement in the reciprocal purchase obligations of their customers. The research identifies the impacts of those reciprocal requirement responses on relationships between a countertrading firm and its existing suppliers. A comparison is made between buyers' perceptions of buyer-supplier relationship changes resulting from countertrade, and those of their suppliers.

COUNTERTRADE SUMMARY

A countertrade transaction might be defined as any international reciprocal transaction; any international transaction involving some form of compensation other than cash; or any international transaction by which a company acquires an obligation to purchase by other than conventional competitive practices.

In his 1990 article, "Some Empirical Dimensions of Countertrade", Hennart classified countertrade's various forms. Three of the forms of countertrade - buyback, counterpurchase and offset - create reciprocal purchase obligations (Hennart, 1990). Further, these three forms constitute the vast majority of countertrade transactions

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(Carter and Gagne, 1988; Forker, 1990). Below is Hennart's taxonomy.

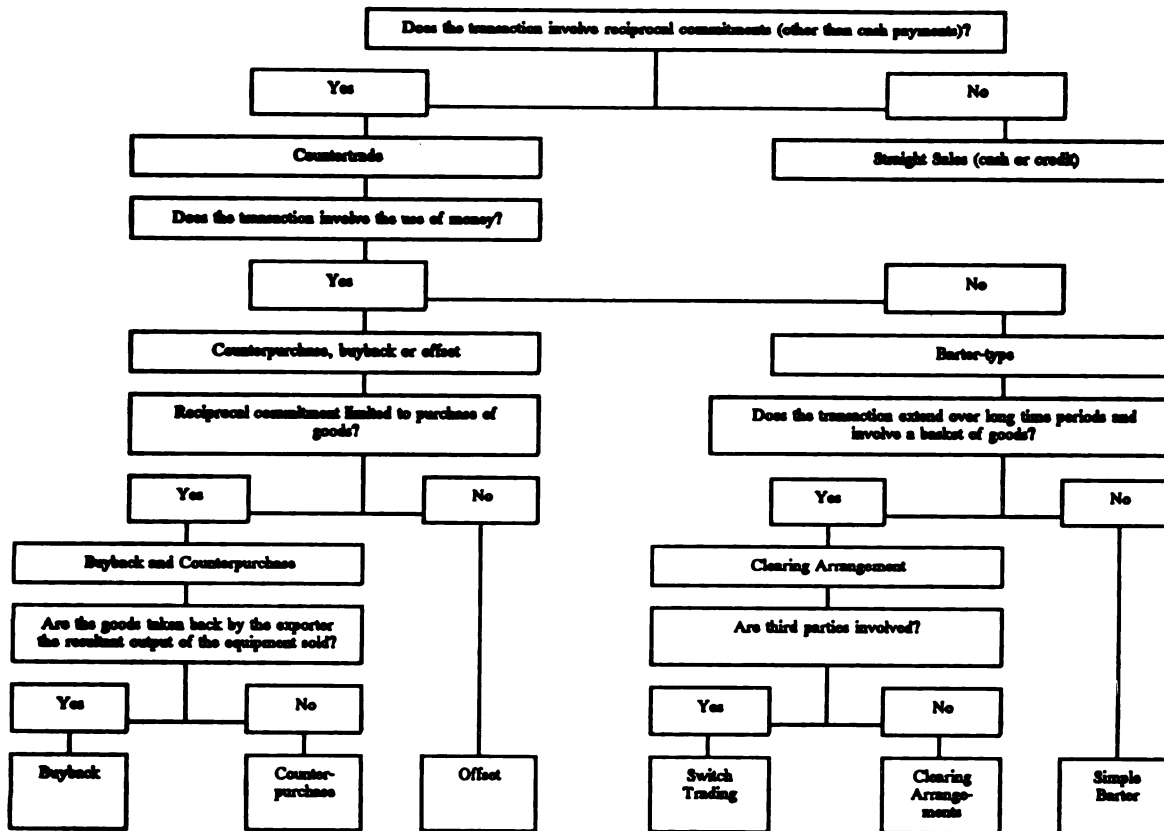


Figure 1-1

Hennart's Forms of Countertrade

CONCEPTUAL FRAMEWORK OF COUNTERTRADE AND BUYER-SUPPLIER RELATIONSHIPS

To discharge reciprocal obligations, there are three options for the countertrading firm. It can purchase goods for internal consumption (either by itself or by sister firms or divisions), it can include suppliers (by selling

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counterpurchased goods to them or by having them assume a portion of the obligation) and finally, it can buy goods which it resells to unrelated third parties.

These first two conditions, internal consumption and supplier inclusion have the common characteristic of falling within the usual scope of industrial purchasing activity. In either case, the industrial purchasing function will be faced with potential supplier relationship changes. In the first instance, suppliers may have their volumes of business reduced in favor of new countertrade suppliers. In the other case, suppliers, not the countertrading firm will be the consumers of the reciprocally purchased goods. The third situation, that of resale of countertraded goods to unrelated third parties, usually does not involve industrial purchasing and is, therefore, outside the scope of this research.

A countertrade obligation initiates a process or response from the industrial purchasing organization of the countertrading firm. This research focuses on four key steps/stages in this process:

1. The choice of means of disposal of the obligation.
2. The factors which influence the choice between available options when reallocating orders from existing suppliers new countertrade suppliers.
3. The suppliers' choices of response to requests for participation in their customers' countertrade obligations.

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4. The impacts of these choices on buyer-supplier relationships.

Following Hennart's 1990 model, a conceptual framework is derived which includes the choice of method by which to dispose of reciprocally purchased goods. It includes the creation of new countertrade suppliers and indicates choices buyers may make in shifting orders from existing suppliers to new countertrade suppliers. The framework then includes the involvement of suppliers in the reciprocal obligations of their customers and notes affects on buyers' relationships with existing suppliers.

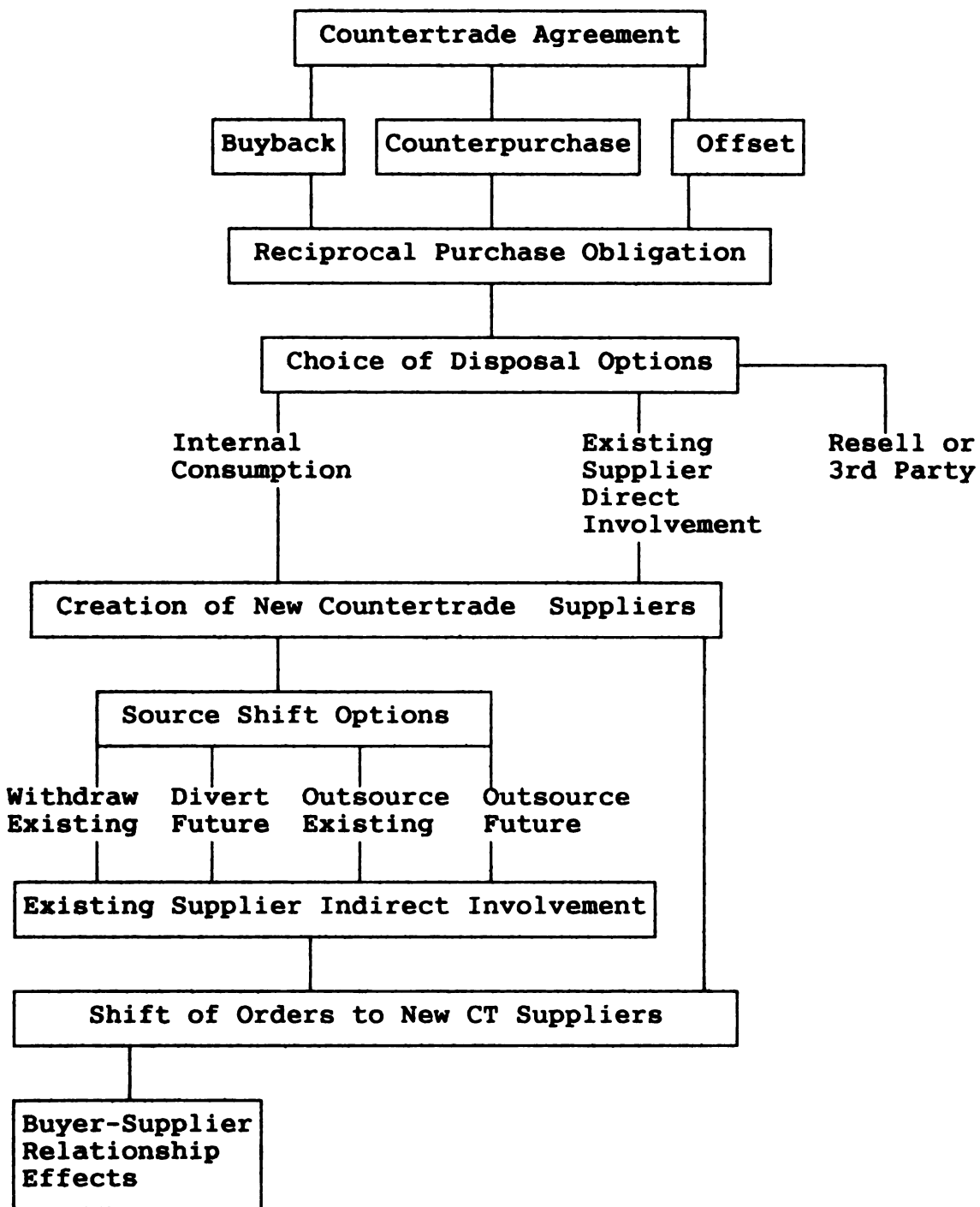


Figure 1-2
Conceptual Framework

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INDUSTRIAL PURCHASING

Industrial purchasing is that function which is responsible for the acquisition of goods and services necessary for the continued operation of the firm. This activity is concerned specifically with goods and services procured for internal consumption. A primary activity of industrial purchasing is sourcing - locating, qualifying and selecting sources of supply. Sourcing objectives are continuity of supply and the location, development and management of a supply base that affords the firm a competitive advantage. Among the tasks typically undertaken by industrial purchasing organizations are international sourcing and logistics (Dobler, Burt and Lee, 1990; Bhote, 1989). Countertrade purchasing is an obvious extension of these activities.

INDUSTRIAL PURCHASING AND COUNTERTRADE

One of the early terms for countertrade's reciprocal activity was the more cumbersome but more descriptive term "counterpurchase sales" (Mandato, Skola and Wyse, 1978). This term appropriately focuses on a key element of this research - the counterpurchase obligation which the selling company undertakes in return for its sale.

Several studies (Bluestein, 1986; Carter and Gagne, 1988; Forker, 1990) have suggested that the favored way to fulfill reciprocal purchase responsibilities is to acquire goods which can be internally consumed. These are the goods

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with which the firm is most familiar, and therefore, the ones for which it should be best able to judge quality, manufacturing processes and competitive pricing. Other ways by which firms discharge reciprocal purchase obligations are through consumption by sister firms or divisions, or by asking suppliers to accept either countertrade goods or a share of the obligation. All of these solutions relate directly or indirectly to the firm's suppliers, specifically the domain of industrial purchasing. Not only may countertrade directly impact industrial purchasing and the firm's already-established supply base, it may also dictate a new set of countertrade suppliers and supply relationships which, in turn, impact both industrial purchasing and the established supply base.

Almost all of the literature to date has defined countertrade in transactional terms - from a marketing perspective. Operational definitions are necessary to relate the outcomes of the countertrade transaction type to the industrial purchasing behavior necessitated by them. For example, the transaction type, "buyback" is defined as a sale of plant, equipment and/or technology (PET) with a reciprocal agreement by the seller to take some or all of the output of that which is sold for a specified period of time.

It is immaterial to the industrial purchaser whether the buyback agreement specifies that the PET is to be paid for with output from the PET or that the buyback agreement

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specifies that the PET will be paid for in cash with the buyback agreement being to take and pay for a specific percentage of the output of the PET for a specified period of time. It is of great concern to the industrial purchaser whether or not the output of the PET is internally consumable, irrespective of any payment or marketing arrangements which the buyback agreement may contain. In other words, industrial purchasers are interested in the output of a buyback agreement if the PET firm acts as a supplier. While the purchasing function, in actuality, may be involved with output which will be resold or otherwise diverted, the selling or disposal activities are outside the strict definition of industrial purchasing, and therefore are outside the scope of this study.

Counterpurchase agreements are typically two separate cash sale agreements, connected by a third agreement - a protocol - specifying the terms by which the two cash sales will be tied together. Industrial purchasing is really interested only in the types of goods which must be reciprocally purchased, whether they are internally consumable, and the timing of the reciprocal purchase requirement. Goods which are to be resold are normally within the domain of marketing and distribution.

Offset agreements may involve many different activities from reciprocal purchases to local content requirements (a form of reciprocal purchase for internal consumption) to co-production commitments (a form of outsourcing). Offsets may

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even include such diverse activities as promoting tourism and starting unrelated businesses in the countertrading country to provide employment. The industrial purchasing function is specifically concerned with the reciprocal purchase of goods internally consumable either by the firm or its suppliers.

IMPORTANCE OF THIS RESEARCH

It is important to examine buyer-supplier relationship changes caused by countertrade for several reasons. Previous research has shown that countertrade is a large and growing international trade activity. The U.S. Department of Commerce, in 1984, estimated that 20 to 30 percent of all world trade involves some form of countertrade. Using twenty-five percent as an estimate of countertrade's magnitude, based on 1991 international trade value equal to approximately 4.2 trillion U.S. Dollars, countertrade transactions with a value of more than USD one trillion may have occurred in that year. As this activity continues to grow, firms collectively might incur an annual reciprocal obligation in excess of one trillion dollars.

Two studies indicated that more than 50% of the reciprocally purchased goods are consumed by countertrading firms or sister firms or divisions (Carter and Gagne, 1988; Forker, 1991). If that were to hold true for all countertrading firms, that could mean that more than USD 500 billion worth of raw materials, components and maintenance,

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repair and operating (MRO) supplies are being purchased each year from suppliers who are selected by other than conventional supplier selection criteria.

The supply base of a firm is a critical strategic asset. A focus of industrial purchasing today is on reducing the numbers of suppliers while increasing the quality of those who remain. The goal is to find the best world-class suppliers and then concentrate business with those. When developing a strategic supply base, a firm also strives to develop close, collaborative, long-term relationships with its suppliers (Bhote, 1989). The imposition of countertrade detracts from these efforts, since it expands the supply base and forces purchases to be made from suppliers who are selected for reasons of reciprocal obligation, rather than those of quality, availability and least total cost.

Since the needs of the countertrading firm are finite, orders placed with countertrade suppliers must either be transferred from existing suppliers, diverted from existing suppliers or taken from a firm's own production - outsourced². These source changes may have potentially damaging impact upon existing buyer-supplier relationships.

2. Outsourcing is defined as shifting tasks previously performed within the firm to outside suppliers.

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In 1987, Warren Norquist, Vice President of International Sourcing for Polaroid Corporation wrote the following:

Purchasing Management should look at items being purchased in the United States and try to determine which of these are or might be sourced overseas and could be used to offset countertrade.

At the same time, astute purchasing professionals should not overlook their suppliers. Many of these firms purchase a considerable volume of parts and materials from overseas sources. By persuading a supplier to accept countertraded exports from a country to which it would like to sell - rather than bringing them in-house directly - the multinational company has expanded its range of alternatives for disposing of such exports and thus increased its chances for success.

Therefore, in developing its strategy, creative purchasing management should study not only its firm's material requirements, but it should compile and carefully study a list of its suppliers' requirements as well. (Norquist, 1987)

In describing the results of their study of sixty-nine Fortune 500 companies, Carter and Gagne (1988) reported that:

Perhaps the primary reason multinational companies shift a share of their purchases to offshore sources is to satisfy countertrade obligations in customer countries.

Fifty-three percent of the companies surveyed said that they continued to source from suppliers after the countertrade arrangement was completed.

More important, twenty-seven percent of these same companies stated that the purchasing department initiated contacts with prospective trading partners. In these cases, purchasing first identified potential sources of supply in countries with mandatory countertrade laws, and only then involved the marketing function; this is a clear reversal of conventional countertrade roles.

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In 1986, Electronics Purchasing magazine undertook a survey of purchasing managers of the Electronics Business magazine's top 200 electronic firms. (Bluestein, 1986)

A striking feature of the survey results is the apparent ease in which respondents are able to accept foreign products and use them internally. Fifty percent of those surveyed report they are able to use 100% of the products accepted under countertrade within their firm's operations.

From these examples, it can clearly be seen that countertrade is changing the traditional buyer-supplier relationship in several important ways.

- * There is a shift in purchases from existing suppliers to countertrade suppliers. This shift is growing as countertrade expands.
- * In some cases, long term relationships with countertrade suppliers evolve. These suppliers may permanently displace previous suppliers.
- * Domestic suppliers, in some cases, become involved in the countertrade obligations of their customers.
- * Buyers may view existing suppliers not only in terms of goods or services they supply, but as a means of assistance in discharging countertrade obligations.
- * Countertrade may result in the imposition of several levels of reciprocity on international transactions, involving not only a firm's direct suppliers, but entire supply chains, as well.

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RESEARCH QUESTIONS

The changes in industrial purchasing practices and activities brought about by the reciprocal purchase requirements of countertrade may impact both basic buyer-supplier relationships and strategic supply base objectives. These effects lead to the following research questions.

Question One

Is there a favored method of disposal of countertrade reciprocal purchases? The purpose of Question One is to validate the deduction from previous research, that internal consumption is the favored method. A comparison of the preference of internal consumption to other methods of disposal is made by determining the rank orders of preference of each of the three options; internal consumption, supplier involvement and third party resale.

Question Two

When firms elect to internally consume reciprocal purchases from new countertrade suppliers, given finite needs, they must then choose to withdraw orders from existing suppliers, divert new orders from existing suppliers, or outsource tasks previously performed in-house. What are the factors which influence the choice among these options?

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Question Three

What are the impacts of disposal option decisions, source shift options and supplier reaction decisions on relationships between the countertrading firm and its existing suppliers?

Six choices are proposed for suppliers faced with customers who have reciprocal purchase obligations. In the first case in Figure 1-3 below, that of the Proactive Volunteer, the supplier works with the countertrading firm from the outset of the transaction. The supplier may even anticipate the need to countertrade and assist in actively seeking out mutually beneficial opportunities. This type of firm is characterized by early and substantial participation in the reciprocal obligations of its customers. It was anticipated that the buyer-supplier relationship would be strengthened for Proactive Volunteers.

The Active Participant supplier will become involved in the reciprocal obligations of its customers, but only when required to do so. It is likely to participate to maintain its place as a supplier to the countertrading firm, but the buyer-supplier relationship may deteriorate.

The Partial Participant firm may participate in its customers' reciprocal obligations, but only after requests from the countertrader, and only to a limited degree. This unenthusiastic participation, may result in deterioration of the buyer-supplier relationship.

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Token Participants will resist involvement in customers' reciprocal obligations, but after considerable pressure will make a token effort. This unwillingness probably would be perceived negatively by the buying firm and would likely damage the relationship between the firms.

Countertraders who only request, but do not pressure their suppliers may find passive responses such as the Decliner who would likely ignore the participation appeal. This would have a negative impact on the buyer-supplier relationship.

There will be no participation by Refuser firms. Not only do they refuse to become involved in their customer's reciprocal obligations, but they may even be deleted as a supplier by the countertrader. Even if these firms remain suppliers, relationships may suffer major deterioration.

		Supplier Responses		
		Active	Partial	Passive
Buyer Actions	Request	Proactive Volunteer	Partial Participant	Decliner
	Require	Active Participant	Token Participant	Refuser

Figure 1-3

Supplier Responses to Countertrade Customer Actions

RESEARCH METHODOLOGY

This research has a twofold purpose; to test initial hypotheses regarding the outcomes of the research questions

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and to develop and refine a theory of changes to existing buyer-supplier relationships resulting from imposition of reciprocal purchase obligations. To accomplish this dual objective, it is necessary to use a combination of quantitative and qualitative procedures. Quantitative procedures are used to capture demographic data, preferences and scaled perceptual data and to test hypotheses. Qualitative methods are used to address "why" questions and to build breadth and depth into the informational base which leads to theory construction. The combination of methodologies provides both statistical validity and practical relevance.

SUMMARY AND ORDER OF DISSERTATION PRESENTATION

This first chapter has described the problems of countertrade reciprocal purchase obligations as they relate to the industrial purchasing function and the supply base of countertrading firms. The growth of this activity has the potential to significantly impact buyer-supplier relationships and corporate strategy. Research issues have been presented, a conceptual framework developed, and research questions have been derived.

The second chapter reviews applicable literature relating to countertrade and industrial purchasing. Each of the previous studies is reviewed. The theoretical bases for the conceptual framework are established.

Chapter Three discusses case research methods and develops the methodology for this research. It includes the

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description of constructs and their measures, and presents hypotheses related to each research question.

Results of this research are presented in Chapter Four. Both quantitative and qualitative data relating to each of the research questions are presented. Hypothesis tests are shown and results discussed.

The fifth chapter contains a summary of the key findings of this research and a discussion of the significance of each. The two primary frameworks derived from the research, the buyer-supplier dyadic relationship framework and the general conceptual framework of buyer-supplier relationship impacts from the reciprocal obligations of countertrade are explored in detail.

Limitations of the research are discussed, followed by suggestions for future research. Managerial implications of the research results are discussed along with related issues.

The appendices contain the survey guides and case study information. The Countertrade Bibliography and Methodological References conclude this dissertation.

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CHAPTER II

REVIEW OF RELEVANT LITERATURE

Three important decisions, two by purchasing agents of a countertrading firm, and the other by existing suppliers to such a firm, bear upon buyer-supplier relationships. Buyers must choose the means of disposal of goods purchased to satisfy countertrade reciprocal obligations. If they elect to internally consume such goods, they must then determine how to divert or shift orders from existing suppliers who then, either directly or indirectly become involved in the reciprocal obligations of their customers. The outcome of this is to impact relationships between the countertrading firm and its existing suppliers. This chapter examines the literature relevant to those three key countertrade-related decisions.

Central to this research are the types of countertrade in which firms engage, the reciprocal obligations which result, and the ways firms choose to dispose of reciprocal purchases. Literature pertinent to each issue is brought forward. The involvement of suppliers in the countertrade obligations of their customers is highlighted. The importance of maintaining close, collaborative buyer-

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supplier relationships is shown. Finally, the impacts of these decisions on buyer-supplier relationships are theorized.

COUNTERTRADE AND INDUSTRIAL PURCHASING

The interaction of industrial purchasing with countertrade occurs at many levels. Countertrade reciprocal purchases are integrally related to other international sourcing activities. Carter and Gagne (1988) indicate that countertrade may be the leading reason why firms source internationally. Supply base reduction is an objective which may be stymied by the need to add countertrade suppliers. As a consequence, the requirements of reciprocity may result in the use of suppliers who offer neither the best quality nor the least total cost. As more suppliers are utilized, purchasing leverage is diluted and product variability is increased. Purchasing practices may be significantly altered as a result.

The single most important task in purchasing is supplier selection (Leenders, Fearon and England, 1989). It is a purchasing agent's duty to find and use suppliers who best meet the needs of the firm at the least total cost. Supply base reduction, using only the best few suppliers, is a prevalent industrial purchasing strategy (Bhote, 1989). Suppliers who remain in a firm's reduced supply base, do so because of long-term, proven performance. It is the objective of both buyer and seller to develop long-term,

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close, collaborative relationships to facilitate meeting the ongoing requirements of the buying firm. Yet even as purchasers pursue this objective, countertrading firms must add countertrade suppliers who may not be among the few best.

It may well be difficult for both supplier and buyer if business must be shifted or diverted from a proven supplier to a new countertrade supplier to satisfy reciprocal requirements. If the volume of business with an existing supplier is reduced, leverage declines and prices may rise. Variability may increase and quality difficulties may result. The inclination of a supplier to go to extra lengths to meet a customer's needs may slip. Mutual dependence declines and cooperative activities may deteriorate. These are symptoms of a deteriorating relationship.

BUYER-SUPPLIER RELATIONSHIPS

Firms have adopted Just-in-Time manufacturing strategies which are critically dependent on impeccable supplier performance (O'Neal, 1987). Competition from offshore producers has increased markedly, as has the rate of technological change. Product life cycles are shorter, with the resultant premium on manufacturing flexibility (Speckman, 1988). To accommodate these and other changes, buyer-supplier relationships have evolved in the last decade from traditionally adversarial to cooperative (Landeros and

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Monczka, 1989). Buying firms are looking for assistance from their suppliers to gain competitive advantage and improve profitability. Suppliers are now expected to assist in product design, improve component quality and reduce costs (Speckman, 1988). Arm's-length relationships are unlikely to evoke supplier investments to improve quality, reduce costs, or manage the complexities of Just-in-Time practices (Kanter, 1989).

Buyers' limited resources dictate that these close collaborative ties can only be attained and maintained with far fewer suppliers than had previously been used. Single sourcing is a purchasing tool which results in the selection of a specific supplier with whom to concentrate purchases of a specific type. This practice results in elimination of adversarial attitudes, improved communication and better supplier response and performance (Treleven, 1987).

Relational marketing/buying, partnering, and strategic partnerships are all terms used to describe close, collaborative buyer-supplier relationships. Characteristics of these affiliations include trust, commitment, durability, consistency, goal congruence and joint problem solving (Dwyer, Schurr and Oh, 1987; Melnyk and Buddress, 1991). Each of these authors and many others, have shown the necessity to develop these partnership-like relationships to reduce both product and administrative costs, and to realize the resultant competitive advantage from the selection and use of only the best available suppliers.

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COUNTERTRADE RESEARCH

To date there have been fourteen studies of various aspects of countertrade. With one exception, an archival study (Hennart, 1990), all have been conducted by means of self-administered mail surveys. Five (Huszagh and Barksdale, 1986; Bates, 1986; Neale and Shipley, 1987; Choudry, McGeady and Stiff, 1989; Neale, Shipley and Dodds, 1991) were concerned with marketing issues and five (NFTCF, 1983; USITC, 1985; OMB, 1988; Lecraw, 1989; Hennart, 1990) focused on economic and international trade issues. Most were interested in the geographic sources of countertrades and the form or type of the agreement. All studies documented the growth and importance of countertrade. Many were concerned with the types of products acquired and sold under these agreements. Several offered prescriptives for successful countertrading.

Of the four (Bluestein, 1986; Carter and Gagne, 1988; Bingham and Quigley, 1990; Forker, 1991) which were purchasing-oriented, problems associated with countertrade, such as supplier quality, in-house use for reciprocally purchased goods, and the attractiveness of countertrade sources of inputs were mentioned. None, however, examined the impacts of countertrade practices on buyer-supplier relationships. All are summarized in Figure 2-1 at the end of this chapter.

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Bussard, (1984)

"Countertrade: A View from U.S. Industry."

This early survey, by the National Foreign Trade Council Foundation, was made of 110 countertrading companies. In it, firms identified types of countertrade used, types of products countertraded, and countertrade services used. Respondents were also asked about countertrade growth and problems. Of particular interest are the findings relating to industrial purchasing. Forty-five percent of the respondents reported that they absorbed some reciprocal goods within their firm or affiliates. Eight percent received assistance from suppliers to consume reciprocal goods.

U.S. International Trade Commission (1985)

"Assessment of the Effects of Barter and Countertrade Transactions on U.S. Industries."

Benefits of countertrade outweighed drawbacks according to the 523 respondents to this survey. Among the questions addressed in this research were global location of deals and types of goods involved. NATO countries and military exports dominated responses. Offsets and counterpurchases were the most common transaction types. Of the nineteen percent of all reciprocal purchases which entered the U.S., forty-two percent were consumed in-house by the countertrading firm. Both the number of countertrade transactions undertaken and the resultant reciprocal obligations grew rapidly during the 1980-1984 period of the survey.

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Huszagh and Barksdale (1986)**"International Barter and Countertrade: An Exploratory Study."**

The data base for this research consisted of eighteen known countertrading firms. They were queried regarding the global region in which their countertrade transactions took place (Eastern Europe was most frequent). They also provided information about company objectives, product or service offered, markets involved and time span of deals. Advantages and disadvantages were discussed. It is interesting to note that even with this limited sample, 147 transactions were reported for the 1975-1981 time span, involving 75 different countries. Since this research was entirely marketing-oriented, no questions related to purchasing were posed.

Bluestein (1986)**"Countertrade in Electronics is on the Rise."**

This is a somewhat unusual survey in which one magazine (Electronics Purchasing) used another's (Electronics Business) list of top 200 electronics firms to poll purchasing managers of those firms about their involvement with countertrade. Unfortunately, the article does not mention a response rate or the number of respondents, only listing results by percentage of respondents. Nevertheless, there were several interesting results. First, fifty-one percent of respondents' companies had been involved in countertrade in the last year. Thirty-eight percent said they were able

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to accept electronic components as part of their reciprocal purchases. Most importantly, fifty percent said that they were able to use in-house, 100 percent of the products accepted under countertrade. Several executives interviewed for the article mentioned working to get credit for suppliers' and subcontractors' purchases from the countertrading country.

Bates (1986)

"Are Companies Ready for Countertrade?"

Although this survey had 138 usable responses, only 16 were from countertrading firms. Strangely, questions relating to difficulties encountered in international transactions were posed, but specific questions about countertrade were absent. The focus of this study was entirely marketing and financial, with no recognition given to the reciprocal half of countertrade transactions.

Carter and Gagne (1988)

"The Dos and Don'ts of International Countertrade."

Of all of the countertrade research to date, this study best describes the involvement of industrial purchasing with countertrade. Sixty-nine Fortune 500 firms responded to this survey with information about transaction types and reciprocal purchasing activities.

Carter and Gagne found that offsets and counter-purchases were by far the most common countertrade transaction types. In responding to these requirements, the

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purchasing function is often responsible not only for buying reciprocal goods, but also for disposing of those which will not be internally consumed. More than one quarter of the responding companies said that the purchasing department initiated contact with suppliers in the country requiring countertrade before marketing became involved.

A surprising observation was that, "Perhaps the primary reason multinational companies shift a share of their purchases to offshore sources is to satisfy countertrade obligations in customer countries (p. 35)." This bears directly on the issue of existing supplier relationships and countertrade obligations. The results indicated that 53 percent of respondents continued to source from countertrade suppliers after obligations were satisfied. Seemingly, these new countertrade suppliers have permanently displaced previous suppliers. Finally, the authors conclude that the trend in countertrade seems to be away from short-term, one-time transactions and toward long-term relationships, which might indicate a more permanent displacement of existing suppliers by new countertrade suppliers.

Office of Management and Budget, (1988)

"Offsets in Military Exports"

Contractors for the Department of Defense were addressed in this survey. All of the thirty-six who responded were engaged in offset transactions. Distinctions between different types of countertrade become murky in this study

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because any reciprocal transactions directly related to the military exports were defined as, "direct offsets", while transactions involving unrelated goods were defined as, "indirect offsets". For example, if a country purchasing aircraft requires components to be sourced in that country, the deal is a "direct offset". If the aircraft manufacturer was allowed to buy any unrelated goods in order to fulfill its reciprocal obligation, then "indirect offset" occurs. Unfortunately, this classification is common in the defense industry, where "offset" is often synonymous with "countertrade", and includes counterpurchases and buybacks in both direct and indirect offsets.

Among the data derived from this survey were most common global areas, (Israel, the European Participating Group consisting of Belgium, Denmark, Norway and the Netherlands, as well as Canada and Australia), types of goods most commonly sold (aircraft and related parts), and problems encountered. Purchasing-related problems included restrictions which these transactions placed on the buying process and increased purchase costs and administration. During the seven years covered by this survey (1980-1987) respondents reported that fifty-seven percent of sales involved offsets.

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Neale and Shipley, Shipley and Neale (1987-89)³**"Effects of Countertrade - Divergent Perceptions Between Practitioners and Non-Participants."**

In 1985, the authors mailed questionnaires to the marketing directors of the London "Times 1000" firms. They received 217 usable responses, of which 57 were from "countertrading" firms. Included in this number were thirty-five international countertraders and twenty-two domestic countertrading firms. This is a distinction not made in previous studies. Domestic transactions, typically conducted as barter agreements, are ordinarily not classified as "countertrade", a word normally associated with international transactions. Perhaps the explanation lies in the fact that most countertrade research has been conducted in the U. S., where in domestic markets, reciprocity is often illegal.

The survey investigated types of countertrade transactions (counterpurchase was most common), geographic area (Eastern Europe was most common) and benefits and problems of countertrade transactions. The fact that countertrade allows entry into difficult markets was the highest ranked benefit, followed by its ability to increase competitiveness. The top ranked difficulty was a lack of in-house use for reciprocally purchased goods. Similarly, countertrade

3. Using the same data base, Shipley and Neale wrote four articles between 1987 and 1989. They are consolidated, here.

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suppliers were not seen as an especially attractive source of inputs, ranking seventh out of eight choices. Countertrade, it might be inferred, was not seen as particularly beneficial to the purchasing function.

Customers' lack of foreign currency was the top ranked reason for entering into countertrade agreements, although eighty percent of the international countertrade firms stated that their main competition engages in countertrade, and twenty-nine percent had previously lost worthwhile overseas business through being unwilling to countertrade.

Lecraw (1989)

"The Management of Countertrade: Factors Influencing Success."

One hundred fifty-two firms responded to Lecraw's survey of American, Canadian and Japanese firms regarding countertrade activity. Marketing managers were asked about various factors related to the success of countertrade transactions. Export experience and countertrade experience were both highly significant to transaction success. Large firms selling high value, complex products appeared more successful than smaller firms selling standard products. Of particular interest to this research was the finding that the ability of the firm to consume reciprocal purchases internally or through normal distribution channels was a contributor to countertrade success.

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Choudry, McGeady and Stiff (1989)**"An Analysis of Attitudes of U.S. Firms Towards Countertrade."**

Comparisons were made in this study between the attitudes of both countertrading and non-countertrading firms toward this form of commerce. Although sixty-two firms responded, only seven had any countertrade experience. Respondents were asked about the importance of various functional attributes to countertrade. Marketing, financial and political issues were the most significant, with "Controlling overseas technology flow" being most important (4.0 on a five point scale). The seven indicated that the importance of trading goods that match firms' in-house needs rated 3.0, while receiving goods of expected quality was more important at 3.71.

Hennart (1990)**"Some Empirical Dimensions of Countertrade"**

Of all of the countertrade research undertaken to date, this is the only study which did not collect data via a mail survey. Hennart produced an archival investigation of 1277 countertrade transactions reported in Countertrade Outlook between 1983 and 1986. The purpose of his research was to derive succinct classifications and definitions for the various forms of countertrade transactions. In this pursuit, Hennart focused on the countertrade agreement itself where a reciprocal obligation is created; the first half of the transaction. He then developed the most

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comprehensive countertrade framework available to demonstrate the various forms of countertrade and their characteristics.

Of special value here is his Classification of Forms of Countertrade (Figure 1-1), which defined the three forms of countertrade agreement that result in reciprocal purchase obligations. Counterpurchases and buybacks limit reciprocal commitments to purchases, while offsets typically include purchases as well as other forms of reciprocity. The taxonomy is important to this research, since responses to this sort of commitment, and resultant buyer-supplier relationship changes are its central focuses.

Forker (1991), Carter and Gagne (1988) and others have identified these three countertrade types as encompassing the vast majority of all countertrade agreements. This characteristic provides the broad foundation of this research, as it extends the concepts of Hennart's framework to encompass the second half of the countertrade transaction - fulfillment of the reciprocal obligation.

Bingham and Quigley (1990)

"Purchasing Managers' Knowledge of Countertrade: Implications for Marketers."

A questionnaire was mailed to 1462 members of the National Association of Purchasing Management who attended the 1990 NAPM International Conference. 516 usable questionnaires were returned. Comparisons were made between countertrade and non-countertrade firms across several

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dimensions. As with other studies, the primary problem of countertraders was their inability to use reciprocal goods in-house. As a benefit of countertrade, its sources of attractive inputs rates less than three on a five point Likert scale. Unfortunately, this research did not make the distinction between domestic barter and international countertrade, so results are not comparable to those of other studies.

Forker (1991-92)⁴

"Countertrade: Purchasing's Perceptions and Involvement."

Of all of the countertrade research to date, Forker's study is the most extensive to involve purchasing issues. It compares perceptions of purchasing practitioners of countertrade with those of non-participant purchasers and covers the period 1985 to 1989.

Relative to this research, the following information is useful. Of the seventy-two respondents who were countertraders, their mean score on a five point scale, where one strongly disagrees and five strongly agrees, was as follows:

CT is a means of accessing attractive purchases:	3.04
Firm has no in-house use for CT goods:	2.92

Reciprocally purchased goods were divided between those which entered the U.S. and those which did not. In each of the five years covered, more than sixty percent of reciprocal purchases entered the U.S. as imports. In 1989,

4. Two works by this author resulted from the same information and data base.

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of the sixty-one percent of goods which entered the U.S., 61.9 percent were consumed in-house. Of the remaining thirty-nine percent of reciprocal goods that did not enter the U.S., 36.2 percent were consumed by a foreign affiliate of the countertrading firm. Overall, then, 37.8 percent of reciprocal goods were used in-house in the U.S. ($.61 \times .619$), while 14.1 percent were consumed by foreign affiliates ($.39 \times .362$) for a total internal use of more than fifty-one percent.

Neale, Shipley and Dodds (1991)

"The Countertrading Experience of British and Canadian Firms."

In this study, Shipley and Neale expand their original research with the aid of Canadian, J. Colin Dodds, to include a comparison of marketing executives' attitudes toward countertrade on both sides of the Atlantic. Thirty-five U.K. and twenty-one Canadian respondents provided information about primary countertrading regions (Eastern Europe, USSR and Far East), countertrade form (preponderance was "counterpurchase") and reasons for increasing countertrade (customers' diminished access to foreign currency) with great similarity. In addition, respondents' top five rankings of benefits of countertrade were marketing-related items, led by difficult market entry and increased competitiveness.

The item, "provides source of attractive purchases," ranked seventh on both lists of benefits, indicating that

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this is not a major attraction. Another purchasing-related item, "firm has no in-house use for goods offered by customers," was the first ranked problem for countertraders of both samples. This is significant because it indicates both an inclination to internally consume and a difficulty in doing so.

Overall, the results of the two sets of information showed a high rank correlation with similar benefits and problems cited. It is clear, however, that purchasing issues are perceived in the latter category.

KEY CONCLUSIONS

It is instructive to note the paucity of actual countertrade information throughout the previous fourteen studies. For example, Bates (1986) had 138 respondents to her survey, but only 16 were countertraders. Similarly, the Neale and Shipley data base (1987, 1988, 1988, 1989) was built from 217 respondents, only 35 of whom were international countertraders; Choudry, McGeady and Stiff had 62 respondents including only 7 countertraders; Bingham and Quigley received 516 responses to their questionnaire, but only 36 were countertraders. This suggests that perhaps another methodology might be successful in collecting data from actual countertraders.

Carter and Gagne (1988) indicate a major reason for offshore sourcing is to order goods from countertrade suppliers to satisfy reciprocal purchase obligations.

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However, many authorities recommend limiting countertrade to a small portion of total sales (Norquist, 1987; Alexandrides and Bowers, 1987). If a firm were to follow this advice, then it potentially risks harming relationships with existing suppliers on whom it will continue to depend, for small, perhaps even temporary, sales gains. This effect, heretofore unexplored, may cause firms to reconsider before entering into countertrade transactions.

The USITC survey in 1985 indicated that less than twenty percent of reciprocally purchased goods entered the U.S. Five years later, Forker(1990) found that for the five years of her study (1985 through 1989), an average of over sixty-two percent of these purchases were imported. All of the research shows that the incidence of countertrade is increasing and the percent of imports of reciprocal purchases is doing likewise.

If countertrading firms prefer to consume such purchases, then a significant portion of these firms' raw materials, components and operating supplies is now being provided by countertrade suppliers who have at least partially displaced existing suppliers. In Carter and Gagne's 1988 survey, fifty-three percent of respondents said that they continued to use countertrade suppliers after the reciprocal obligation was complete. Supplier displacement may well result in permanent loss of business for existing suppliers.

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Walsh wrote of the effects of countertrade on third country suppliers (Walsh, 1985).⁵ The countries studied for his article were market oriented as opposed to centrally planned, and the transactions examined were non-military. These distinctions are important, as this type of deal is most closely related to typical non-countertrade commercial transactions. Walsh defines third country markets as non-participating foreign firms, and writes as follows:

Third country markets are comprised of foreign firms not participating in a specific countertrade arrangement. These third country firms may be traditional foreign suppliers to the firms undertaking countertrade⁶, or they may make up a new export market for the countertrading firms. Under normal market conditions (without mandated countertrade) firms in third country markets would be competing head-to-head in international markets with the firms now undertaking countertrade. But, because mandated countertrade prevents international market forces from fully operating, firms not part of a countertrade arrangement are competitively disadvantaged. They are unable to compete head-to-head on price or quality in international markets. The package of countertrade offerings becomes another competitive element of greater importance than price or quality elements, thus putting those firms not countertrading at a competitive disadvantage despite their comparative advantages (p. 593).

Countertrade restrictions tend to impact firms directly and adversely in third country markets in two ways: (1) by enabling countertrading firms to displace third country suppliers in foreign markets and (2) by closing to third country suppliers the home markets of countertrading firms (p. 592).

5. James I Walsh was, at the time of this article, Senior International Economist with the U.S. Department of Commerce and responsible for countertrade policy for the Office of Trade Finance.

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Mandated countertrade and its implementing restrictions lead to displaced competitive third country firms in saturated world markets and reduced market potentials for third country firms in international growth markets (p. 596).

Here, Walsh discusses the impacts of countertrade on third country firms. The same argument could be made for the effects of countertrade on the existing suppliers of the countertrading firm. If one were to replace the words "third country firms/markets" with "existing suppliers", the meaning of Walsh's arguments would be retained while placing the article in context of this research. In other words, countertrade suppliers may well displace other suppliers to a countertrading firm, in spite of the comparative advantages of existing suppliers.

CHAPTER SUMMARY

This chapter has shown that countertrade is a large and growing international trading activity. Countertrading firms frequently choose to internally consume reciprocal purchases from such transactions. Existing suppliers to countertrading firms may be at least partially displaced by new countertrade suppliers. The purchasing strategies of reducing the supplier base and developing close, collaborative relationships with the remaining proven suppliers may be hampered by the necessity to find and add suppliers of any kind from within a countertrade country.

Finally, the relationships between the countertrading firm and its existing suppliers may be damaged by these

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reciprocal obligations. Fewer orders may go to existing suppliers or they may be forced to participate in the reciprocal obligations of their customers.

By and large, the literature of countertrade is anecdotal and prescriptive. Very few authors have looked beyond the creation of a countertrade agreement and the making of a sale to the second half of the transaction - the complexities of reciprocal obligation fulfillment. As can be seen from Figure 2-1, only three studies have concentrated extensively on the purchasing-related issues of countertrade. Only one (Carter and Gagne, 1988) has even considered the issue of buyer-supplier relationships in context of countertrade. None has looked beyond the transaction to determine the impacts of fulfillment activities on the ongoing operations of the firm and on the buyer-supplier relationships so essential to remaining competitive in today's marketplaces.

To place the research questions in context of existing literature, it is instructive to review each in turn. The first is concerned with the methods of disposing of goods acquired by reciprocal purchase.

Question One

Is there a favored method of disposal of countertrade reciprocal purchases? The purpose of Question One is to validate the deduction from previous research, that internal consumption is the favored method.

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Each of the possible methods: internal consumption, supplier involvement, or resale to third parties, has been discussed individually and severally in the literature. However, each mention has been in context of obligation fulfillment, without regard for the consequences of these options relative to the existing supply base. This research addresses not only the choice of method, but the impact of the selection on relationships with existing suppliers.

Question Two

When firms elect to internally consume reciprocal purchases from new countertrade suppliers, given finite needs, they must choose to withdraw orders from existing suppliers, withhold new orders from existing suppliers, or outsource tasks previously performed in-house. What are the factors which influence the choice among the options?

This question speaks to the indirect involvement of existing suppliers in customers' countertrade transactions through loss of business to new reciprocal suppliers. Again, the literature is silent both on this issue and its impact on relationships with existing suppliers.

Question Three

What are the impacts of disposal option decisions, source shift option decisions and supplier reaction decisions on relationships between the countertrading firm and its existing suppliers?

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No research to date has considered, in any way, the existing suppliers to a countertrading firm. They are, however, critical to the ongoing operations of that organization. How suppliers respond to the countertrade firm's decisions of Research Questions One and Two may well have a significant impact on the relationships between the firms.

In Chapter Three, the methodology of this research is defined. A combination of both quantitative and qualitative techniques is used. Both countertrade firms and their suppliers were interviewed. The means of determining the existence of buyer-supplier relationship changes is discussed. If changes occur, it is equally important to determine both their direction and magnitude. The mechanisms by which these are to be measured are likewise defined in Chapter Three.

Research	Year 1	Year 2	Methodology			# Respondents	# Int'l CT Firms	General Information				Problems				Purchasing-Related Issues				
			Mail Survey	Archival	Case Study			CT Firms	Global Acc	Goods	Procs & Cons	Growth of CT	Quality Problems	No In-House Goods	Sell Elsewhere	Possible Input Sources	Internal Consumept	Supplier Consumept	Supplier Involve	Purch. Involvement
Bussard	84	E	✓			110	110	✓	✓	✓	✓	✓	✓			✓				
USITC	86	E	✓			263	NA	✓	✓	✓	✓	✓	✓							
Muzogh & Bertoldo	86	M	✓			18	18	✓	✓	✓	✓	✓	✓							
Bluestein	86	P	✓			NA	NA	✓	✓	✓	✓	✓	✓			✓				
Bates	86	M	✓			138	18		✓	✓	✓	✓	✓							
Center & Gagne	88	P	✓			88	88	✓	✓	✓	✓	✓	✓			✓				✓
OMB	88	E	✓			36	36	✓	✓	✓	✓	✓	✓							
Neale & Shipley Shipley & Neale	87- 88	M	✓			217	35	✓	✓	✓	✓	✓	✓							
Leozaw	88	E	✓			162	152	✓	✓	✓	✓	✓	✓							
Choudry et al	88	M	✓			82	7		✓	✓	✓	✓	✓							
Hennert	89	E		✓		1277	Trans	✓	✓	✓	✓	✓	✓							
Bingham & Oudjley	90	P	✓			616	36	✓	✓	✓	✓	✓	✓							✓
Ferlar	91	P	✓			288	72	✓	✓	✓	✓	✓	✓							✓
N, S & Dodds	91	M	✓		UK CAN	217 136	21 21	✓	✓	✓	✓	✓	✓							

1 Year in which research was published.

2 Focus of research: Economic/Int'l Trade, Marketing, Purchasing

SUMMARY OF COUNTERTRADE RESEARCH

Figure 2-1

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CHAPTER III

RESEARCH METHODOLOGY

INTRODUCTION

This chapter begins with a brief overview of previous countertrade research methodology. Following thereafter are discussions of the basic unit of measure for this research and dyadic relationships of buyers and suppliers. The case method of research is described and discussed as are its data analysis techniques. The sample for this research is defined and research questions and hypotheses posed. Hypothesis testing is described, followed by conclusions to this chapter.

PREVIOUS RESEARCH

When investigating a phenomenon, a researcher often has the choice of several methods of investigation. At times, the problem itself indicates a best choice. At other times, circumstances and resources influence choice. Often, precedent is a significant influence in choosing an appropriate methodology. Of all of the extant countertrade research, one study was archival (Hennart, 1990); all the rest have been by self-administered mail surveys.

Strengths of archival studies include the ability to span long periods of time, including the ability to look back in time, and to cover large populations. The primary disadvantage is currentness; the ability to determine present states and to acquire and assess future expectations which might be available from interaction with live subjects. There is also no control of the collection of archival data.

A mail survey has the advantages that it is easy to administer and yields data which lends itself to quantitative methodology, yet it often suffers from the inability to probe hidden meanings and provide a richness, depth or "thickness" to the data. Extensive use of this methodology has resulted in the discovery of substantial information about countertrade, but has not provided depth or richness.

Alternately, case studies address both of those weaknesses. While they have other methodological difficulties, they do offer the opportunity to probe the "why's" of relational changes, and to pursue unsuspected insights as they arise and to add depth and richness to phenomenological knowledge. Problems associated with case studies often include massive amounts of data which may prove difficult to sort and relate, and lack of broad generalizability of results.

This research has a twofold purpose: to test initial hypotheses regarding the outcomes of the research questions

and to develop and refine a framework characterizing changes to existing buyer-supplier relationships resulting from imposition of reciprocal purchase obligations. The methodology necessary to accomplish this dual objective involves a combination of quantitative and qualitative procedures. Quantitative procedures were used to capture demographic data, preferences and scaled perceptual data and to test hypotheses. Qualitative methods were used to address "why" questions and to build breadth and depth into the informational base which leads to theory construction. This combination of objectives is ideally suited to case methodology, as structured interviews not only allow accumulation of quantitative data, but the probing of reasoning and explanation for events and actions. In addition, the combination of methodologies enables the researcher to confirm findings through triangulation of the two data forms. Qualitative findings can be confirmed through questions during the structured interviews.

UNIT OF ANALYSIS

The fundamental activity in marketing or purchasing channels is the transaction - the act of exchange between two economic agents (Achrol, Reve and Stern, 1983). The buyer-supplier dyad, with its transactions and relationships is picked as the primary unit of analysis for this research.

Focusing on transactions as the basic activity compels a dyadic perspective in which the relationship between the two transacting parties is highlighted.

The focus in transactional level analysis is on how and why different transactions are created, carried out or avoided between channel members. (Achrol, Reve and Stern, 1983)

Another compelling reason for choosing the dyad as the unit of analysis was that it allows the methodical examination of bilateral transactions when third party influences interact. Such a framework should be useful for theory development and testing (Achrol, Reve and Stern, 1983).

DYADIC RELATIONSHIPS

Without the reciprocal requirements of countertrade, the primary dyad - that of the multinational firm and its countertrade customer, and the secondary dyad - that of the multinational firm and its supplier, would be representative of the typical marketing channel and its actors. The reciprocal purchase obligations resulting from countertrade agreements, however, interpose the addition of tertiary and perhaps quaternary dyads as shown in Figure 3-1 below.

These additional relationships obviously complicate a transaction. Besides, they expand the buyer-supplier relationships which the countertrade firm must manage, and counter the objective of supply base reduction. They complicate the supply chain, perhaps introducing additional variability and attendant potential quality problems. In terms of this research, countertrade suppliers represent potential impacts on relationships between the countertrading firm and its existing suppliers.

Suppliers could become directly involved with the reciprocal obligations of their customers. They might do so by assuming a portion of the obligation and purchasing directly from countertrade suppliers. Such transactions are then credited against their customer's obligations.

Indirect involvement occurs when business which might otherwise be awarded to existing suppliers is diverted or withheld in favor of new countertrade suppliers. Figure 3-1 illustrates the buyer-supplier relationships which might occur and might be changed under countertrade constraints.

It should be noted that there are two types of transactions which are represented. The first is the countertrade transaction by which the reciprocal purchase obligation is created. This takes place within the primary dyad. Thereafter follow several possible sourcing transactions by which the reciprocal obligation is fulfilled - secondary through quaternary dyads. This research is primarily concerned with the sourcing transactions which occur as a result of countertrade's reciprocal requirements.

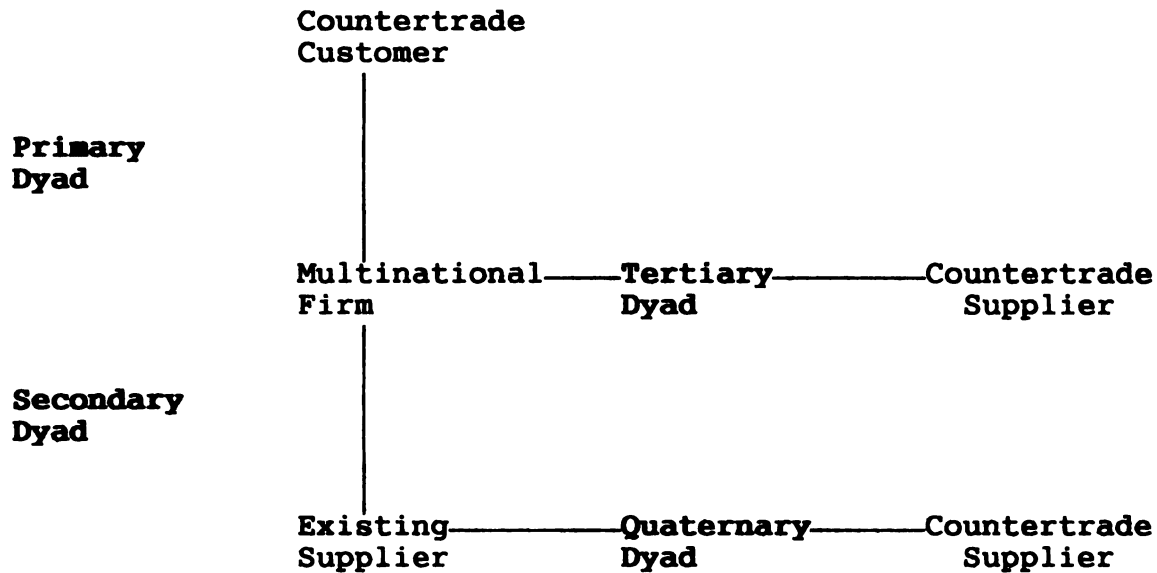


Figure 3-1

Dyadic Relationships Under Countertrade Involvement

CASE METHODOLOGY

The Grounded Theory approach to qualitative research involves a systematic set of procedures to develop an inductively derived theory about a phenomenon. It is discovered, developed and provisionally verified by collection and analysis of data pertaining to the phenomenon (Glaser and Strauss, 1967; Strauss and Corbin, 1990).

In a sense, the work of several research methodologists comes together in the extension of Grounded Theory as described by Yin (1989). A theory is developed, based on a pilot study, previous studies, archival research or empirical knowledge. A data collection protocol is designed and cases are selected for analysis. In analyzing data, the

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researcher uses what is described as a "case cluster method" (McClintock, Brannon and Maynard-Moody 1979). Here, as in Yin's (1989) "pattern matching", the researcher compares theoretical outcomes to actual outcomes.

Replication, not sampling logic is used to analyze data for comparison with theory. If case outcomes conform to prediction, or if outcomes are contrary, but for predictable reasons, then replication provides compelling support for theory. This procedure and analysis is akin to experimental design and cross-experiment analysis.

Yin uses pattern matching and replication logic to confirm or disprove theory. He describes four types of research designs for the case study method. They involve single or multiple cases and single (holistic) or multiple (embedded) units of analysis. This research is of the Yin Type Three design - multiple cases with a single unit of analysis. Relationship changes in the buyer-supplier dyad resulting from involvement in countertrade are studied across four countertrade firms and four suppliers to each.

DATA ANALYSIS

Many authors (Strauss and Corbin, 1990; Mc Donald, 1985; Miles, 1979) have commented on the at-times-overwhelming volumes of data generated by most qualitative research projects. McClintock, Brannon and Maynard-Moody (1979) proposed that stable units of analysis be carefully defined so that standard coding can be applied. The

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structured interview format facilitates this objective. This coded data is then aggregated across several cases to aid in causal inference as shown in McClintock, Brannon and Maynard-Moody's "case cluster method."

Strauss and Corbin (1990), in expanding on the original work of Glazer and Strauss (1967), also stress the importance of the coding process, grouping and labeling similar events and incidents for broader categorization. Yin (1989) refers to building and maintaining a "chain of evidence."

Analysis of data from this research followed the methodology described by Strauss and Corbin (1990). Initial coding of data (Strauss and Corbin refer to this as "open coding") involves deriving categorical and conceptual labels to be applied to discrete events and phenomena. For example, in preliminary discussions with a leading counter-trader, it was noted that he preferred to internally consume reciprocal purchases when possible (Research Question One). He also employed diversion or withdrawal techniques (Research Question Two) when reallocating orders to new countertrade suppliers. However, he only did this with foreign existing suppliers, not domestic ones.

Initially, this response would be coded to identify the internal consumption preference and its relationship to Research Question One. Secondly, the responses noting use of diversion and withdrawal would be additionally coded as it relates to the question subsections. The interesting



division of existing suppliers into foreign and domestic categories warrants the establishment of another code to be used to accumulate additional evidence of this distinction.

The next step - axial coding - involves reassembling data in new ways by making connections between categories. Associating the foreign/domestic supplier categorization above with the strategy of reduced supply bases, a proposition arises questioning whether overall, foreign suppliers may be less valued or critical than domestic suppliers. If so, firms may be less willing to disrupt relationships with key domestic suppliers than they might be for foreign ones in order to satisfy countertrade terms.

Selective coding, the third process, involves clarification of the core category, the central phenomenon around which other categories revolve. The process systematically relates other categories to the core and validates relationships from data and provides refinement and development. At this stage, frameworks are validated against data to solidify grounding.

When devising a coding system for qualitative data, the researcher needs a system that is intuitive, easy to use and allows consistent replication while identifying commonality of event, occurrence or implication. In other forms of qualitative research, researchers act as passive observers who record all data, and then code and sort data to identify similar and related items. Here, the structured interview format pre-sorts much of the data. The structured interview

makes data classification much easier since the questions have specific purpose and relation to the research questions and are posed to all participants in the same order.

Miles and Huberman (1984) also offer extensive direction in the coding and analysis of data which will be relied upon. Marshall and Rossman (1989) however, caution against diminishing the ability of qualitative research to develop relationships among the data by overly mechanistic data analysis.

Data were initially coded by relationship to the three research questions; then by association with the individual sub-sections of each question. Tertiary coding sorted within-group information to further collate like items. Every unusual item was given its own unique code. Each time unusual items were encountered, the list was consulted to determine commonality with other unusual items. Appendix G illustrates coding scheme details.

REPLICATION AND GENERALIZABILITY

One of the often cited concerns about qualitative research is its generalizability. Bonoma (1985) compared quantitative and qualitative methods. He suggested that experiments, models and simulation have high statistical conclusion validity, but low real world validity, while field studies and case research are just the opposite. He then argued for a case research process of theory-data-

theory revision. This results in theory confirmation much like Yin's "pattern matching".

Donald Campbell (1975) argued that within each case there are likely to be multiple examples of phenomenon. As such, degrees of freedom sufficient for hypothesis testing should be present. Such is the case with this research, as there are multiple purchase transactions within each countertrade transaction. The countertrade transaction may involve the sale by Boeing of AWACS aircraft for a fixed amount while agreeing to a reciprocal obligation. The purchase transactions required to meet reciprocal purchase obligations are likely to be many and varied.

Yin asserted that generalization is based on confirmation of theory through replication logic and procedures. Gummesson (1991) made a like argument when he discussed the similarity between generalization and validity, and noted that, "Validity means in essence that a theory, model, or category describes reality with a good fit...." Kennedy (1979) confirmed this view.

This collective argument then, suggests that there is indeed a logical rationale for generalization from even a single case study if the research is carefully defined, and focused replication is present.

FOCUS OF THIS RESEARCH

The first purpose of this research is to ascertain the preferred method of disposal of goods reciprocally purchased

in response to countertrade obligations. Second, when internal consumption is selected, the factors which are important in the selection of source shift options for orders placed with countertrade suppliers are identified. Third, it is important to examine suppliers' responses to direct or indirect involvement in the reciprocal purchase obligations of their customers.

The research identifies impacts of those reciprocal requirement responses on relationships between the countertrading firm and its existing suppliers. In-depth interviews were conducted with four countertrading firms and four existing suppliers to each of those firms.

SAMPLE SELECTION

Purposive samples are ones selected based on the judgement and prior knowledge of the researcher (Gay and Diehl, 1992; Judd, Smith and Kidder, 1991; Bailey, 1982). They allow selection of firms which are judged most appropriate for specific research and are most effective when selected with an objective basis of judgment. They are used in instances where the researcher may wish to study a small subset of a larger population, the extent of which is unknown (Babbie, 1973), as is the case for the population of countertrading firms.

Steps in the purposive selection process were three-fold. The initial step was the selection of known countertrading firms as detailed below. Next, countertrade trans-

actions were investigated to select those that create reciprocal purchase obligations. Finally, purchase transactions resulting from the reciprocal obligations were studied to determine their impact on the relationships between the countertrading firms and their existing suppliers. Multiple purchase transactions exist to fulfill the reciprocal obligation of each countertrade transaction. Purchase transactions made by the countertrading firm in response to reciprocal obligations were analyzed as the basis for hypothesis testing, not the countertrade transactions, themselves.

SELECTION CRITERIA

To determine changes in buyer-supplier relationships, reciprocal purchase transactions of four countertrading firms were examined. Firms were selected based upon company size, countertrade experience, industry diversity and willingness to encourage supplier participation in this research.

Results of the Forker (1991) study indicated that countertrade firms are predominantly large, with 66 percent of her respondents having more than 10,000 employees. The category Manufacturing/Processing was the line of business for the vast majority of respondents, being ten times greater than the next largest category. This led to the selection of large, manufacturing/processing firms as the countertrade firm subjects.

To gain maximum insight from interviews, it was essential that the selected firms have considerable countertrade experience. Firms which were classified as countertraders in previous research may have had experience with only one transaction. The aim here was to gain exposure to firms with ongoing countertrade programs and significant experience. To provisionally test hypotheses as broadly as possible, it was important to select a sample that was diverse in both industry and product type.

Firms selected for interview were willing to allow and encourage participation and involvement of their suppliers in this research. Without supplier participation, the third research question could only be partially addressed. Because of pledges of confidentiality required by all interviewees, participant firms are identified by letter or number only. The four countertrade firms are as follows:

Firm A: Military hardware; one of the earliest countertraders with a long history of successful transactions.

Firm B: Industrial products; countertrade manager has long experience and wide industry contacts.

Firm C: Consumer products; widely acknowledged as a leading countertrade practitioner.

Firm D: Commercial aircraft; several of its countertrade transactions have included the flowdown of reciprocal obligation to its suppliers.

Each company was asked to identify purchase transactions from each of the categories, "withdraw", "divert", and "outsource". Situations where firms have employed a

fourth category, the pass-through option, in which a supplier agrees to assume a portion of the reciprocal purchase obligation of the countertrading firm were also pursued. The countertrade firms were asked to identify suppliers associated with those purchase transactions. Four suppliers from each countertrade firm were identified and surveyed.

RESEARCH QUESTIONS AND HYPOTHESES

Changes in industrial purchasing practices and activities brought about by the reciprocal purchase requirements of countertrade may impact both basic buyer-supplier relationships and strategic supply base objectives. These effects lead to three research questions with their attendant hypotheses.

RESEARCH QUESTION ONE

Is there a favored method of disposal of countertrade reciprocal purchases? Previous research suggests that the preferred method of disposal of reciprocally purchased goods may be internal consumption (Foraker, 1991; Carter and Gagne, 1988). There have been no formal tests of this preference, however. To validate the deduction from previous research, a comparison was made of the rank orders of preference of the three options; internal consumption, supplier involvement, and third party resale. A Friedman Analysis of Variance was used to test the null hypothesis. This test is appropriate where several treatments are each applied to

three or more subjects. In this case, three different practices are compared for four different firms.

QUESTION ONE HYPOTHESIS

- H1o. Countertrading firms have no preferred method of disposal of reciprocally purchased goods.
- H1a. Countertrading firms have a preferred method of disposal of reciprocally purchased goods.

RESEARCH QUESTION TWO

When firms elect to internally consume reciprocal purchases from new countertrade suppliers, given finite needs, they must then choose one or more of three options. They may prefer to withdraw orders from existing suppliers, shifting the orders to new countertrade suppliers. Another option is to withhold orders which otherwise would go to existing suppliers and give them instead to new countertrade suppliers. Third, countertrading firms may outsource to new countertrade suppliers tasks previously performed in-house. What are the factors which influence the choice among the options?

Factors which might influence the choice among the source shift options include the following:

1. Volume of new and different requirements being generated within the countertrading firm (i.e. requisitions).
2. Percent of orders generated within the countertrading firm which are covered by long term contracts.

3. Level of volume commitments in contractual obligations.
4. Potential disruption to existing supplier relationships.
5. Level of design secrecy of goods or tasks to be shifted to countertrade supplier.
6. Stage of product life cycle of goods to be shifted to countertrade supplier.
7. Level of economic development of the countertrading country.
8. Form of the countertrade agreement: Counterpurchase, Offset or Buyback.
9. Type of countertrade sale: Products, Technology or Project.
10. Size of order backlog of countertrade firm.
11. Degree of unionization of countertrading firm.
12. Other factors.

Respondents were asked to rate the importance of each factor on each source shift option decision. They did so on a five point Likert scale, with one being the "least important" and five being the "most important" factors. The five point scale is used as a continuum of scaled responses. Five points is consistent with the need for the respondent to have sufficient breadth to adequately express perception without the unnecessary deliberation which might result from larger scales.

QUESTION TWO RESEARCH DESIGN

Question two defines the factors which are important in the source shift option decision, and the order of their importance. To do this, the purchasing manager for each countertrade firm was asked the importance of each of the eleven factors identified above to each of the three choices; withdraw, divert or outsource. In other words, purchasing managers of countertrading firms were asked questions such as, "If you were to decide to outsource (or withdraw orders, or divert new orders), how important would be each of the eleven factors to the decision?" Each respondent was asked for other factors which related to each of the options, but none were identified.

The simplest way to collect this information would have been for the respondent to rank-order the eleven (or more) factors. Kervin (1992) pointed out that a problem with this approach is that respondents usually have difficulty ranking long lists of items. In addition, simple ranking gives no comparisons between items other than that one is higher or lower ranked than another. How much more important is item two - say - than item three?

To resolve these difficulties, a two step process was implemented. First, respondents were asked to use the Likert scale described above to rate the importance of each of the factors. This divided the factors into five or fewer groups. Respondents were then asked to rank order each of the factors within each of the five or fewer groups. Using

the rank orders of the individual measures of importance, a composite rank order for all eleven factors was constructed. For example, all factors assigned the value "five" were those factors considered by the respondent to be the "most important" to a particular choice. The rank order of all "fives" was then placed above the rank ordered "fours" and so on through the least important factors. These responses constituted the first step in Yin's (1989) pattern-matching and replication methodology - the development of a pattern. Actual transactions were then used to verify and validate the generic description. In other words, the pattern should serve as a model of that specific type of decision, with the factors and their importance clearly identified. Replication of the pattern in actual transactions provides support for the pattern's authenticity.

From the accumulated data, an 11 factor x 3 choice matrix was constructed with four firm replications for each of the three choices. For example, under the "withdraw" option in the matrix below (Figure 3-2), the Firm A data are the factor importances described by the respondent from the first countertrade firm.

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	Withdraw				Divert				Outsource			
Firm	A,	B,	C,	D	A,	B,	C,	D	A,	B,	C,	D
Factor 1	Rank orders				Rank orders				Rank orders			
2	" "											
3												
.												
.												
11												

Figure 3-2

Balanced Complete Block Design

QUESTION TWO HYPOTHESES

- H2o. There will be no differences in rank orders of factors which influence the "withdraw" decision between the firms.
- H2a. There will be differences in rank orders of factors which influence the "withdraw" decision between the firms.
- H3o. There will be no differences in rank orders of factors which influence the "divert" decision between the firms.
- H3a. There will be differences in rank orders of factors which influence the "divert" decision between the firms.
- H4o. There will be no differences in rank orders of factors which influence the "outsource" decision between the firms.
- H4a. There will be differences in rank orders of factors which influence the "outsource" decision between the firms.
- H5o. There will be no differences in rank orders of factors which influence the source shift option decision across the three choices.
- H5a. There will be differences in rank orders of factors which influence the source shift option decision across the three choices.

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To test hypotheses two through four, a Friedman Analysis of Variance was made of the data for each of the options, individually. These tested the null hypotheses of no difference between the factor ranks across all of the firms for each specific option. Hypothesis five was tested using a Friedman Analysis of Variance for the 11 factors across all choices, across all four firms.

Regardless of which method of order reallocation a firm selects in Question Two, there are direct or indirect impacts upon the buyer-supplier relationships as a result of the choice. Direct impacts occur when suppliers either lose business to new countertrade supplier competitors or assume a portion of the reciprocal obligation of their customer. Indirectly, suppliers are affected when orders which they would have received in the absence of reciprocal obligations are now forwarded to new countertrade supplier competitors.

RESEARCH QUESTION THREE

What are the impacts of disposal option decisions, source shift options and supplier reaction decisions on relationships between the countertrading firm and its existing suppliers?

Purchase transactions and suppliers which were studied for Question Two were further examined for answers to relationship changes as described in Research Question Three. This third question also includes one issue beyond those of Question Two - that of the pass-through option.

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This required the analysis of another pair of transactions as described above, to fully address Question Three.

Six choices were proposed for suppliers faced with customers who have reciprocal purchase obligations. In the first case, the supplier considers countertrade a fact of business life and proactively works with the customer to address the reciprocal purchase obligation (Proactive Volunteer). Second, the supplier responds to requests, does some of what is asked, but not to the full extent of the request (Partial Participant). Third, after requests, but without pressure, the supplier may decline to become involved (Decliner). In the fourth instance, the supplier fully participates, but only after pressure is brought to bear by the customer (Active Participant). Fifth, the supplier elects only minimal participation, even in the face of customer pressure (Token Participant). Finally, a supplier may refuse to participate entirely, regardless of pressure by the customer (Refuser). Figure 3-3 below illustrates these six options.

		Supplier Responses		
		Active	Partial	Passive
Buyer Actions	Request	Proactive Volunteer	Partial Participant	Decliner
	Require	Active Participant	Token Participant	Refuser

Figure 3-3

Supplier Responses to Countertrade Customer Actions

An archtypical scenario was created for each of the six supplier response outcomes (see Appendices C or E). Each countertrade firm was asked to select the one which best represents the buyer-supplier situation for each of the purchase transactions identified at Research Question Two.

It was not expected that each firm will have transactional examples of each of the six characterizations. The goal was not to sample each cell, but to determine which cells are applicable and to what extent. For example, if a firm were to reach a policy decision allowing only requests, not requirements for participation by suppliers, then the entire lower row of the matrix would be eliminated. The answer to the question of request versus require reduced the options to only three.

Melnyk and Buddress (1991) described a transition in purchasing practices and consequently in buyer-supplier relationships when they noted that buyers no longer focus on just the product, but on the process which yields the product. This shift results in the evolution of close, collaborative, long-term relationships between buyer and supplier.

Dwyer, Schurr and Oh (1987) described this advanced phase of buyer-supplier relationships which they called "Commitment". It is characterized by relational continuity, solidarity, and cohesion. They categorize elements of these relationships as inputs, durability, and consistency.

Ten attributes of a close, collaborative buyer-supplier relationship are:

Inputs

1. The goods and their specifications.
2. Terms of Sale, including price and payment terms, quantity discounts and other negotiated elements.
3. Delivery promptness and completeness.
4. Communication.

Durability

5. Exercise of power.
6. Trust.
7. Formality.

Consistency

8. Commitment.
9. Expectations.
10. Mutual dependence.

Countertrade firm respondents were asked how each of the ten relational attributes changed following involvement in countertrade reciprocal purchase obligations. The same transactions used for Research Question Two provided the basis for this analysis.

A seven point Likert scale was used where,

- 3 = Large negative change
- 2 = Moderate negative change
- 1 = Slight negative change
- 0 = No change
- +1 = Slight positive change
- +2 = Moderate positive change
- +3 = Large positive change.

The seven point scale was chosen to allow respondents the choice of small, medium or large changes in each direction with a neutral midpoint. This larger scale was chosen over the more common five point scale as it averts the necessity for the respondent to select either "a little" or "a lot" when the perception is "some".

To complete the comparison, each of the existing supplier firms identified for Question Two were asked to follow the same procedure. First, they placed themselves in one of the matrix cells by choosing the best fitting scenario. They were then be asked to assess relationship factor changes in the same manner as did the countertrading firms. A Wilcoxon Signed Rank Test, which requires a minimum of four samples, was used for those groups of supplier types where sample size was sufficient. For groups where the requisite four samples were not present, a Sign Test was used. Although the Wilcoxon Test is the stronger, for the sake of consistency, the Sign Test was performed for the larger sample size cells, as well.

QUESTION THREE HYPOTHESES

- H6o. There will be no change in buyer-supplier relationship for firms classified as Proactive Volunteers in the Response Matrix.
- H6a. Firms classified as Proactive Volunteers will experience a change in buyer-supplier relationship.
- H7o. There will be no change in buyer-supplier relationship for firms classified as Active Participants in the Response Matrix.

- H7a. Firms classified as Active Participants will experience a change in buyer-supplier relationships.
- H8o. There will be no change in buyer-supplier relationship for firms classified as Partial Participants in the Response Matrix.
- H8a. Firms classified as Partial Participants will experience a change in buyer-supplier relationships.
- H9o. There will be no change in buyer-supplier relationship for firms classified as Token Participants in the Response Matrix.
- H9a. Firms classified as Token Participants will experience a change in buyer-supplier relationships.
- H10o. There will be no change in buyer-supplier relationship for firms classified as Decliners in the Response Matrix.
- H10a. Firms classified as Decliners will experience a change in buyer-supplier relationships.
- H11o. There will be no change in buyer-supplier relationship for firms classified as Refusers in the Response Matrix.
- H11a. Firms classified as Refusers will experience a change in buyer-supplier relationships.

TESTS OF HYPOTHESES

Many types of research focus on the existence of treatment effects. The emphasis is on finding evidence of change resulting from application of a treatment. In such circumstances, a researcher hopes to demonstrate a treatment effect by being able to statistically reject the null hypothesis of no differences between groups. This research does just the opposite. To build and verify theoretical frameworks grounded in empirical evidence, patterns of similarity are sought. Here, we hope to retain the null hypothesis, thereby demonstrating similarity among the responses.

The level of statistical significance represents the maximum probability of a Type I error; the probability of improperly rejecting the null hypothesis, or falsely detecting treatment effects. Traditionally, the selection of the level of statistical significance at which to test hypotheses is chosen from $\alpha = .05$ or $\alpha = .01$.⁷ This is, however, arbitrary, depending on the researcher's estimation of the relative importance to the research of incorrectly claiming differences in the data (Type I or α error), as opposed to overlooking differences that really exist (Type II or β error). However, to decrease the probability of a Type I error is to increase the probability of a Type II error.

Tate and Clelland (1957), Wallis and Roberts (1965), Cascio and Zedeck (1983) and others argue for consideration of the significance of each type of error to the outcomes of the research on a case-by-case basis, and the selection of a level of α appropriate to the specific research hypotheses. This research is exploratory, and as such uses a smaller, in-depth sample to detect phenomenon as a mechanism to identify potentially fruitful future research issues and directions. With a small sample, the detection of situational occurrences may be circumvented by an

7. For example, see Jacob Cohen and Patricia Cohen, Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences (Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers, 1983), p. 20. Also, see Gene V. Glass and Kenneth D. Hopkins, Statistical Methods in Education and Psychology (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1984), p. 205.

arbitrarily stringent selection of statistical significance level. In other words, a small sample may have limited power to detect phenomenon. To address this issue, hypothesis testing in exploratory research is often done at the $\alpha = .10$ level (Anderson, Chu and Weitz, 1987; McQuiston, 1989; Gay and Diehl, 1992). Therefore, hypotheses in this exploratory research will likewise be tested at the $\alpha = .10$ level, both because of the orientation of the research and because of the limited power available from a small sample. Tests for each of the research questions are summarized as follows.

Data collected about research question one (the favored method of disposal of reciprocally purchased goods) indicates each firm's rankings of the three options. The null hypothesis of no differences among the respondents' rankings was tested using a Friedman Analysis of Variance.

Question two (factors which influence the choice of source shift options) yields rankings of factors for several reciprocal purchase transactions from within each of the four countertrading firms. The null hypothesis of no differences either within or between source shift options was tested using a Friedman Analysis of Variance of rank orders of factors for each choice across four firms.

Research question three is concerned with changes in buyer-supplier relationships following involvement in countertrade transactions. Once again, data was collected for several reciprocal purchase transactions from each of the four countertrading firms. The seven point Likert scale

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disclosed relationship factors which have changed, those which have not, as well as both the direction and magnitude of change. This same data was collected from suppliers to those firms. A Wilcoxon Signed Rank Test was used to test Hypotheses 6 through 11.

When using non-parametric statistical tests, the possibility exists to use a computer statistical package to perform the actual calculations. However, Gibbons⁸ provides the following caution.

The user should be warned that almost all of the packages use the asymptotic (based on large sample theory and therefore appropriate only for large sample sizes) approximation to the sampling distribution of the test statistic in order to determine the significance or P-value. Some packages use a continuity correction and some do not. Some packages incorporate a correction for ties and some do not. As a result, hand calculations should be used if the sample size is small.

In accordance with her warning, because the sample size of this research is small, calculations of the statistical tests of this research were made by hand.

CHAPTER SUMMARY

This chapter began with a brief overview of previous countertrade research methodology. The basic unit of analysis for this research was defined as dyads formed of buyers and suppliers. The case method of research was

8. Jean Dickinson Gibbons, Nonparametric Statistics (Newbury Park, CA: Sage Publications, 1993), p. 4. Last sentence emphasis is mine.

described and discussed as were its data analysis techniques. The sample for this research was defined and research questions and hypotheses were posed. Hypothesis testing methods were then described. The following chapter will display the data collected during this research and test hypotheses developed here.



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CHAPTER IV

RESULTS

INTRODUCTION

The preceding three chapters have introduced countertrade and the involvement of industrial purchasing with that activity. Literature pertaining to countertrade has been reviewed and the issues and methodology relative to this research into the influence of countertrade on buyer - supplier relationships has been detailed in Chapters Two and Three. In this chapter, the data derived from the research will be displayed and tests of the eleven hypotheses will be conducted. Results of the hypothesis tests will be discussed in turn, along with qualitative information pertinent to each.

COUNTERTRADING FIRM INTERVIEWS

One of the conditions required by each of the interview participants was absolute anonymity. To comply with that guarantee, firms will be referenced only by letter. Firms include those in transportation, aerospace, consumer products and industrial commodities.

In-depth interviews were conducted with representatives of four major multinational countertrading firms. Interview

time exceeded four hours per executive, and followed the Countertrade Firm Interview Guide shown in Appendix D. Suppliers to these four firms were interviewed by telephone, following the Supplier Firm Interview Guide in Appendix E. Supplier interviews typically consumed forty-five to sixty minutes.

Interview Process

The interviews began with a series of demographic questions which served two purposes. First they provided information about the firms, their international purchasing involvement, size and countertrade involvement. In addition, the intent of the first few minutes of the interview was to establish the interviewer as friendly, benign but receptive, and to put the respondent at ease. These demographic questions, sent in advance, served that purpose. The first question related to the countertrade firm's products; were they for industrial markets, consumer markets or both? The results are displayed in Figure 4-1.

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	Ind Cons Both	Primary Business	Total Sales (Bil)	Total Emp'mt (Thou)	Total Purch (Bil)	CT Since
Firm A	I	Mil Hdwe	13	71	8	1970
Firm B	I	Ind Prod	8	34	3.5	1981
Firm C	B	Consumer	2.25	12	1.25	1985
Firm D	I	Com'l Acft	25	123	7.3	1968

Firm	A	B	C	D	Avg
% Internal Consumption From CT Suppliers	4	2	4	8	4.5
% of 1994 Sales Involving Countertrade	15	3.8	3.5	18	10.1

Figure 4-1

Countertrade Firm Demographic Information

Additional demographic information related to the percentage of 1994 purchases which came from countertrade suppliers and the percentage of 1994 sales which involved some form of countertrade. More than three percent of internal purchases came from countertrade suppliers, while more than seven percent of all 1994 sales involved some form of countertrade.

One additional question attempted to determine the percentage of purchases which came from other foreign, but non-countertrade suppliers. This proved to be unanswerable, since some of the firms had multinational locations, so the distinction "foreign" was unusable.

Each of the four firms has extensive countertrade experience. The average for the four was 17 years with a

range of 8 years to 25 years. Each of the firms indicated that it has seen an increase in countertrade activity during that time, and projected a continuation of that trend. Each also noted changes in the types and sophistication of countertrade transactions as more countries become adept at its intricacies. For example, Firms A and D noted that countries are less willing to allow the countertrading firm to simply purchase any general goods from the country. Instead, firms are now pressured to provide advanced technology and manufacturing capability.

Each of the countertrade firms named four suppliers to participate in this research. These ranged from aerospace firms to manufacturers of industrial components. Characteristics of these suppliers are shown in Figure 4-2 below.

Firm	Ind Cons Both	Primary Business	Total Sales	Total Emp'mt
1	I	Diversified	1.33 Bil	10,000
2	I	Diversified	500 Mil	4,000
3	I	Aircraft Part	22 Mil	360
4	B	Electronics	8.15 Bil	60,000
5	I	Electronics	3 Bil	20,000
6	I	Hydraulics	2.2 Bil	10,000
7	I	Ind. Parts	300 Mil	3,200
8	I	Ind. Parts	260 Mil	1,900
9	I	Trans Equip	918 Mil	4,900
10	I	Aviation Eq	874 Mil	1,600
11	I	Avionics	806 Mil	1,460
12	B	Diversified	5.96 Bil	52,000
13	I	Chemicals	34 Mil	330
14	I	Diversified	11.8 Bil	8,600
15	B	Electronics	8.52 Bil	61,000
16	B	Electrical Eq	8.8 Bil	109,000

Figure 4-2

Supplier Firm Demographic Information

RESEARCH QUESTION ONE

Is there a favored method of disposal of countertrade reciprocal purchases?

Previous research (Forker, 1991; Carter and Gagne, 1988) suggests that the preferred method of disposal of

reciprocally purchased goods may be internal consumption. There have been no formal tests of this preference, however. To validate the deduction from previous research, a comparison was made of the rank orders of preference of the three options; internal consumption, supplier involvement, and third party resale.

- H1o. Countertrading firms have no preferred method of disposal of reciprocally purchased goods.
 H1a. Countertrading firms have a preferred method of disposal of reciprocally purchased goods.

Table 4-1
 Preference Among Disposal Options

Option	Countertrade Firm Rank Order				Avg.	ΣR	ΣR ²	O/A Rank
	Firm A	B	C	D				
Internal Consumption	2	1	1	1	1.25	5	25	1
Supplier Involvement	1	2	2	2	1.75	7	49	2
Resell to Others	3	3	3	3	3.00	12	144	3

A Friedman test of the data in Table 4-1 yields a test statistic of 6.5, which is significant at the $\alpha = .042$ level. The appropriate Chi Square Distribution Table value, at $\alpha = .10$ is 4.605; therefore the null hypothesis of no preferred method of disposal of reciprocally purchased goods is rejected. There is a preferred method of disposal - that of internal consumption, followed by supplier involvement.

Preference, however, was not always matched by opportunity. Although countertrading firms agreed that, given a choice, they preferred to reciprocally purchase goods which they could consume, the dollar value of use of this option was not always greatest. Countertraders cited many situations which made it impossible to achieve this preference, such as a lack of capable suppliers or contractual requirements for such activities as co-production. Nevertheless, they preferred to buy goods with which they were familiar and which were usable by the countertrading firms or sister firms or divisions.

Question One Discussion

Resale to third parties of non-consumable goods was not an option favored by countertrading firms except as a last resort to meet an obligation. Resale transactions were seen to typically involve goods with which the countertrading firm was less familiar, increasing transactional risk.

Another reason that the option "Resell to Others" was not popular was that, as described by Firm C, the end buyer will usually try to go around the reselling firm. As soon as the buyer discovers who the manufacturer is, the buyer tries to buy directly from the manufacturer, cutting out the countertrade firm and consequently all countertrade credit.

Supplier Disposal Option Preferences

Although not specifically in answer to Research Question One, which was directed to countertrade firms,



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suppliers too had definite preferences for methods to fulfill reciprocal responsibilities. All but one stated that internal consumption was favored. The single exception preferred to acquire supplier firms in countertrading countries. In a sense, this is a variation of internal consumption. Another supplier favored internal consumption, but tried to do so only through its international divisions, preferring not to bring such purchases into this country. A third supplier reported that it will not undertake any reciprocal obligation which can not entirely be fulfilled with consumable goods. As a supplier, this firm does not have its own obligations, but participates in obligations of its customers. The firm noted that this distinction allows it to be more selective in the goods it purchases.

QUESTION ONE SUMMARY

Internal consumption is clearly the favored method of disposal for goods purchased to fulfill countertrade obligations, being ranked first by three of the four firms. However, firms are frequently inhibited in their pursuit of this preference by contract terms, country requirements or country economic development. The second ranked option was to involve suppliers in reciprocal obligations. This involvement may take many forms, among which are direct assumption of part of the reciprocal obligation or purchases from the countertrading country for the credit of the countertrading firm without assumption. The impacts of such

supplier involvement on buyer-supplier relationships are addressed by Research Question Three. The third option was that of purchasing goods not internally consumable by the countertrade firm. Those goods would then be resold to firms or brokers unrelated to the countertrade firm or its suppliers. This option was not an interest of this research because it did not involve nor impact existing buyer-supplier relationships, the basic focus of this research.

RESEARCH QUESTION TWO

What are the factors which influence a countertrading firm's choice among source shift options?

The second research question explored the situation where a countertrading firm has incurred a countertrade reciprocal purchase obligation and has chosen to purchase internally consumable goods. Given the finite requirements of the firm, it may choose from several options in deciding upon the mechanism by which it will order from new countertrade suppliers. The firm may elect to take current orders away from an existing supplier (withdraw). New orders which would otherwise go to an existing supplier may be shifted to new countertrade suppliers (divert). Finally, the firm may elect to shift tasks previously performed in-house to new countertrade suppliers (outsource). Eleven factors were identified which may be important to the selection from these options. These factors came from preliminary discussions with countertraders, the Carter and

Gagne (1988) and Forker (1991) research and from the purchasing experience of this researcher.

1. The volume of new and different requirements being generated within the countertrading firm (i.e. requisitions).
2. The percent of orders generated within the countertrading firm which are covered by long term contracts.
3. Level of volume commitments in contractual obligations.
4. Potential disruption to existing supplier relationships.
5. Level of design secrecy of goods or tasks to be shifted to countertrade supplier.
6. Stage of product life cycle of goods to be shifted to countertrade supplier.
7. Level of economic development of the countertrading country.
8. Form of the countertrade agreement: Counterpurchase, Offset or Buyback.
9. Type of countertrade sale: Products, Technology or Project.
10. Size of order backlog of countertrade firm.
11. Degree of unionization of countertrading firm.
12. Other factors.

From these factors and the three choices, withdraw, divert and outsource, the following hypotheses were developed.

Hypotheses 2 - 5.

- H2o. There will be no differences in rank orders of factors which influence the "withdraw" decision between the firms.
- H2a. There will be differences in rank orders of factors which influence the "withdraw" decision between the firms.
- H3o. There will be no differences in rank orders of factors which influence the "divert" decision between the firms.
- H3a. There will be differences in rank orders of factors which influence the "divert" decision between the firms.

- H4o. There will be no differences in rank orders of factors which influence the "outsource" decision between the firms.
- H4a. There will be differences in rank orders of factors which influence the "outsource" decision between the firms.
- H5o. There will be no differences in rank orders of factors which influence the source shift option decision across the three choices.
- H5a. There will be differences in rank orders of factors which influence the source shift option decision across the three choices.

Respondents ranked each of the eleven factors listed above for each of the three options. In other words, they were asked first to rank the importance of each option as it pertained to the option, "withdraw". The process was then repeated for each of the other options, "divert" and "outsource".

A Friedman analysis of variance was used to determine whether there were differences in rankings of factor importance between the four countertrading firms. The same methodology was used to compare rankings across the three options. Figures 4-3 through 4-6 illustrate the results related to Hypotheses 2 through 5.

Factor Firm	FACTOR RANKS										
	1	2	3	4	5	6	7	8	9	10	11
WITHDRAW											
A	6	5	4	1	2	7	3	10	11	8	9
B	7	1	2	4	11	10	3	6	5	8	9
C	1	5	6	3	9	4	2	8	10	7	11
D	1	10	9	7	3	4	2	11	8	5	6
DIVERT											
A	3	2	1	5	6	7	4	10	11	8	9
B	7	1	2	4	11	10	3	6	5	8	9
C	1	5	6	3	9	4	2	8	10	7	11
D	1	10	9	7	3	4	2	11	8	5	6
OUTSOURCE											
A	8	9	10	7	6	3	2	1	11	5	4
B	4	5	6	7	11	10	1	2	9	3	8
C	3	5	6	2	9	4	1	8	10	7	11
D	1	2	9	5	4	6	7	11	10	3	8
Totals (R)	43	60	70	55	84	73	32	92	108	74	101
R ²	1,849	3,600	4,900	3,025	7,056	5,329	1,024	8,464	11,664	5,476	10,201

$$\sum R^2 = 62,588$$

$$S = \sum R^2 - \frac{b^2 \lambda^2 k(k+1)^2}{4} = 62,588 - \frac{(9)(16)(11)(12^2)}{4} = 5,564$$

$$b=3$$

$$k=11$$

$$\lambda=4$$

$$T = \frac{12S}{bk\lambda^2(k+1)} = \frac{12(5,564)}{3(11)(16)(12)} = 10.538$$

From Chi Square distribution table, where $p = .90$ with 10 degrees of freedom = 15.99
 Since test statistic $T < \chi^2$, the null hypothesis is rejected

FACTOR RANK ORDERS ACROSS OPTIONS
 Figure 4-6

Factor Firm	FACTOR RANK										
	1	2	3	4	5	6	7	8	9	10	11
A	8	9	10	7	6	3	2	1	11	5	4
B	4	5	6	7	11	10	1	2	9	3	8
C	3	5	6	2	9	4	1	8	10	7	11
D	1	2	9	5	4	6	7	11	10	3	8
Totals (R)	16	21	31	21	30	23	11	22	40	18	31
Rank	2	4.5	9.5	4.5	8	7	1	6	11	3	9.5
R ²	256	441	961	441	900	529	121	484	1600	324	961

$\sum R^2 = 7018$

Factor Key

- 1 New order volume
- 2 Orders under long-term contract
- 3 Volume commitment
- 4 Existing supplier relations
- 5 Design secrecy
- 6 Product life cycle
- 7 CT country development
- 8 CT contract form
- 9 Type of sale
- 10 Order backlog size
- 11 Degree of unionization

$$* T = 12 \frac{\sum R^2}{bk(k+1)} - 3b(k+1) = \frac{12(7018)}{(4)(11)(12)} - (3)(4)(12) = 159.5 - 144 = 15.5$$

The Chi Square value, where $p = .90$ with 10 degrees of freedom = 15.99
 Since test statistic $T < \chi^2$, the null hypothesis is rejected

Where T = Friedman Test Statistic

- b = Firms (Blocks)
- k = Factors (Columns)

* Source : W. J. Conover . Practical Nonparametric Statistics .
 New York : John Wiley & Sons , Inc. , 1971 , p. 266 .

FACTORS INFLUENCING THE OPTION 'OUTSOURCE'
 Figure 4-5

Factor Firm	FACTOR RANK										
	1	2	3	4	5	6	7	8	9	10	11
A	3	2	1	5	6	7	4	10	11	8	9
B	7	1	2	4	11	10	3	6	5	8	9
C	1	5	6	3	9	4	2	8	10	7	11
D	1	10	9	7	3	4	2	11	8	5	6
Totals (R)	12	18	18	19	29	25	11	35	34	28	35
Rank	2	3.5	3.5	5	8	6	1	10.5	9	7	10.5
R ²	144	324	324	361	841	625	121	1225	1156	784	1225

$$\sum R^2 = 7130$$

Factor Key

- 1 New order volume
- 2 Orders under long-term contract
- 3 Volume commitment
- 4 Existing supplier relations
- 5 Design secrecy
- 6 Product life cycle
- 7 CT country development
- 8 CT contract form
- 9 Type of sale
- 10 Order backlog size
- 11 Degree of unionization

$$* T = 12 \frac{\sum R^2}{bk(k+1)} - 3b(k+1) = \frac{12(7130)}{(4)(11)(12)} - (3)(4)(12) = 162.045 - 144 = 18.045$$

The Chi Square value, where $p = .90$ with 10 degrees of freedom = 15.99
 Since test statistic $T > \chi^2$, the null hypothesis is retained

Where T = Friedman Test Statistic

b = Firms (Blocks)

k = Factors (Columns)

* Source: W. J. Conover . Practical Nonparametric Statistics .

New York : John Wiley & Sons, Inc., 1971, p. 266.

FACTORS INFLUENCING THE OPTION "DIVERT"

Figure 4-4

Factor Firm	1	2	3	4	5	6	7	8	9	10	11
A	6	5	4	1	2	7	3	10	11	8	9
B	7	1	2	4	11	10	3	6	5	8	9
C	1	5	6	3	9	4	2	8	10	7	11
D	1	10	9	7	3	4	2	11	8	5	6
Totals (R)	15	21	21	15	25	25	10	35	34	28	35
Rank	2.5	4.5	4.5	2.5	6.5	6.5	1	10.5	9	8	10.5
R ²	225	441	441	225	625	625	100	1225	1156	784	1225

$\sum R^2 = 7072$

Factor Key

- 1 New order volume
- 2 Orders under long-term contract
- 3 Volume commitment
- 4 Existing supplier relations
- 5 Design secrecy
- 6 Product life cycle
- 7 CT country development
- 8 CT contract form
- 9 Type of sale
- 10 Order backlog size
- 11 Degree of unionization

$$* T = 12 \frac{\sum R^2}{bk(k+1)} - 3b(k+1) = \frac{12(7072)}{(4)(11)(12)} - (3)(4)(12) = 160.727 - 144 = 16.727$$

The Chi Square value, where $p = .90$ with 10 degrees of freedom = 15.99
 Since test statistic $T > \chi^2$, the null hypothesis is retained

Where T = Friedman Test Statistic

b = Firms (Blocks)

k = Factors (Columns)

* Source : W. J. Conover . Practical Nonparametric Statistics .

New York : John Wiley & Sons , Inc. , 1971 , p. 266 .

FACTORS INFLUENCING THE OPTION "WITHDRAW"

Figure 4-3

"Withdraw" Option

For the option "Withdraw", the test statistic is 16.73, while the $\alpha = .10$ Chi Square value is 15.99¹. Since the test statistic is greater than the Chi Square value, the null hypothesis of no differences is retained. At the $\alpha = .10$ level of statistical significance, there is concurrence in rank orders of factors among the four firms. Figure 4-3 above displays the rankings of all factors.

Of the eleven factors, the most influential one to the decision to withdraw orders from existing suppliers is the state of industrial development of the countertrade country. This is important because it is reflective of the ease with which firms may be able to find reliable countertrade suppliers of high quality products appropriate for internal consumption.

Second in importance is the impact on existing supplier relationships that withdrawal of a current order from an existing supplier might have. Clearly, suppliers will at best be disappointed to lose an order. Since many firms today are reducing their numbers of suppliers to a select few, relationships with those who remain are vitally important.

The volume of new requirements being generated within the countertrade firm was equally as important to the "withdraw" decision as impact on supplier relationships. If

¹ W. J. Conover, Practical Nonparametric Statistics. New York: John Wiley & Sons, Inc., 1971, p. 367.



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the countertrade firm experienced an increase in new orders, more purchases were available to distribute to both existing and countertrade suppliers. This condition tends to minimize the number of orders which must be withdrawn from existing suppliers to meet reciprocal purchase obligations.

The numbers and levels of long term contractual commitments to existing suppliers ranked third in importance to the "withdraw" decision. Firms which had the majority of their purchases covered by long term contracts were most concerned with this issue, as these contracts made it more difficult to find requirements to purchase from countertrade suppliers. This is in part why three firms elected to enter into short term contracts with suppliers who provided less critical goods. Those suppliers were told that their contracts might not be renewed if countertrade demands needed to be met.

The least important factors to this decision were the form of the countertrade agreement, the degree of unionization of the countertrade firm, and the type of sale. Form was unimportant because all transactions discussed were of types which Hennart (1990) defined as generating reciprocal purchase obligations. The degree of unionization of the countertrade firm was not an issue with regard to shifting orders from one external supplier to another. The type of sale; product, technology or project did not appreciably impact the reciprocal obligation.

"Divert" Option

Data for the second option, "divert" shows similar results. Here, the test statistic is 18.05, while the applicable Chi Square value is 15.99. Again, since the test statistic is greater than the Chi Square value, the null hypothesis of agreement among the four firms about factor rankings is retained. Figure 4-4 above displays all factor ranks.

Diversion of orders from existing suppliers to new countertrade suppliers was most influenced by the state of economic development of the countertrading country and the volume of new requirements being generated. Also important were the numbers and levels of long term contractual commitments to existing suppliers. Reasons for the importance of these were the same as for the "withdraw" option.

Of least significance were contract form, degree of unionization and sale type. Again, the reasons for the lack of importance mirrored those of the "withdraw" option.

"Outsource" Option

The null hypothesis of no differences between rank orders of factors influencing the third option decision, "Outsource", is rejected at the $\alpha = .10$ level of statistical significance. The test statistic is 15.50 while the Chi Square value is 15.99. For this option, the alternate hypothesis of differences in factor ranks among the four

firms is retained. In part, this may be attributable to the percentage of purchased content in each firm's products. As the purchased content declined, the percentage of product value contributed by the firm's own in-house processes increased. Firms with high purchased-content products had little to outsource compared to firms with low purchased content. Consequently, the "outsource" option may have been one of last resort. Figure 4-5 above displays the ranks for all factors.

As with the first two options, the degree of economic development of the countertrading country was ranked first in significance to the "outsource" option. The second most important factor was new order volume. The supplier selection considerations were the same for outsourcing as for the other two options. It was as important to find reliable, high quality suppliers for goods to be outsourced as for goods normally purchased. High volumes of new orders expanded supplier selection flexibility.

Size of order backlog was the third most important factor to the "outsource" option. With large backlogs of orders waiting to proceed through the firm's facilities, outsourcing was a viable option. If the backlog was small and the outsourcing of tasks previously done internally might result in layoffs, then outsourcing was seen as unattractive.

The least important factors to this decision were type of sale, volume commitment to existing suppliers, design

secrecy and surprisingly, degree of company unionization. The reason for the unimportance of the type of sale was the same as for the other factors; lack of impact on reciprocal obligation. Volume commitments to existing suppliers were largely (although not entirely) unaffected by outsourcing.

Regarding design secrecy, Countertrade Firm D stated, "Nothing is secret for very long. Within a year, competitors have thoroughly analyzed any new product." This, at least in part, explains the lack of concern about design secrecy when outsourcing.

Related to this is a supplier's response that, although outsourcing is an issue, it tries only to outsource its lowest tech activities. It also looks for situations where it has previously outsourced to a U.S. supplier. It will then shift that outsourced item to a countertrade supplier if necessary.

Outsourcing has been a contentious topic between management and unions, lately². It was therefore somewhat surprising to find that the degree of unionization of the countertrading firm had little impact on the "outsource" option choice. Two firms stated that potential transactions were explained to their unions in advance, with emphasis on the incremental union work flowing from these transactions

2. For example, several recent strikes at General Motors plants have revolved around the issue of outsourcing. By way of illustration, the September 1, 1994 (pg C7) and September 2, 1994 (pg C9) issues of the Portland Oregonian carried articles discussing the outsourcing of the tool-and-die making shop and the resultant strike.

in spite of necessary outsourcing. With this understanding, unions apparently supported necessary outsourcing to make sales.

The preceding three tests have each examined differences between the firms' rank ordering of factors within each of the three choices. The final test for Research Question Two involves the hypothesis that there is no difference in rank orders of factors across the three decisions. The test statistic for Hypothesis 5 is 10.538. Comparing this to the Chi Square value of 15.99, we reject the null hypothesis of no differences in factor rankings between the firms across all options. Figure 4-6 contains statistics from this test.

QUESTION TWO SUMMARY

Null Hypotheses 2 and 3 define no differences among factor rank orders between firms. These are retained, indicating that the four firms interviewed consider the eleven factors to have similar priorities of influence on each of the decisions, "withdraw" and "divert".

There are greater differences between rank orders of factors for the outsource option, reflecting differences in firm attitude toward this practice. Null Hypothesis 4 is rejected, as is null Hypothesis 5 comparing all three options across all four firms. The industry diversity of the four countertrading firms may be a partial explanation

for this last result. Table 4-2 summarizes the test statistics for all hypotheses of Research Question Two.

Table 4-2

Test Statistics for Hypotheses 2 Through 5

	H2 Withdraw	H3 Divert	H4 Outsource	H5 All
Test Statistic	16.73	18.05	15.50	10.54
$\alpha = .10$	15.99	15.99	15.99	15.99
Test Result	Agree	Agree	Disagree	Disagree
Null Hypothesis is:	Retained	Retained	Rejected	Rejected

Rank Orders of Factor Importance

Each of the four countertrade firms interviewed for this research uses each of the options "withdraw", "divert", and "outsource". Eleven factors were identified which may be important to the selection from these options. Figure 4-7 below summarizes data from Figures 4-3, 4, 5 and 6, illustrating the rank orders of importance of each of the eleven factors on each of the option decisions as identified by the four countertrading firms.

Abbreviation Key

Contract Form: Form of the countertrade agreement: Counterpurchase, Offset or Buyback.
CT Country Dev: Countertrade country level of economic development.
Design Secret: Level of design secrecy of goods or tasks to be shifted to countertrade supplier.
LT Contracts: Percent of orders from countertrading firm which are covered by long term contracts.
Order Backlog: Size of countertrade firm order backlog.
Prod Life Cy: Stage of product life cycle of goods to be shifted to countertrade supplier.
Sale Type: Type of countertrade sale: Products, Technology or Project.
Supplier Rel's: Potential disruption to existing supplier relationships.
Unionization: Countertrading firm degree of unionization.
Vol Commit: Level of volume commitments in contractual obligations.
Vol New Req'mt: Volume of new requirements of countertrading firm.

Options

* Σ Ranks	Withdraw	ER	Divert	ER	Outsource
10	CT Country Dev	11	CT Country Dev	11	CT Country Dev
15	Supplier Rel's	12	Vol New Req'mt	16	Vol New Req'mt
15	Vol New Req'mt	18	LT Contracts	18	Order Backlog
21	LT Contracts	18	Vol Commit	21	LT Contracts
21	Vol Commit	19	Supplier Rel's	21	Supplier Rel's
25	Prod Life Cy	25	Prod Life Cy	22	Contract Form
25	Design Secret	28	Order Backlog	23	Prod Life Cy
28	Order Backlog	29	Design Secret	30	Unionization
34	Sale Type	34	Sale Type	31	Design Secret
35	Unionization	35	Unionization	31	Vol Commit
35	Contract Form	35	Contract Form	40	Sale Type

* Σ Ranks is the rank total for the four countertrade firms.

Figure 4-7

Factor Rank Orders

RESEARCH QUESTION THREE

What are the impacts of disposal option decisions, source shift options and supplier reaction decisions on relationships between the countertrading firm and its existing suppliers?

Research Question Three is concerned with changes in buyer-supplier relationships following involvement in countertrade transactions. Six choices are proposed for suppliers faced with customers who have reciprocal purchase obligations.

Buyer requests participation.

Type 1: In the first case, the supplier considers countertrade a fact of business life and proactively works with the customer to address reciprocal purchase obligations (Proactive Volunteer).

Type 2: This supplier responds to requests, does what is asked, but no more (Partial Participant).

Type 3: After requests, but without pressure, this supplier declines to become involved (Decliner).

Buyer requires participation.

Type 4: In this instance, the supplier fully participates, but only after pressure is brought to bear by the customer (Active Participant).

Type 5: Even in the face of customer pressure, this supplier elects only minimal participation (Token Participant).

Type 6: A supplier who refuses to participate entirely, regardless of pressure by the customer is classified as a Refuser.

An archtypical scenario was created for each of the six supplier response outcomes (See Appendices C and E). Each supplier firm was then asked to select the scenario which

best represented its buyer-supplier situation. Results of the supplier self-classification follow in Figure 4-8.

Request Type 1 (Proactive Volunteer)	6 Firms
Request Type 2 (Partial Participant)	3 Firms
Request Type 3 (Decliner)	None
Require Type 4 (Active Participant)	4 Firms
Require Type 5 (Token Participant)	3 Firms
Require Type 6 (Refuser)	None

Figure 4-8

Supplier Firm Classification

Using the above groupings, changes in ten attributes of a close, collaborative buyer-supplier relationship were assessed. The previously identified attributes were:

Inputs

1. The goods and their specifications.
2. Terms of Sale, including price and payment terms, quantity discounts and other negotiated elements.
3. Delivery promptness and completeness.
4. Communication.

Durability

5. Exercise of power.
6. Trust.
7. Formality.

Consistency

8. Commitment
9. Expectations
10. Mutual dependence.

Data were collected for reciprocal purchase transactions between each of the four countertrading firms

and their four suppliers. Each of the sixteen supplier firms evaluated the impact of involvement in its customers' countertrade obligations on relationships with those customers. Each of the ten relational attributes listed above was evaluated on a scale from -3 to +3, with zero representing no change. Score totals are the net of all plus and minus changes for each firm, and are shown in Table 4-3 below.

Table 4-3

Supplier Firm Assessment of Relationship Changes

Attribute	Supplier Firm																Tot
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Goods	0	0	0	0	0	0	0	0	0	-1	-1	0	0	0	0	0	-2
2. Terms	-1	+1	+1	0	0	0	0	0	0	-1	-1	-1	0	-1	0	0	-3
3. Del'y	0	0	0	0	0	0	0	0	0	-1	-1	0	0	0	0	0	-2
4. Commun	+2	+1	+3	+1	+1	-1	+1	0	+2	-2	-1	+1	+1	0	0	+1	+10
5. Power	-1	-1	+1	0	0	-3	-2	-1	0	-1	-1	-1	0	-1	-1	0	-12
6. Trust	+2	0	+2	0	+1	0	+1	-1	+1	-1	-1	0	+1	0	0	0	+5
7. Formal	0	0	+3	0	0	-1	+1	0	0	0	0	+1	+1	0	0	0	+5
8. Commit	+2	0	+2	0	+1	0	+1	+1	+1	-2	-1	+2	+2	0	0	+1	+10
9. Expect	+2	0	+2	0	0	0	+1	+1	+1	-1	0	+1	+1	0	-1	+1	+8
10. Dpend	+3	0	+3	0	0	0	+1	+1	+3	0	0	+1	+1	0	-1	+1	+13
Total	+9	+1	+17	+1	+3	-5	+4	+1	+8	-10	-7	+4	+7	-2	-3	+4	+32

EXAMINATION OF RELATIONAL ATTRIBUTES

All sixteen of the supplier firms reported some degree of change in buyer-supplier relationships. The range of reported change was from -10 to +17. Five firms reported negative change with results of -10, -7, -5, -3, and -2. Three firms were nearly neutral, reporting change of +1 each. Four firms reported some positive change; one with a score of +3, and three others with scores of +4. The final four firms were more highly positive, evaluating relationship change at +7, +8, +9, and +17.

Observing the net changes for each of the ten relational attributes of importance to buyer-supplier relationships in Table 4-3 above, factors most beneficial and detrimental to buyer-supplier relationships are apparent. Increases in mutual dependence, commitment, communication and future expectations are perceived, while the use of power by countertrading firms over suppliers is seen as most injurious to the relationship. The goods themselves and deliveries are expected to change little, if at all.

Effects of Countertrade Firm Use of Power

The results shown in Table 4-3 above suggest that the use of economic power or leverage is the factor most negatively perceived by suppliers. Overall, they resent the use of coercive power by buyers to solicit participation in

countertrade transactions. See Appendix F for specific comments.

Communication, commitment between the firms, and mutual dependence are the factors perceived by suppliers to be most improved following involvement in mutual countertrade transactions. Suppliers reported that involvement in their customers' reciprocal obligations required increased levels of communication which they perceived positively. In addition, they noted decreased formality of communication which they perceived as beneficial.

Mutual commitment to a common goal and consequent increases in mutual dependence were perceived as strongly beneficial by suppliers. Countertrade firms, however, construed those changes to be less consequential.

Not surprisingly, some suppliers resented being forced to participate in the reciprocal obligations of their customers. Firms who appear to be most successful at countertrade, however, go to significant lengths to avoid this situation by working with suppliers well in advance of the undertaking of a countertrade obligation. As shown by the positive reactions of proactive supplier firms, and the negative reactions of token participants, this early involvement seems crucial to the maintenance of good buyer-supplier relationships under countertrade conditions.

There is a countervailing power in some situations. When a supplier has a unique or patented product, power may shift to its favor. Two suppliers suggested that when the

products they were to sell in a countertrade transaction were of this type, they were much less willing to acquiesce to reciprocal requests or requirements from customers than when their products were competing with those of other potential suppliers.

Level of Participation and Perception of Impact

The more positively proactive the supplier, the more favorable is likely to be its view of impacts on buyer-supplier relationships of involvement in customer countertrade. Table 4-4, a comparison of the average perception of change of each of the four supplier groups from Research Question Three, illustrates this point.

Table 4-4

Perception of Relationship Change By Supplier Type

	Supplier Type			
	Proactive Type 1	Active Type 2	Partial Type 4	Token Type 5
Average Change	+6.17	+1.25	+1.75	-6

The average change shown above is the sum of the net differences of both positive and negative relational attribute changes for all of the suppliers in each classification. Proactive firms enjoy positive relational changes; general participants, both active and partial, experience largely neutral impacts, while token

participants' relationships deteriorate. By carefully examining their level of participation in customers' countertrade obligations, suppliers may predict relationship changes.

RANKS BY SUPPLIER CATEGORY

Total changes for each of the sixteen supplier firms were ranked by absolute value of each distance from zero. Rankings were then sorted into the four classifications of supplier type as described above. The results are shown in Table 4-5.

Table 4-5

Ranks by Supplier Type

Firm	Net Difference	Rank of D	Type 1	Type 2	Type 4	Type 5
1	+9	14		14		
2	+1	2			2	
3	+17	16	16			
4	+1	2			2	
5	+3	5.5		5.5		
6	-5	10				10
7	+4	8	8			
8	+1	2	2			
9	+8	13			13	
10	-11	15				15
11	-7	11.5		11.5		
12	+4	8	8			
13	+7	11.5	11.5			
14	-2	4				4
15	-3	5.5			5.5	
16	+4	8	8			
Rank Total by Type			53.5	31.0	22.5	29.0

Using the above groupings, hypotheses six through eleven were tested.

Hypotheses 6 - 11.

- H6o. There will be no change in buyer-supplier relationship for firms classified as Proactive Volunteers in the Response Matrix.
- H6a. Firms classified as Proactive Volunteers will experience a change in buyer-supplier relationship.
- H7o. There will be no change in buyer-supplier relationship for firms classified as Active Participants in the Response Matrix.
- H7a. Firms classified as Active Participants will experience a change in buyer-supplier relationships.
- H8o. There will be no change in buyer-supplier relationship for firms classified as Partial Participants in the Response Matrix.
- H8a. Firms classified as Partial Participants will experience a change in buyer-supplier relationships.
- H9o. There will be no change in buyer-supplier relationship for firms classified as Token Participants in the Response Matrix.
- H9a. Firms classified as Token Participants will experience a change in buyer-supplier relationships.
- H10o. There will be no change in buyer-supplier relationship for firms classified as Decliners in the Response Matrix.
- H10a. Firms classified as Decliners will experience a change in buyer-supplier relationships.
- H11o. There will be no change in buyer-supplier relationship for firms classified as Refusers in the Response Matrix.
- H11a. Firms classified as Refusers will experience a change in buyer-supplier relationships.

A Wilcoxon Signed Rank test was used for Type 1 and Type 4 suppliers, but could not be performed for the supplier Types 2 or 5 because of small sample size. Alternately, a Sign Test was used for each of the four groups of identified supplier types.

The group of Type 1 suppliers consists of six firms as shown in Table 4-5, the sum of whose ranks totals 53.5. From a table of Quantiles of the Wilcoxon Signed Rank Test Statistic³, the appropriate critical value for $\alpha = .10$ is 43. Null Hypothesis 5 is therefore rejected. There is a positive change in buyer-supplier relationships for firms classified as "Proactive".

The group of Type 4 suppliers consists of four firms whose ranks total 22.5. The same critical value of 43 is applicable, but in this case the null Hypothesis 6 is retained. There is no significant change in buyer-supplier relationships for firms classified as "Active Participants".

Table 4-6 below displays the results of sign tests for all four supplier types plus an overall test across all factors and all firms. The smaller of either plus or minus values is used as the relevant test statistic to compare with appropriate critical values.

For Type 1 supplier firms, it can be seen that changes in the buyer-supplier relationship are significant at the $\alpha = .10$ level. Even at the $\alpha = .01$ level the test statistic of five minus values compares with the critical value of 10, indicating statistical significance. For supplier types 2 and 4, the null hypotheses of no change in buyer-supplier relationships is upheld. Suppliers of Type 5, like those of Type 1, found significant relationship changes even at the

3. W. J. Conover, Practical Nonparametric Statistics. New York: John Wiley & Sons, Inc., 1971, p. 383.

$\alpha = .01$ level. However, the direction of change for Type 5 suppliers was negative.

Table 4-6

Sign Test Values for Supplier Types 1,2,4,5 and Overall

	Supplier Type				Overall
	1	2	4	5	
Cells	60	30	40	30	160
# 0's	23	13	28	17	81
# +'s	32	8*	8	0*	48
# -'s	5*	9	4*	13	31*
N (+ & -)	37	17	12	13	79
$\alpha = .10$ CV ⁴	13	4	2	3	32

* Test statistic.

Decision rule = retain null hypothesis if $TS > CV$.

QUESTION THREE SUMMARY

Using the Sign Test, Hypotheses 6 and 9 are rejected. There is significant change to buyer-supplier relationships, both for firms who are proactive, Type 1 (positive change) and for firms who are only token participants, Type 5 (negative change). This is a strong indication to managers that proactive participation on the part of suppliers whose

4. M. Tate and R. Clelland, Nonparametric and Shortcut Statistics. Danville, IL: Interstate Printers and Publishers, Inc., 1957, p. 140.

customers have countertrade obligations builds buyer-supplier relationships. Conversely, suppliers who elect only token participation, even in the face of customer requirements, find relationships with those customers deteriorating.

Suppliers who provide moderate levels of support for their customers' countertrade obligations, either when requested or required to participate by their customers (Supplier Types 2 and 5), find no significant relationship change. Null Hypotheses 7 and 8, postulating no change, are retained.

Hypotheses 10 and 11 were not tested, since countertrade firms did not identify any of the suppliers as being in either of these categories nor did supplier firms so classify themselves. Every supplier participated to one degree or another in the reciprocal obligations of its customers. This is interesting in and of itself as it suggests that the practice of flowing countertrade reciprocal obligations down through the supply base is commonplace and that suppliers not only accept but expect the practice as routine. This also provides further support for the Dyadic Framework.

Countertrade firms perceived less change in buyer-supplier relationships than did their suppliers. These four firms also evaluated change in the same ten relational attributes as did the supplier firms. Firm A reported net change of +7; Firm B, -1; Firm C, Zero; and Firm D, +3. As

will be seen from Table 4-7, the zero of firm C is the net of plus and minus changes.

Table 4-7
Countertrade Firm Perception of Relationship Changes

Attribute	Countertrade Firm				Total
	A	B	C	D	
1. Goods	0	0	0	0	0
2. Terms	0	0	0	0	0
3. Delivery	0	0	0	0	0
4. Communication	+2	-1	+1	+1	+3
5. Power	0	0	0	0	0
6. Trust	+1	0	0	0	+1
7. Formality	+1	0	-1	-1	-1
8. Commitment	+1	0	0	+1	+2
9. Expectations	+1	0	0	+1	+2
10. Dependence	+1	0	0	+1	+2
Totals	+7	-1	0	+3	Grand Total: +9

For Countertrade firms, there are 40 cells, 26 of which have zero values, 11 were plus and 3 were minus. A Sign Test was performed with $N = 14$. A test statistic of 3, the smaller of the sum of positives or negatives, compares to the critical value 3 at the significance level $\alpha = .10$. There is some perception of change by the four countertrading firms. The very large proportion of zero

change cells (26) to total cells (40) indicates that the overall positive perception is not strong.

SUMMARY OF TESTS OF HYPOTHESES

The following figure (4-9) summarizes the results of tests of hypotheses for all three research questions.

Question	Issue	Findings
1	Choice among three options to dispose of reciprocal purchases.	
H1	No favored disposal method	Reject null hypothesis; Internal Consumption favored
2	Factors important to source shift option choice.	
H2	Option "Withdraw"	Retain null hypothesis; no differences between respondents' factors
H3	Option "Divert"	Retain null hypothesis; no differences between respondents' factors
H4	Option "Outsource"	Reject null hypothesis; differences exist between respondents' factors
H5	Across all three options	Reject null hypothesis; differences exist between respondents' factors
3	Buyer-supplier relationship changes with countertrade involvement.	
H6	Proactive Volunteer	Reject null hypothesis; Positive relationship change
H7	Active Participant	Retain null hypothesis; Insignificant relationship change
H8	Partial Participant	Retain null hypothesis; Insignificant relationship change
H9	Token Participant	Reject null hypothesis; Negative relationship change
H10	Decliner change	Not tested; no such firms identified
H11	Refuser change	Not tested; no such firms identified

Figure 4-9

Research Question and Hypothesis Summary

CHAPTER SUMMARY

In this chapter, the quantitative data derived from the research was examined as it related to the hypotheses proposed in Chapter 3. Tests of Hypotheses 1 through 9 were presented, along with analyses to support or reject each, in turn. Hypotheses 10 and 11 were not tested, as no firms of the requisite type were identified. Qualitative information pertinent to each hypothesis was also presented.

CHAPTER V

CONCLUSIONS

This fifth chapter begins with a summary of the key findings of this research and a discussion of the significance of each. Following thereafter are discussions of the two primary frameworks derived from the research. The first is the buyer-supplier dyadic relationship framework, representing the flow-down of reciprocal obligations through the supply base of a countertrading firm. The second is a general conceptual framework of buyer-supplier relationship impacts from the reciprocal obligations of countertrade.

Limitations of the research are discussed, followed by suggestions for future research. Managerial implications of the research results are discussed along with related issues. Final comments regarding the research and its findings conclude this chapter and dissertation.

KEY FINDINGS

The results of this research can be grouped into four general categories. First, new purchasing practices in response to countertrade are identified. Next, structural changes in the supply base of countertrade firms are discussed. Changes to relationships between

countertrading firms and their existing suppliers are identified. Then, two frameworks describing countertrade activities are developed to illustrate the impact of countertrade on the supply base of countertrade firms and on relationships between countertrade firms and existing suppliers.

NEW PURCHASING PRACTICES

The purchasing function is changing in several ways as a result of countertrade reciprocal requirements. The factors which lead to these changes are as follows.

- * The frequency of countertrade demands is growing in international trade. This was supported by every respondent, both countertrade firms and suppliers.
- * Countertrade firms prefer to internally consume that which is reciprocally purchased. This is the conclusion of Research Question One, and confirms deductions from earlier research.

These findings clarify decisions facing purchasers from countertrading firms. There are increasing pressures on the purchasing function to find suppliers in countries where reciprocal obligations exist or may occur. Not only must reciprocal obligations be met, but preferably with internally consumable goods. This leads to the conclusion that internal consumption transactions will be pursued as a first option by purchasers of countertrade firms, and that such transactions, if not in the majority, will at least be

quite common. This establishes the foundation for the ensuing findings which relate to a countertrade firm's supply base.

SUPPLY BASE CHANGES

Purchasers facing significant reciprocal purchase obligations may need to reallocate orders from existing suppliers or their own firms to new countertrade suppliers. This research identified factors of importance to those reallocation decisions involving withdrawal or diversion practices.

- * At the $\alpha = .10$ level of statistical significance, the rank orders of factors which countertrade firms deem important to the source shift options, "withdraw" and "divert" are consistent.

First among the factors of importance to these decisions was the degree of economic development of the countertrading country. Concern over potential disruption to existing supplier relationships ranked second in importance, followed by volume of new orders. Firms were anxious about supply continuity. As countries move upward on the continuum of industrialization, more suppliers of internally consumable goods might emerge. Existing suppliers provide the balance of requirements not available from countertrade suppliers, so their continued goodwill is important. If the volume of new orders was growing,

countertrade firms had more flexibility in developing orders for new countertrade suppliers.

Unlike the previous two options, the rank orders of factors are different between countertrading firms when considering the source shift option, "outsource". Issues relating to these differences are discussed as questions for future research.

As countertrade becomes increasingly common, and internal consumption continues, existing suppliers are being displaced by new countertrade suppliers. This is observed in previous research (Carter and Gagne, 1988) and confirmed by all of the countertrade firms. The long term implications of displacement include increasing involvement in global supply chains with attendant international logistics concerns. These issues will be mentioned again as topics for future research.

BUYER-SUPPLIER RELATIONSHIP CHANGES

Traditional buyer-supplier relationships have been adversarial (Dobler, Burt and Lee). The trend now is toward long-term, close, collaborative buyer-supplier relationships with few, highly valued suppliers. Such relationships have, in some instances been characterized as partnerships. This research advances the argument for such relationships and further illustrates the detrimental effects of adversarial activities with the finding that suppliers who recognize the prevalence of countertrade and actively collaborate with

customers to jointly address reciprocal requirements improve buyer-supplier relationships, while those who take an adversarial approach deteriorate those relationships.

- * Proactive Volunteer suppliers enjoy improved relationships with their countertrading customers.
- * Active Participants and Partial Participants experienced no significant changes in relationships with their countertrading customers.
- * Token Participants found a significant deterioration in relationships with their countertrading customers as a consequence of their choice of level of involvement in customers' reciprocal requirements.

As countertrade demands expand, a firm's supply base may become increasingly essential to successfully meeting these reciprocal obligations. Understanding the factors of importance to reallocation decisions and buyer-supplier relationship impacts from such decisions are important to managers.

DESCRIPTIVE FRAMEWORKS

This dissertation includes two frameworks which contain new descriptions of countertrade activity. The Dyadic Relationship Framework describes buyer-supplier dyads of countertrade transactions and the flow-down of reciprocal requirements into several tiers of the supply base of a countertrading firm.



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The General Conceptual Framework illustrates the impacts of countertrade transactions on buyer-supplier relationships. It was developed as an extension of the concepts of Jean-Francois Hennart's 1990 work. Hennart illustrated the first half of the countertrade equation - the formation of the reciprocal agreement. His model describes the various forms of countertrade which create reciprocal purchase obligations. The conceptual framework of this dissertation extends the concepts of Hennart's model to include the second half of the countertrade equation - reciprocal purchase requirement responses and impacts.

DYADIC RELATIONSHIP FRAMEWORK

The third chapter contains a framework for Dyadic Relationships Under Countertrade Involvement (Figure 3-1). As originally drafted, it illustrates a primary dyad involving a multinational firm and its countertrade customer, and a secondary dyad comprised of the multinational firm and its existing supplier.

A tertiary dyad is derived between the multinational firm and a new countertrade supplier who is sought to partially fulfill a countertrade reciprocal obligation. A quaternary dyad also evolves when countertrading firms pass reciprocal obligations through to their existing suppliers. The existing supplier then selects a new countertrade supplier to assist in fulfilling reciprocal obligations of its customer, the countertrading firm.

The framework was expanded by the discovery that following acquiescence by primary suppliers to reciprocal obligation flow-down from countertrading firms, these supplier firms employ the same practices with their sources. In other words, a reciprocal obligation surely reaches second tier suppliers to the countertrading firm. While no research was conducted with suppliers of third and lower tiers, more than half of the first tier suppliers who participated in this research indicated that their (second tier) suppliers also passed portions of the obligation on down into the supply chain. Figure 5-1 below illustrates these changes.

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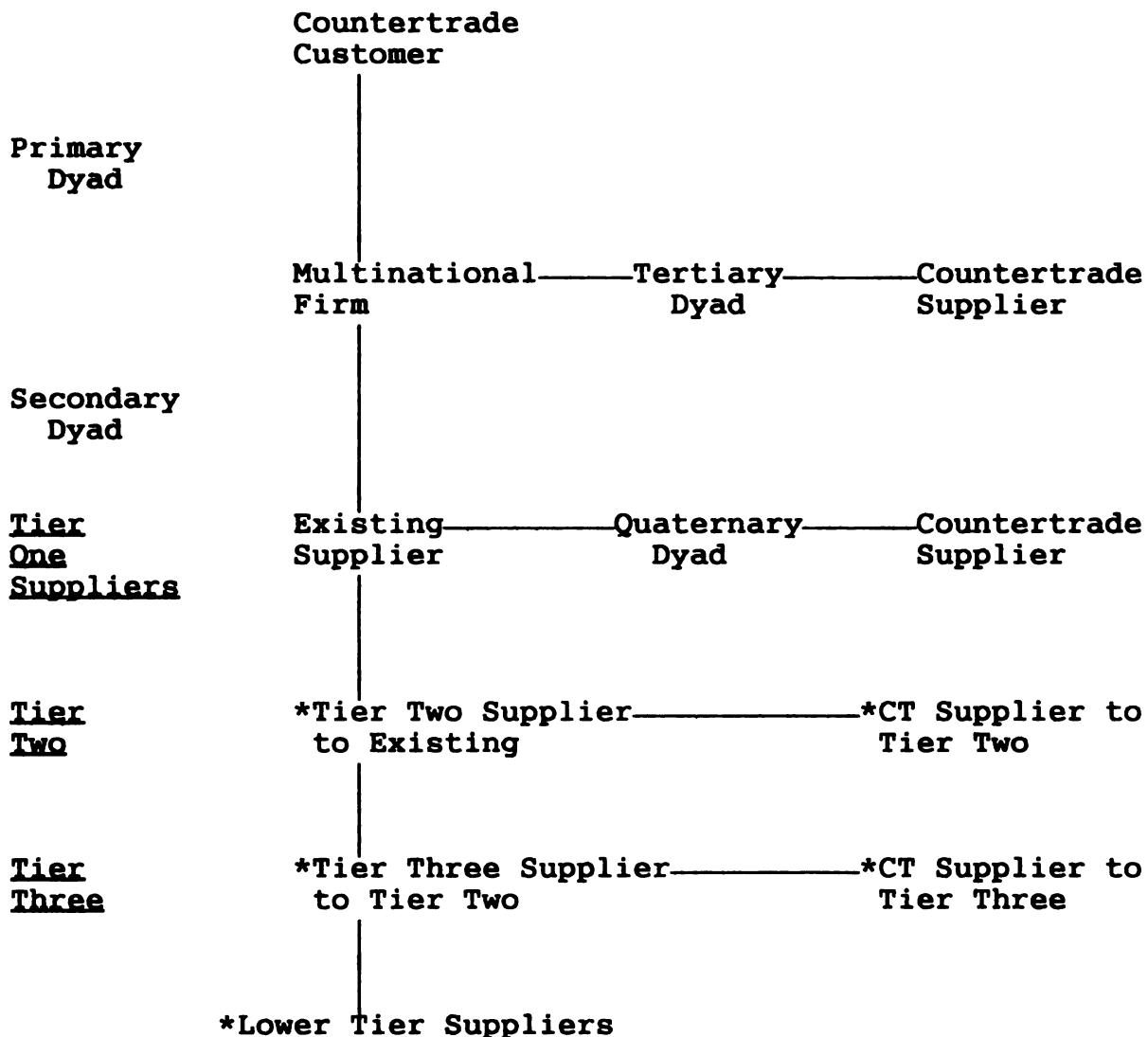
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* Indicates revisions from original framework.

Figure 5-1

Dyadic Relationships Under Full Countertrade Involvement

Suppliers as Countertrade Firms

Six of the supplier firms were, themselves, countertrading firms, selling products or components to

countries where countertrade was required and thereby incurring their own reciprocal obligations. In the experience of one supplier, countries often require major sub-contractors to accept their own (and sometimes different) reciprocal obligations aside from those required of the prime contractor.

Since these firms had their own obligations, they more easily understood and more readily accepted customers' requests for assistance with countertrade obligations. Two countertrading firms and nine suppliers noted that it is now standard buyer-supplier contract language to require at least the supplier's best efforts to purchase in support of reciprocal obligations of buying firms. These clauses demonstrate flow-down activity and provide partial support for the Dyadic Relationship framework.

Lower Tier Supplier Participation

Amplification of the framework came from all supplier firms who discussed the practice of passing through to their suppliers not only parts of reciprocal obligations acquired from the sale of their own products, but also obligations of their customers. In other words, the obligation flow-down does not stop at the primary supplier level, but continues on down into the supply chain.

Figure 5-2 below illustrates the primary reciprocal obligation incurred by the countertrade firm from the countertrade customer or country. The subsequent flowdown

of that obligation from the countertrade firm into the supply base is shown. In addition, the first tier supplier may, in some cases, incur its own reciprocal obligation, which it also flows down to lower tier suppliers.

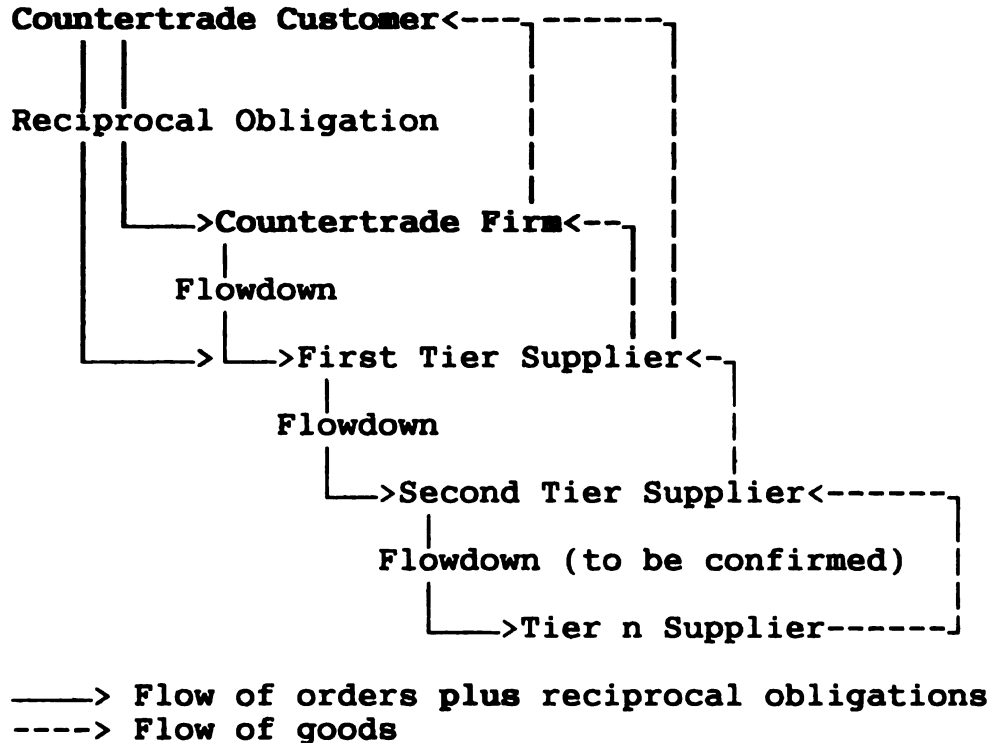


Figure 5-2

Reciprocal Obligation Flowdown

The flowdown of reciprocal purchase obligations from first tier suppliers several layers down into the supply base is a new phenomenon which brings forth changes in supplier selection criteria. Smaller firms, perhaps ones with only domestic interests, now may become involved. They may be several tiers removed from the firm whose reciprocal obligation they attempt to address. Suppliers may find changes in relationships with their customers as a result of



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these reciprocal activities. This notion will be visited in the next section.

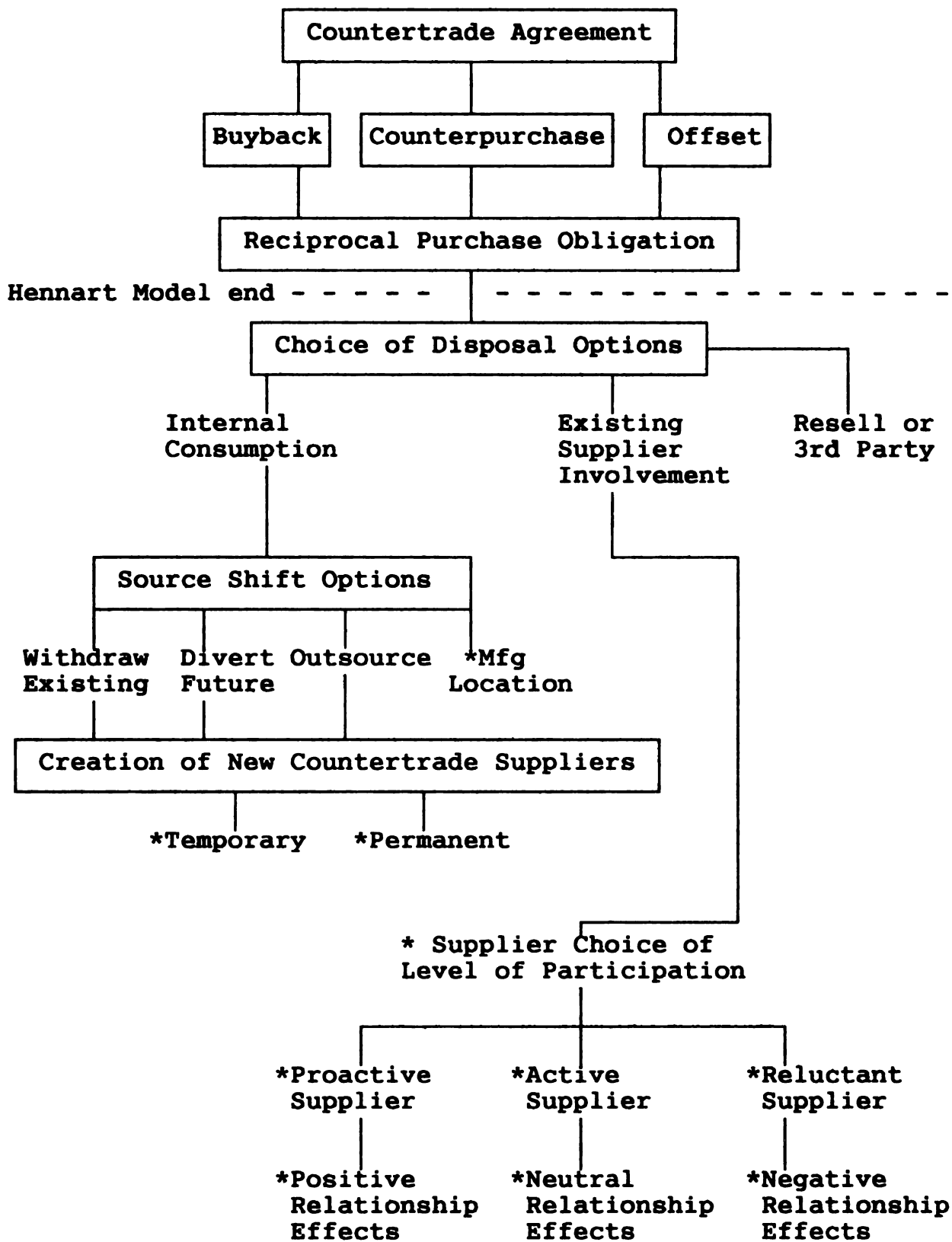
THE HENNART COUNTERTRADE FRAMEWORK REVISITED

A countertrade transaction consists of two fundamental parts: the sales agreement from which a reciprocal obligation is incurred, and the reciprocal activity which follows. Hennart (1990) developed a framework to represent the first half of a countertrade transaction. The purpose of his research was to derive succinct classifications and definitions of the various forms of countertrade transactions. In this pursuit, Hennart focused on the countertrade agreement itself, the first half of the transaction. He then developed the most comprehensive countertrade framework available to demonstrate the various forms of countertrade and their characteristics. He defined three forms of countertrade agreement which result in reciprocal purchase obligations; buyback, counterpurchase and offset. Forker (1991), Carter and Gagne (1988) and others have identified these three countertrade types as encompassing the vast majority of all countertrade agreements, a characteristic which invites investigation. The foundation of this research, therefore, is in Hennart's framework and Forker's findings.

This research begins at the point where a countertrade agreement has been struck and a reciprocal purchase obligation has been undertaken. The countertrade firm must

make two key decisions. If the firm must purchase a given value of goods from a specific country, how will it dispose of them? Research Question One addressed this issue, the results of which showed that countertrading firms prefer to satisfy reciprocal obligations through purchases of internally consumable goods. Alternately, or in many cases additionally, they involve existing suppliers in these reciprocal obligations by persuading suppliers to assume a proportional share of the obligation, or to make purchases from the countertrading country which will be credited against the reciprocal obligation.

If the firm elects to internally consume the goods, it must decide how to shift its internal requirements from existing sources to new countertrade suppliers. This leads to an investigation of the impacts of these decisions on buyer-supplier relationships. Figure 5-3 extends the concepts of the Hennart framework from identification of the types of countertrade requiring reciprocal purchases to include the second half of the countertrade transaction and serves as the basis for future research and hypothesis testing.



* Indicates revisions from original framework.

Figure 5-3

Revised Conceptual Framework

REVISIONS TO CONCEPTUAL FRAMEWORK

In addition to the revisions to the original conceptual framework of Chapter Three that resulted from the hypothesis tests, another significant revision emerged from the interview data. In addition to the source shift alternatives originally noted (withdraw, divert and outsource), a fourth option was identified.

Intrafirm Manufacturing Location Shift

Five suppliers and three countertrade firms agreed that shifting work from one of their international manufacturing locations to another is often an attractive choice. Moving work from a company facility in one country where the firm has no countertrade obligation into another company facility in a country where an obligation exists both helps to satisfy the reciprocal need and allows the firm to retain control of the process. While this option falls outside of the strict definition of the purpose of Research Question Two, (to find factors of importance when choosing between several supplier order reallocation options), it is clearly an important option when determining the mechanism by which reciprocal obligations will be met. Every firm which uses this option emphasized that the overriding issue determining its application is not the current reciprocal obligation, but the impact such a shift may have on the ability of the firm to make future sales.

Not only is the intra-firm shift an option, it may well be a special advantage. One firm with almost 100 locations worldwide, described itself as, "ideally suited" for this type of activity. Another said, "Major multi-nationals, especially ones involved in consumer goods have an advantage (compared to high tech firms) since it is relatively easy to move production to, or source components from countertrade countries."

While this intra-firm shift option is a viable one from the perspective of countertrading firms, it does not impact buyer-supplier relationships. It does, however raise questions about intra-firm relationships which are topics for future research.

LIMITATIONS OF THE RESEARCH

STATEMENT VERIFICATION

It should be noted that all of the statements made by those interviewed for this research are unsubstantiated. In other words, secondary verification was not pursued. Information provided to the researcher was presumed to be correct. In this context, it may be useful to recall that the research involves perceptions of change by individuals. As such they may not require, nor may it be possible to provide secondary verification.

NAMED SUPPLIERS

Countertrade firms were asked to identify key suppliers to participate in this research. Suppliers who were named by countertrading firms may not have been ones with whom those firms had poor relationships. Therefore, results of this research may be skewed away from major negative changes in buyer-supplier relationships under countertrade. Partial confirmation of this proposition may come from the fact that there were no supplier firms who declined to participate in the reciprocal obligations of their customers.

In retrospect, it appears unlikely that countertrading firms would direct a researcher to a supplier who had refused to participate and consequently had been stricken from the "approved supplier" list, or with whom the relationship had dramatically deteriorated. As suppliers in either the Decliner or Refuser categories were, by definition, not countertrade participants, and since countertrade firms were asked for names of supplier who had been, in some way involved, it is reasonable to expect that neither of these categories would be represented.

GENERALIZABILITY

Following the replication methodology of Yin (1989), a framework was proposed in Chapter One. It was refined with each interview until it represented the general position of all of the firms sampled. The sample was, however, purposive. Forker's 1991 study indicated that

countertraders are predominantly large, manufacturing-processing firms: therefore, the firms selected for this research conformed to that type. With 66 percent of her countertrade firms having more than 10,000 employees, and 62.5 percent of countertrading firms being classified as manufacturing/processing, these classifications may represent the majority of countertrading firms (Forker, 1991).

Even though both the General Framework of Chapter One and the Dyadic Relationship Framework of Chapter Three are modified to represent participant responses, and therefore reflect replication of pattern among them, caution should be exercised in generalizing beyond the sample and the category of firm which it represents. Further replication of the research with other kinds and sizes of firms will determine the extent of generalizability beyond the category of this research.

DIRECTIONS FOR FUTURE RESEARCH

From the qualitative and quantitative data collected from the interviews, several issues have been identified which provide opportunities for researchers to develop and expand theory, and to investigate actual practice. They may be categorized two ways; those that are direct extensions of this research and those which point to new directions or issues. The following sections summarize these opportunities.

QUESTIONS AS DIRECT EXTENSIONS OF THIS RESEARCH

Validation of Frameworks

One of the immediate needs of this stream of research is to validate the two frameworks developed from the interview data. Both the Revised Conceptual Framework (Figure 5-3) showing buyer-supplier relationship impacts from countertrade involvement, and the Dyadic Framework (Figure 5-2) which illustrates reciprocal obligation flow-down into the supply base, must be empirically tested, since they were developed from in-depth exploratory research using a small sample. Further replication with other kinds and sizes of firm will determine the extent of generalizability beyond the large, multinational manufacturing firms of this research.

Obligation Flowdown Issues

One of the major findings of the research is the reciprocal obligation flowdown from countertrading firms to suppliers. What is the extent of the flowdown illustrated by the Dyadic Relationship Framework? How many tiers of suppliers become involved?

Smaller, lower tier suppliers are reported by three suppliers to be less willing to participate than their larger first and second tier counterparts. This may in part be attributed to the view reported by one supplier that these smaller firms see their work going offshore, often permanently. Because of their smaller size, the loss of

orders to new countertrade suppliers has more of an impact. Does this mean that resistance to participation grows the farther down the obligation flows in the supply chain?

Another small supplier problem is illustrated by the first-tier supplier who related the following. "Small companies are being closed out (of orders from higher tier suppliers) due to lack of ability to offer offset help." These lower tier suppliers tend to be smaller and less experienced in international trade, so are less willing to purchase goods with which they are not familiar, and less able to assist with reciprocal obligations of higher tier firms.

Five suppliers and two countertrade firms observed that there may be other limits to supplier participation in customers' reciprocal obligations. Presently, proactive suppliers build better relationships with customers, but as the number and scope of countertrade demands increase, additional pressures will be brought to bear on more international firms. This will result in intensifying pressures on suppliers. As one observed, "we are now not far from the 'point of no return' where there is no longer enough product or purchasing to spread around." At this point, relationships may deteriorate as suppliers are less and less able to assist with customers' growing obligations. Further research will define the limits of obligation flow-down into the supply base and its impacts on lower tier

suppliers, as well as contribute to the Dyadic Relationship framework development.

Order Reallocation Issues

Selection of non-countertrade suppliers may be based on two new criteria; their willingness to participate in the countertrade firm's reciprocal obligations and the impact of suppliers' purchases on the countertrade firm's future sales prospects. All of the countertrade firms employed these practices. It would be interesting to determine the impact of supplier participation on order reallocation decisions. Does the fact that a supplier aids significantly in the discharge of a countertrade firm's reciprocal obligation influence the reallocation decision? Does such aid insulate the supplier, entirely or in part, from reallocation?

The outsource element of the reallocation decision of Research Question Two was found to have rank orders of factors that differed between countertrading firms. Why do such differences exist? Among the factors which might be influential are firm size, specific industry and percentage of product value represented by internal manufacturing. The answer to this question should further the development of the Conceptual Framework and provide additional guidance for the reallocation decision.

Supplier Non-participation

This research failed to identify suppliers who elected not to participate in their customers' countertrade obligations (supplier types 3 and 6). This is perhaps the result of the process by which suppliers were identified. It seems unlikely that suppliers who elected not to become involved in these transactions and consequently were no longer active suppliers to countertrade firms would be named to participate in this research. It may be instructive to search out such suppliers to answer the following questions:

- * What were the reasons for their non-participation?
- * What were the impacts of that decision on buyer-supplier relationships?

As previously noted, one supplier described its progression from outright refusal through the various stages of response to its present position as a proactive participant in customer reciprocal obligations. If this is common, it may provide guidance to managers who initially consider adopting either the "Decliner" or "Refuser" stance. Perhaps answers to the two questions above might encourage supplier managers to reexamine their level of participation and aid in developing the Conceptual Framework

QUESTIONS PERIPHERAL TO THIS RESEARCH

Intrafirm Relationship Effects

In addition to the three source shift options identified in Chapter Three (Withdraw, Divert and Outsource)

a fourth option emerged from the research responses.

Several multinational firms noted that having facilities in many countries enabled them to address reciprocal purchase obligations more easily than firms with few locations, since it was relatively easy to move the manufacture of a product or component from one country to another in response to these obligations. The following questions arise from this shift.

- * What impact does this have on relationships between sister firms or sister divisions?
- * How might the manager of one division view loss of orders and revenue from his/her division to support sales requiring reciprocity in another division?
- * What evaluation processes do firms use to assess overall corporate benefit in these circumstances?
- * What steps, if any, are taken to minimize negative internal impacts of such shifts?
- * How might firms recognize and reward the acceptance of this type of negative impact on one division in support of positive results for another?

Answers to these questions may illustrate significant operational differences between countertrade and non-countertrade firms. These issues may point to the need for new performance measures and rewards for firms engaged in countertrade. They will also help develop understanding of this element of the Conceptual Framework.

Multi-Division Countertrade Organizational Structure

By coincidence, two of the suppliers interviewed happened to be different divisions of the same company. Since they had different approaches to management of countertrade/offset obligations and requirements, it may be worthwhile to compare other such situations. This may give guidance and insight into the effectiveness of decentralized countertrade management compared to centralized or combination structures.

Available Countertrade Supplier Technology

One of the often-cited difficulties of countertrade is the situation where the countertrading country has not reached a sufficient level of industrial development to produce goods of a technology and quality suitable for internal consumption by the countertrading firm. Curiously, firms from the defense and aerospace industries were not ones to make these claims. Instead, they reported that the opposite is true.

As defense requirements decline following the abatement of the cold war, capacity from the defense industry is available for conversion to commercial use. The result is that worldwide excess capacity exists in many highly technical fields. Countries where this situation exists are likely to make countertrade demands aimed at employing this idle capacity by producing parts of the equipment or machinery being purchased.

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The claim of firms in this situation is that there is no longer enough of the product to go around to all of the customer countries, even if they were to stop manufacturing parts and components entirely. A reevaluation of common problems cited in early countertrade research might be in order to determine if these conditions still exist. Perhaps there are two distinct populations; firms who use technologies for which worldwide excess capacity exists, and firms who use technologies not in excess capacity which are of interest to countertrading countries. Answers to these questions might expand understanding of the countertrade phenomenon and give guidance to managers in forecasting and planning for reciprocal demands.

Purchasing Structural Changes

The purchasing function may be expanding to include consideration for new business development as a consequence of the use of purchasing power to facilitate sales. Two supplier firms identified new job titles of "Manager of Purchasing and New Business Development." Is this an emerging trend? If so, it might contain implications relating to organizational structure and the relationship between the purchasing and marketing functions in countertrade firms.

Foreign Suppliers

From the information supplied by countertrade firm C and two suppliers, it appears that foreign (non U.S.)

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suppliers may be regarded differently than their domestic counterparts. Firm C explained that it tried to confine the process of shifting orders from existing suppliers to new countertrade suppliers to foreign existing suppliers. In other words, relationships with domestic firms were more highly regarded than those with foreign firms.

A supplier responded similarly by noting that it tried to arrange consumption of its countertrade purchases by its foreign divisions, rather than bringing goods back into this country to disrupt relationships with domestic suppliers. Another supplier cited an example where it previously purchased from a German supplier, but shifted this requirement to an Italian supplier when the firm acquired a countertrade obligation in Italy.

The central issue with these firms was the preservation of relationships with domestic suppliers. Shifting orders from a foreign supplier to a countertrade supplier was not regarded as having as large a potential impact on the firms' continuing operations as shifting from a domestic supplier to a countertrade supplier. This leads to the question of whether or not there are several classifications of suppliers and attendant differences in management practices. Are there also differing levels of change to buyer-supplier relationships following countertrade involvement? Again, answers to these questions should aid managers and theory development.

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Logistical Implications

There are many logistical implications to globalization of supply chains as would occur with an expanded base of countertrade suppliers. As supply chains lengthen, delivery surety may decline, making Just-in-Time manufacturing more difficult, at best. Logistics costs are an important consideration for any product's competitiveness. Longer supply chains will increase these. Countertrade sources may also be in less developed countries where infrastructure such as roads and port facilities may be inadequate. Longer supply chains mean increased pipeline inventories, with their attendant costs. A whole stream of research may well be available to those investigating logistical impacts to the supply base from countertrade.

Concluding Comments

Before a complete theory or model of a phenomenon can be constructed, the phenomenon must be well understood. Countertrade, as a phenomenon, is little understood in its details, yet countertrade is a fact of life for many multinational firms. Because of its pervasive characteristics and a high probability of increased demands, we must better understand this phenomenon. It is, therefore, a fruitful topic for researchers from many disciplines including accounting, finance, economics, marketing, purchasing, operations, logistics and strategy/policy. The knowledge gaps and questions detailed above, along with their answers, may enable researchers to

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more fully understand countertrade, appreciate its nuances, and therefore assemble a consolidated model and theory of its behavior.

MANAGERIAL IMPLICATIONS

Modern countertrade began as a means of enabling trade when buyers lacked hard currencies with which to make purchases. It expanded to include political expediency for governments making large purchases from foreign, rather than domestic suppliers. It also, at times, is seen as a mechanism for easing balance of payments problems. In short, it was a mechanism to expand trade and promote economic development for the country making reciprocal demands.

A transition seems to have begun, on the part of countertrading multinational firms, from reactive response to reciprocal demands, to proactive use of reciprocity, and a firm's purchasing power to enable future sales. At one point, firms faced with reciprocal demands tended to try to minimize and avoid them. While minimization efforts continue, firms now are using the purchasing function to establish the basis for future sales by making purchases in a countertrading country which poses significant market potential. This turnaround, from promoting economic growth of the countertrading country, to promoting sales of the multinational firm is, at the very least, an interesting phenomenon.

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Managers are faced with several key issues when directing a firm's international sales and purchasing activities as they relate to countertrade. Intensified countertrade demands seem a surety. One countertrader predicted that, "Countertrade and its requirements are only going to get bigger." In the words of another, "Countertrade is the hottest game in town." If, as they expect, the frequency and complexity of countertrade transactions expands, the purchasing function must increase its scope to include consideration of the impacts on marketing activity that order placement may have. Similarly, marketing personnel must work more closely with their purchasing counterparts to achieve what is increasingly a combined sourcing/marketing objective. Organizational changes, new supplier selection criteria and new roles for purchasing may result. Managerial implications then, may be of three types; those relating to purchasing practices, supply base changes and supplier relationships.

PURCHASING PRACTICES

Organizational Structure Issues

In some countertrading firms, there are three separate departments which may be involved in reciprocal transactions. The marketing department negotiates the sales agreement and the attendant reciprocal obligation. The purchasing department selects suppliers, based in part on

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willingness and ability to assist with countertrade obligations. Purchasing also selects countertrade suppliers in the buying country. In addition, there is often a countertrade organization which manages countertrade and offset programs, keeping track of all of a firm's worldwide reciprocal obligations and progress toward fulfillment of them.

There may be a lack of communication between the three, which in the words of one respondent causes "disconnects". The result is that a supplier who may have exerted considerable effort on behalf of the customer may not be recognized for its achievement by all of the customer's countertrade-related organizations. If these "disconnects" occur, then the supplier's effort may not be recognized when it is time to award additional business. In several cases, suppliers performed communications functions, linking intrafirm groups to prevent "disconnects".

One supplier observed that a firm's organizational structure may be a significant issue in that firm's willingness to undertake, and its ability to fulfill countertrade obligations. The supplier argued that a centralized purchasing department makes it far easier to coordinate and manage purchase requirements across several divisions to better and more easily find ways to meet reciprocal purchase obligations and still find internally consumable goods. A decentralized department fragments these efforts and makes the task much more difficult. This

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firm also suggested that a centralized structure makes it much easier to be proactive and to use purchasing as a marketing tool.

New Role for Purchasing

As an indication of the changing role of the purchasing function not only in countertrade, but international transactions, a supplier reported that he knew of two examples of changes in title for purchasers to "International Purchasing/New Business Development". This clearly indicates that purchasing activity, both domestic and international, is being viewed beyond its traditional purpose of continuity of supply.

The selection of suppliers and the subsequent placement of orders are now being viewed as mechanisms to be used to develop future sales of the firm's products. In the words of one countertrade firm, "Our primary concern in placing an order is how it will help us make future sales." Reciprocal obligations of countertrade have increased the awareness and use of reciprocity as a marketing tool, but now it is being employed by purchasing. New tasks often require additional training and education. Clearly, new attitudes of cooperation need to evolve between marketing and purchasing.

Reciprocal Impact on Future Sales

Three of the four countertrade firms and most of the supplier firms were emphatic in their insistence that a guiding principle in their selection of countertrade

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suppliers was not the fulfillment of the present reciprocal obligation; instead, it was the influence that order placement had on the firms' abilities to make future sales. In other words, countertrade suppliers were selected based largely on the impact those purchases would have on future activity.

The clear implication, confirmed by direct question, is that countertrade suppliers continue to supply goods after reciprocal obligations are fulfilled. This confirms displacement of existing suppliers noted by Carter and Gagne (1988), and points to the delicacy of reciprocal purchase practices as they relate to existing supplier relationship maintenance.

Top Management Involvement

One supplier and two countertrade firms commented that as the frequency and importance of countertrade transactions has grown, top management has now become involved, and with this involvement, purchasing is becoming a strategic marketing tool. Their opinion is that as countertrading grows in strategic importance, top management of most multinational firms will take a more active interest in purchasing. Senior managerial perception of purchasing may be enhanced for those departments prepared for countertrade's increased responsibilities. The opposite may be true for those unready. Broader, more global market understanding underlies the ability to proactively identify

prospective suppliers of internally consumable goods, not only in countries where sales are presently made, but where sales may be targeted in the future. This may lead to the expansion of the need for purchasers to develop and enhance research skills necessary for commodity studies and forecasting.

SUPPLY BASE CHANGES

New Supplier Selection Criteria

A whole new set of supplier selection criteria appears to be emerging. Suppliers to countertrade firms are being selected not just with the traditional standards of specifications, quality, availability and price. Now, suppliers' willingness to assist with the reciprocal obligations of their customers is a significant determinant in supplier selection. One firm stated, "Supplier selection, both ours and our customers' is at least in part based on willingness to participate in countertrade requirements." Another said that quality, delivery and a competitive price are now 'given' and that additional services, including countertrade help, are now order winning determinants.

Another supplier observed that there is increasing pressure from many customers, with a trend toward requiring rather than requesting participation in customers' obligations. That supplier also noted that second tier suppliers are now getting similar pressure. Countertrade

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firms are, in some cases, making acceptance of participation in reciprocal requirements a prerequisite for bidding on contracts. Participation may require as much as 100% offset; the supplier may be required to reciprocally purchase 100% of the value of the goods supplied.

This flow-down may at some point reach an end because of the size and capability of small suppliers. Third or fourth tier suppliers may be so small that they have neither the expertise nor the resources to become involved in international purchases. These small suppliers may impart so little to the value of the finished product that their contribution, even if they are capable, may be insignificant. Consequently, these suppliers may see their business shifted to larger competitors or to new countertrade suppliers.

Similarly, new countertrade suppliers are being selected based not only upon traditional criteria, but upon the impact that the selection will have on the countertrade firm's ability to make future sales. This may come full circle if non-countertrade suppliers are additionally judged not merely on their willingness to assist with customers' obligations, but on the impact of these suppliers' purchases on the ability of the countertrade firm to make future sales. Not only is the regular supplier being judged on its willingness to assist with customers' obligations, but how they will assist is now an issue, as well. A strategic supply base now takes on a new dimension.

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Strategic Supply Base

The strategic supply base of a countertrade firm may be even more important than that of a non-countertrading multinational, since suppliers often perform the additional and most important function of aiding the countertrading firm to discharge its reciprocal obligations. It is now common, indeed even standard in some industries, for contract language to include a supplier's agreement to support countertrade obligations of the buying firm. Even though this may be on a "best efforts" basis, inclusion of such a clause as standard contract language is recognition of the prevalence of countertrade in today's international business environment. It also documents the flow-down of reciprocal obligations from the countertrade firm to its primary suppliers.

Purchased Content and Outsourcing

Although a low purchased-content-to-product-value ratio may prompt firms to outsource to satisfy countertrade requirements, the opposite situation, a large percentage of purchased content, may cause firms to seek supplier assistance. In the words of one such firm, "With 75-85% supplier content in our product, we must have involvement from our suppliers if we are to meet our reciprocal obligations." The extent and type of such involvement may affect the relationship between the firms, as shown by the findings of Research Question Three.

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Both countertrade firms A and D, as well as four interviewed suppliers, noted increasing difficulty in complying with reciprocal requirements as the percent of purchased components in their products declined. One supplier noted that with only 25% of its product's value coming from purchased components and raw materials, it was very difficult for it to comply with large percentage offset demands. This firm observed that as the percent of purchased content declined, its propensity to outsource increased. Another firm in a similar situation said that it outsourced 50% of one of its products.

This leads to the proposition that there is an inverse relationship between outsourcing and the percentage of product value which consists of purchased content. As purchased content declines, firms may be forced toward outsourcing to comply with countertrade demands. In reviewing potential countertrade transactions, managers may use this information to assess the ease with which the firm might comply with reciprocal demands, and therefore, the likelihood of full compliance with those demands.

SUPPLIER RELATIONSHIPS

Early Involvement

Working with existing suppliers in advance of the consummation of a countertrade transaction appears essential to the preservation of buyer-supplier relationships. Three of the countertrade firms related differentiation in

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supplier contract type to allow for countertrade requirements. They use long term contracts with key suppliers whose goods are essential. Other suppliers are given short term contracts and told that countertrade requirements may cause non-renewal if orders need to be shifted to new countertrade suppliers.

The mechanism by which suppliers approach customers' reciprocal obligations is similar. The key words, according to one supplier, are "early" and "substantial" with regard to their current proactive approach to involvement in these transactions. Another supplier described his firm's transition from outright refusal to participate, even in the face of customer demands, through each of the six scenarios of Research Question Three, to its present position as a proactive volunteer. This firm now believes in helping customers whenever possible, recognizing countertrade as an ongoing requirement. Both of these firms work actively with customers to jointly pursue transactions which require reciprocity.

This research has shown that involvement in these reciprocal obligations can impact relationships between buyers and suppliers either positively for proactive firms or negatively for minimally responsive firms. Given the high likelihood of growing countertrade demands, managers can not only take advantage of the improvement in buyer-supplier relationships which come about from increased communications and commitment between proactive firms, but

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use willingness to become involved in customers' reciprocal obligations as a tool to gain competitive advantage.

Commitment to Reciprocal Obligation Fulfillment

Countertrade transactions are now being viewed as ongoing activities, rather than the one-time transactions they were perceived to be in early practice. All of the countertrade firms confirm this.

One supplier said, "We never take on any countertrade transaction we don't think we can meet. We have never had to pay a penalty for non-completion." A countertrade firm claimed never to have failed to fulfill its reciprocal obligations in the several decades it has been involved in countertrade. Another responded that it often exceeded its obligations, especially in key market areas.

These observations are important, because they represent a departure from practices common to earlier countertrade obligations. Previously, it was commonplace to view countertrade transactions as one-time transactions. As such, firms often accepted penalty clauses for non-achievement of reciprocal purchase goals and built the penalty into the price of goods sold. They then paid the penalty and walked away from the transaction, having had no intention of meeting reciprocal obligations.

The new practices indicate the long term nature of many countertrade relationships, today. As noted above, all four of the countertrade firms of this research expect

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countertrade demands to expand and escalate. Additionally, they see long term sales opportunities in countries requiring reciprocity. Consequently, it is no longer politically acceptable to leave obligations unfulfilled. The perspective of these transactions has evolved from one-time to ongoing.

CONCLUSIONS

In sum, countertrade is changing the purchasing function in many firms. Responsibilities have been expanded to include significant market development considerations. The traditional supplier selection methods and criteria are altered, in a countertrade environment, to include suppliers' willingness to become involved in the reciprocal obligations of their customers.

The whole strategic focus of a firm's supply base may change under countertrade. It now may include involvement of several levels of a supply chain in the countertrade firm's reciprocal obligations in an environment where proactive participation leads to enhanced buyer-supplier relationships.

Traditional reciprocity takes the form, "I'll buy from you if you'll buy from me. As refined by proactive countertrade, it now asks, "Will my purchase from you today enable me to sell to you tomorrow?" It is likely to involve consideration of whether purchases from a foreign supplier

today may enable the buying company to sell to the foreign government or agency tomorrow.

This fifth chapter began with a review of the key findings of this research. The two frameworks of this research were discussed in their expanded form. First, the buyer-supplier dyadic relationship framework was shown to represent the flow-down of reciprocal obligations through at least two tiers of the supply base of a countertrading firm. The general conceptual framework was then expanded. In its final form it denotes buyer-supplier relationship impacts from the reciprocal obligations of countertrade in context of the three primary research questions.

Thereafter followed a discussion of limitations to the findings of this research. Suggestions for future research were explored, both as direct derivatives of these findings and relative to peripheral issues. Managerial implications of the research results were discussed along with related issues. Final comments regarding the research and its findings concluded this chapter.

This dissertation concludes with appendices containing a glossary, countertrade firm and supplier firm interview guides, and buyer-supplier relationship quotes. Following the appendices, both general and methodological bibliographies appear.

APPENDIX A

DEFINITIONS

Buyer: See Countertrade Buyer.

Countertrade: Any of the several forms of international reciprocity imposed on a multinational firm as a requirement to enable that firm to make a sale.

Countertrade Buyer: The organization whose purchase of goods from the foreign seller results in a reciprocal requirement.

Countertrade Firm: The multinational firm whose desire to sell to or into a country triggers a demand for reciprocity.

Countertrade Suppliers: Suppliers in the country with which the firm has a countertrade agreement, purchases from whom will be credited against the firm's reciprocal obligation.

Existing Suppliers: Those suppliers to a countertrading firm who existed prior to the countertrade transaction.

Primary Goods: Goods for the sale of which the countertrade transaction is initiated.

Purchasing Organization: That organization within a company which is formally constituted and which has formal authority to commit company funds for the purchase of necessary goods and services.

Seller: See Countertrade Firm.

Third Parties: Intermediaries or facilitators such as brokers or trading companies who assist with the disposition of goods not internally consumable by the seller.

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APPENDIX B

Countertrade Firm Letters

First Letter

Mr.
Company
Address
City, State, Zip

Date

Dear Mr. :

A major purchasing research project is in progress involving Michigan State University, Portland State University and the National Association of Purchasing Management. The purposes of this study are to identify and better understand the changes in buyer/supplier relationships which take place as a result of countertrade requirements.

Your expertise in countertrade and its implications and impacts would be invaluable to this research. Without your involvement, and that of others who, like you, have extensive countertrade experience, this research will be immeasurably more difficult, if not impossible. I am writing to ask for your participation in this project. About two hours of your time would be required for an interview which would be conducted at your convenience. All information will be strictly confidential, and will only be used in aggregate. No individual company information or statistics will be divulged.

I will call you next week to discuss this research. If you choose to participate, I would like to schedule an interview at a date and time most convenient for you in the near future. Once again, your participation would be of major importance to this project. I look forward to speaking with you about it.

Sincerely,

Lee Buddress, C.P.M.
Portland State University
(503) 725-4769

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Appendix B, Continued

Second Letter With Addenda

Mr.
Company
Address
City, State, Zip

Date

Dear

Thank you for agreeing to participate in this research. I'm looking forward to seeing you on ****. To expand upon our earlier conversation, my interest in countertrade is from a purchasing perspective; therefore, I am interested in those transactions which create reciprocal purchase obligations for the countertrading firm. More specifically, the focus of this research is on the purchase transactions which result from countertrade reciprocal obligations. There are three central issues this research will address. First, what is the favored means of discharging reciprocal purchase obligations? Second, if firms choose to internally consume some of their reciprocal purchases, how do they reallocate orders from existing suppliers to new countertrade suppliers? The third issue centers on changes to buyer/supplier relationships as a result of countertrade obligations.

Reduction of the supply base and creation of supplier partnerships are two current purchasing objectives. Reciprocal purchase requirements may affect those buyer/supplier relationships. If reciprocal obligations fulfilled through internal consumption do impact buyer/supplier relationships, in what ways?

In order to pursue these questions, both countertrading firms and their suppliers are being interviewed. It is hoped that purchase transactions made to fulfill countertrade requirements would be available for examination and discussion. Please be assured that all information will be used in aggregate, only. No individual company names, information or statistics will be divulged.

Thanks again for your help. I'll call you on **** to confirm our appointment. If you have any questions prior to then, please call me either at Portland State University or at home.

Best Regards,

Lee Buddress, C.P.M..
Portland State University

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Other

The following questions are descriptive of your firm. They are sent to you in advance of our meeting so that you can list the information at your leisure. We will review these and other topics during our discussion.

PRELIMINARY DEMOGRAPHIC INFORMATION

1. Does your firm produce consumer products___, industrial products___, or both___?

2. The PRIMARY business of your company is:

___Chemicals & Allied Products

___Construction

___Electrical & Electronic Equipment

___Energy: oil and gas

___Fabricated Metal Products

___Financial Services

___Instruments

___Lumber & Wood Products

___Machinery Except Electrical

___Paper & Allied Products

___Primary Metals

___Printing & Publishing

___Rubber & Plastic Products

___Stone, Clay, Glass & Concrete

___Transportation Equipment

___Utilities

Other_____

In round numbers, please provide the following:

3. Total sales for your entire firm for 1993 were

\$ _____.

4. Total number of employees for your entire firm is

_____.

5. Total purchases for your entire firm for 1993 were

\$ _____.

6. The percentage of 1993 purchases for internal consumption which came from countertrade suppliers was _____%.

7. The percentage of 1993 purchases which came from foreign, non-countertrade suppliers was _____%.

8. The percentage of 1993 sales which involved some form of countertrade was _____%.

I look forward to talking with you on ***, at which time we can discuss these data more fully. Thank you for your interest in this project.

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Appendix B, Continued

Thank You Letter

Mr.
Company
Address
City, State, Zip

Date

Dear :

It was a real pleasure to meet and talk with you. I am very grateful for the time you spent with me. (Follow with personalized comments regarding insights gained from this specific interview. Special thanks for the interviewee's time and assistance.)

Enclosed is a small token of my appreciation for your time and expertise so generously shared. The research is progressing well, with some interesting results which I will share with you when they are more fully developed. I may need to call you with a couple of follow-on questions before long, but in any event, your hospitality and willingness to share your expertise were what every researcher hopes to find but rarely does. Thanks, again.

Sincerely,

Lee Buddress, C.P.M.
Portland State University

APPENDIX C

Supplier Letters

First Letter

Mr.
Company
Address
City, State, Zip

Date

Dear Mr. :

A major purchasing research project is in progress involving Michigan State University, Portland State University and the National Association of Purchasing Management. The purposes of this study are to identify and better understand the changes in buyer/supplier relationships which take place as a result of countertrade or offset requirements. As a supplier to multi-national firms engaged in countertrade, you would be a significant contributor to this study.

Your expertise in countertrade and its implications and impacts would be invaluable to this research. Without your involvement, and that of others who, like you, have experience supplying countertrading firms, this research will be immeasurably more difficult, if not impossible. I am writing to ask for your participation in this project. About one half hour of your time would be required for an interview which would be conducted by phone at your convenience. All information will be strictly confidential, and will only be used in aggregate. No individual company information or statistics will be divulged.

I will call you next week to discuss this research. If you choose to participate, I would like to schedule an interview at a date and time most convenient for you in the near future. Once again, your participation would be of major importance to this project. I look forward to speaking with you about it.

Sincerely,

Lee Buddress, C.P.M.
Portland State University
(503) 725-4769

Appendix C, Continued

Second Supplier Letter With Addenda

Mr.
Company
Address
City, State, Zip

Date

Dear :

Thank you for agreeing to participate in this research.
Your contribution will be very important.

To expand upon our earlier conversation, my interest in countertrade is from a purchasing perspective; therefore, I am interested in those transactions which create reciprocal purchase obligations for the countertrading firm. More specifically, the focus of this research is on the purchase transactions which result from countertrade reciprocal obligations. The key issues with regard to suppliers are the mechanisms by which they become involved in the countertrade transactions of their customers and the level of that involvement. Are there changes to the relationship between the countertrading firm and its suppliers as a result of these transactions?

Reduction of the supply base and creation of supplier partnerships are two current purchasing objectives. Reciprocal purchase requirements may affect those buyer/supplier relationships. If reciprocal obligations fulfilled through internal consumption do impact buyer/supplier relationships, in what ways?

In order to pursue these questions, both countertrading firms and their suppliers are being interviewed. Please be assured that all information will be used in aggregate, only. No individual company names, information or statistics will be divulged.

Thanks again for your help. I look forward to talking with you on (date, time). If you have any questions prior to then, please call me either at Portland State University or at home.

Sincerely,

Lee Buddress
Portland State University
(503) 725-4769

The following questions are descriptive of your firm. They are sent to you in advance of our conversation so that you can list the information at your leisure. We will review these and other topics during our discussion.

PRELIMINARY DEMOGRAPHIC INFORMATION

1. Does your firm produce consumer products___, industrial products___, or both___?

2. The PRIMARY business of your company is:

___Chemicals & Allied Products

___Construction

___Electrical & Electronic Equipment

___Energy: oil and gas

___Fabricated Metal Products

___Financial Services

___Instruments

___Lumber & Wood Products

___Machinery Except Electrical

___Paper & Allied Products

___Primary Metals

___Printing & Publishing

___Rubber & Plastic Products

___Stone, Clay, Glass & Concrete

___Transportation Equipment

___Utilities

Other_____

In round numbers, please provide the following:

3. Total sales for your entire firm for 1993 were

\$_____.

4. Total number of employees for your entire firm is

_____.

5. Total purchases for your entire firm for 1993 were

\$_____.

6. The percentage of 1993 purchases for internal consumption which came from countertrade suppliers was _____%.

7. The percentage of 1993 purchases which came from foreign, non-countertrade suppliers was _____%.

8. The percentage of 1993 sales which involved some form of customer countertrade was _____%.

The additional attached pages constitute the substance of the research project and are forwarded for your review prior to our conversation. I look forward to talking with you tomorrow, at which time we can discuss these issues more fully. Thank you for your interest in this project.



*****REQUEST**

1. The Type 1 Supplier works with the countertrading firm from the outset of the countertrade transaction. The supplier may even anticipate the need to countertrade and assist in actively seeking out mutually beneficial opportunities. The Type 1 supplier perceives individual as well as mutual benefit (in the form of additional business from countertraded products) to participation in a customer's reciprocal obligations. This supplier perceives countertrade as necessary in today's global economy. The Type 1 firm is characterized by early and substantial participation in the reciprocal obligations of its customers.

2. The Type 2 Supplier is characterized by a reactive rather than proactive stance with regard to its customer's countertrade requirements. This supplier may participate in its customers' reciprocal obligations, but only after requests from the countertrading customer. While the Type 2 Supplier may perceive benefit to participation in a customer's reciprocal obligations, the benefits barely outweigh the difficulties or additional administrative burden from such transactions.

3. In spite of requests by the countertrading customer for assistance with reciprocal obligations, the Type 3 Supplier declines to participate. This supplier perceives greater detriment or operational difficulty to involvement in reciprocal purchase requirements of customers, than benefit from any additional business that such transactions may bring. For a variety of reasons, this supplier sees international reciprocity as not being in its best interests.

*****REQUIRE**

1. The Type 1 Supplier will participate significantly in the reciprocal obligations of its customers, but it does so only in response to the customer's demands. It is likely to participate to maintain its place as a supplier to the countertrading firm. On balance, countertrade drawbacks outweigh benefits in the perception of the Type 1 Supplier.
2. Type 2 suppliers will resist involvement in customers' reciprocal obligations, but after considerable pressure will make a token effort. For a variety of reasons, the supplier perceives far greater disadvantage than benefit from involvement in its customer's reciprocal obligations.
3. Even though a countertrading firm may require its suppliers to take part in reciprocal obligations, there will be no participation by Type 3 suppliers. For a variety of reasons, they decline to become involved in their customer's reciprocal obligations, even though their position as a supplier to the countertrading firm may be jeopardized.

There are many factors which influence or describe the conditions and boundaries of a buyer/supplier relationship. Some researchers have identified three categories of factors as Inputs, Durability and Consistency. Within each of those are several descriptive items as follows. We are interested in these as they relate to changes in buyer/supplier relationships.

Inputs

1. The goods and their specifications.
2. Terms of Sale, including price and payment terms, quantity discounts and other negotiated elements.
3. Delivery promptness and completeness.
4. Communication.

Durability

5. Exercise of power of buyer over seller.
6. Trust between the buying and selling firms.
7. Formality of communication and transaction.

Consistency

8. Commitment to each other for future business.
9. Expectations of the results/outcomes of the relationship
10. Mutual dependence between the two firms.
11. Other issues?

Please prioritize these and any other factors which may be important.

As a result of your firm's involvement with reciprocal countertrade obligations of your customers, have any of the above factors changed? If so, by how much and in which direction?

- 3 = Large negative change
- 2 = Moderate negative change
- 1 = Slight negative change
- 0 = No change
- +1 = Slight positive change
- +2 = Moderate positive change
- +3 = Large positive change.

IMPACT

FACTOR	-3	-2	-1	0	1	2	3
Goods							
Terms							
Delivery							
Communication							
Power							
Trust							
Formality							
Commitment							
Expectations							
Mutual Dependence							
Other							

Appendix C, Continued

Thank You Letter

Mr.
Company
Address
City, State, Zip

Date

Dear :

It was a real pleasure to talk with you. I am very grateful for the time you spent with me. (Follow with personalized comments regarding insights gained from this specific interview. Special thanks for the interviewee's time and assistance.)

Enclosed is a small token of my appreciation for your time and expertise so generously shared. The research is progressing well, with some interesting results which I will share with you when they are more fully developed. I may need to call you with a couple of follow-on questions before long, but in any event, your hospitality and willingness to share your expertise were what every researcher hopes to find but rarely does. Thanks, again.

Sincerely,

Lee Buddress, C.P.M.
Portland State University

APPENDIX D

COUNTERTRADE FIRM INTERVIEW GUIDE

Pre interview: send questionnaire asking demographic questions relating to the firm. This will provide the opportunity for the respondent to accumulate the information accurately, and leisurely. Further, the primary objective of the first few minutes of the interview is to establish the interviewer as a friendly, benign but receptive presence. Toward this end, the initial discussion will be designed to put the respondent at ease.

Q1. Review of previously accumulated demographic data.

Q2. How long has _____ Company been involved in countertrade?

Q3. What is your overall impression of countertrade?

Good Points?

Drawbacks?

Q4. What forms/types of countertrade transactions do you find to be most common?

Q5. Could you describe for me, in generic terms, a typical _____ Company countertrade deal?

** For question 6, explain the research focus; on purchase transactions, not on the countertrade transaction which created the reciprocal purchase obligation.

Q6. Assume your firm had consummated a countertrade deal, and had acquired a reciprocal purchase obligation. Please rank, in order of preference, the following options:

- _____ > Internal consumption.
- _____ > Supplier involvement - supplier to assume a portion of the reciprocal obligation, or other involvement.
- _____ > Resell goods to non-supplier third party.
- _____ > Other _____.

Q7. What percentage of reciprocal purchases is disposed of in each of these ways?

- _____ > Internal consumption.
- _____ > Supplier assumes portion of reciprocal obligation.
- _____ > Resell goods to non-supplier third party.
- _____ > Other

(Q7A. Are you typically able to do what you preferred in Q. 7? Why or why not?)

Q8. Assume you elected to internally consume reciprocal purchases. Would you then choose from among the following options for reallocation of orders?

- A. Withdraw orders from existing suppliers and reissue them to new countertrade suppliers.
- B. Divert new orders which might have gone to existing suppliers in favor of new countertrade suppliers.
- C. Outsource to new countertrade suppliers, tasks previously performed in house.
- D. Other options?
- E. If any of the 3(a b c) is not used, why not?

Please review this list of factors which might potentially influence your choice among the options for reallocation of orders. Which would be influential, and to what degree, for each choice.

1. The volume of new and different requirements being generated within the countertrading firm (i.e. requisitions).
2. The percent of orders generated within the countertrading firm which are covered by long term contracts.
3. Level of volume commitments in contractual obligations.
4. Potential disruption to existing supplier relationships.
5. Level of your design secrecy of goods or tasks to be shifted to countertrade supplier.
6. Stage of product life cycle of goods to be shifted to countertrade supplier.
7. Level of economic development of the countertrading country.
8. Form of the countertrade agreement: Counterpurchase, Offset or Buyback.
9. Type of countertrade sale: Products, Technology or Project.
10. Size of order backlog of countertrade firm.
11. Degree of unionization of countertrading firm.
12. Other issues.

Q9. Using the following one-to-five scale, please rate the following (and any other) issues' influence on the choice among the following options:

1 2 3 4 5
 Least Most
 Important Important
 Factors Factors

Factor	1 - 5 Rankings of Order Reallocation Options		
	Withdraw	Divert	Outsource
1. Volume of new requirements			
2. % of orders on LT contract			
3. Contract vol. commitment			
4. Supplier relationships			
5. Design secrecy			
6. Product life cycle			
7. CT country econ development			
8. Form of CT agreement			
9. Type of Sale: Product, Tech or Project			
10. Size of order backlog			
11. Degree of unionization			
12. Other			

Q10. For the option "withdraw", please rank order all of the factors you rated "5".

Q10A. Please continue by rank ordering the 4's, 3's, 2's and 1's.

4's:

3's:

2's:

1's:

Q10B. Actual transactional examples of each of the three options.

Q10C. Please rank-order the factors for the other two options.

Q10D. If any of the options is not used by your firm, why not?

Q10E. If rankings change between transactions within an option, then what are the reasons for the changes.

RESEARCH Q3

Continuing on with the examination of the purchase transactions identified above (for Research Question 2), the intent of the next few questions is to determine the results and impacts of countertrade reciprocal obligations and the decisions discussed under Research questions 1 and 2.

First, ask whether the countertrader either requests or requires participation of its suppliers. If the reply is "Neither; our suppliers are not asked to become involved", then go on to Q3, Part 2. "Neither" defines a countertrader as being involved primarily with Indirect Effects.

If the response is either request or require, then direct involvement takes place.

If the answer is "Request", then the three scenarios for Types 1, 2 and 3 will be shown.

If the answer is Require, then scenarios for Types 4, 5 and 6 will be shown.

(6 scenarios; DESCRIBE BY TYPE NUMBER RATHER THAN NAME, as names might carry judgmental perceptions or connotations.)

*****REQUEST**

1. The Type 1 Supplier works with the countertrading firm from the outset of the countertrade transaction. The supplier may even anticipate the need to countertrade and assist in actively seeking out mutually beneficial opportunities. The Type 1 supplier perceives individual as well as mutual benefit (in the form of additional business from countertraded products) to participation in a customer's reciprocal obligations. This supplier perceives countertrade as necessary in today's global economy. The Type 1 firm is characterized by early and substantial participation in the reciprocal obligations of its customers.
2. The Type 2 Supplier is characterized by a reactive rather than proactive stance with regard to its customer's countertrade requirements. This supplier may participate in its customers' reciprocal obligations, but only after requests from the countertrading customer. While the Type 2 Supplier may perceive benefit to participation in a customer's reciprocal obligations, the benefits barely outweigh the difficulties or additional administrative burden from such transactions.
3. In spite of requests by the countertrading customer for assistance with reciprocal obligations, the Type 3 Supplier declines to participate. This supplier perceives greater detriment or operational difficulty to involvement in reciprocal purchase requirements of customers, than benefit from any additional business that such transactions may bring. For a variety of reasons, this supplier sees international reciprocity as not being in its best interests.

*****REQUIRE**

1. The Type 4 Supplier will participate significantly in the reciprocal obligations of its customers, but it does so only in response to the customer's demands. It is likely to participate to maintain its place as a supplier to the countertrading firm. On balance, countertrade drawbacks outweigh benefits in the perception of the Type 1 Supplier.
2. Type 5 suppliers will resist involvement in customers' reciprocal obligations, but after considerable pressure will make a token effort. For a variety of reasons, the supplier perceives far greater disadvantage than benefit from involvement in its customer's reciprocal obligations.
3. Even though a countertrading firm may require its suppliers to take part in reciprocal obligations, there will be no participation by Type 6 suppliers. For a variety of reasons, they decline to become involved in their customer's reciprocal obligations, even though their position as a supplier to the countertrading firm may be jeopardized.

There are many factors which influence or describe the conditions and boundaries of a buyer/supplier relationship. Some researchers have identified three categories of factors as Inputs, Durability and Consistency. Within each of those are several descriptive items as follows. We are interested in these as they relate to changes in buyer/supplier relationships.

Inputs

1. The goods and their specifications.
2. Terms of Sale, including price and payment terms, quantity discounts and other negotiated elements.
3. Delivery promptness and completeness.
4. Communication.

Durability

5. Exercise of power of buyer over seller.
6. Trust between the buying and selling firms.
7. Formality of communication and transaction.

Consistency

8. Commitment to each other for future business.
9. Expectations of the results/outcomes of the relationship
10. Mutual dependence between the two firms.
11. Other issues?

Please prioritize these and any other factors which may be important.

S-1 S-2 S-3 S-4

As a result of your firm's involvement with reciprocal countertrade obligations, has any of the above factors changed? If so, by how much and in which direction?

- 3 = Large negative change
- 2 = Moderate negative change
- 1 = Slight negative change
- 0 = No change
- +1 = Slight positive change
- +2 = Moderate positive change
- +3 = Large positive change.

FACTOR	IMPACT						
	-3	-2	-1	0	1	2	3
Goods							
Terms							
Delivery							
Communication							
Power							
Trust							
Formality							
Commitment							
Expectations							
Mutual Dependence							
Other							

CONCLUDING CONVERSATION

Overall then, what have been the major purchasing problems resulting from countertrade obligations?

In your opinion, what have been the overall effects of countertrade obligations on relationships with your existing suppliers?

Are there any other factors or issues relating to purchasing, countertrade and key buyer/supplier relationships which we have not covered?

In retrospect, is there anything that might have been done differently to minimize the impact to existing buyer/supplier relationships from countertrade requirements?

I want you to know how much I appreciate your time and your expertise. Without assistance like you have given me today, this sort of research would be impossible.

APPENDIX E
SUPPLIER INTERVIEW GUIDE

NOTE: Supplier interviews were conducted by telephone following a mailing which consisted of the six scenarios from Research Question Three and the factor list and description. Also included was the factor matrix.

Initial Questions involved demographic information about the company, as in the primary firm guide.

Follow-on questions were similar to those for the four countertrading firms.

Suppliers were asked the reasons for their choice of level of involvement in customers' reciprocal obligations. ie; if a firm selects Type 6 (require/decline), why did they decline?

RESEARCH Q3/SUPPLIER

The research interest of these questions is in situations where your firm is a supplier to another company which has a countertrade obligation. Its focuses are twofold:

A. What is your involvement in countertrade obligations of your customers?

B. How has that involvement influenced the relationship between the two firms?

(First, ask whether the countertrader either requests or requires participation of its suppliers.

If the answer is "Request", then the three scenarios for Types 1, 2 and 3 will be shown.

If the answer is Require, then scenarios for Types 4, 5 and 6 will be shown.)

((6 scenarios; DESCRIBE BY TYPE NUMBER RATHER THAN NAME, as names might carry judgmental perceptions or connotations.))

*****REQUEST**

1. The Type 1 Supplier works with the countertrading firm from the outset of the countertrade transaction. The supplier may even anticipate the need to countertrade and assist in actively seeking out mutually beneficial opportunities. The Type 1 supplier perceives individual as well as mutual benefit (in the form of additional business from countertraded products) to participation in a customer's reciprocal obligations. This supplier perceives countertrade as necessary in today's global economy. The Type 1 firm is characterized by early and substantial participation in the reciprocal obligations of its customers.

2. The Type 2 Supplier is characterized by a reactive rather than proactive stance with regard to its customer's countertrade requirements. This supplier may participate in its customers' reciprocal obligations, but only after requests from the countertrading customer. While the Type 2 Supplier may perceive benefit to participation in a customer's reciprocal obligations, the benefits barely outweigh the difficulties or additional administrative burden from such transactions.

3. In spite of requests by the countertrading customer for assistance with reciprocal obligations, the Type 3 Supplier declines to participate. This supplier perceives greater detriment or operational difficulty to involvement in reciprocal purchase requirements of customers, than benefit from any additional business that such transactions may bring. For a variety of reasons, this supplier sees international reciprocity as not being in its best interests.

*****REQUIRE**

1. The Type 1 Supplier will participate significantly in the reciprocal obligations of its customers, but it does so only in response to the customer's demands. It is likely to participate to maintain its place as a supplier to the countertrading firm. On balance, countertrade drawbacks outweigh benefits in the perception of the Type 1 Supplier.
2. Type 2 suppliers will resist involvement in customers' reciprocal obligations, but after considerable pressure will make a token effort. For a variety of reasons, the supplier perceives far greater disadvantage than benefit from involvement in its customer's reciprocal obligations.
3. Even though a countertrading firm may require its suppliers to take part in reciprocal obligations, there will be no participation by Type 3 suppliers. For a variety of reasons, they decline to become involved in their customer's reciprocal obligations, even though their position as a supplier to the countertrading firm may be jeopardized.

There are many factors which influence or describe the conditions and boundaries of a buyer/supplier relationship. Some researchers have identified three categories of factors as Inputs, Durability and Consistency. Within each of those are several descriptive items as follows. We are interested in these as they relate to changes in buyer/supplier relationships.

Inputs

1. The goods and their specifications.
2. Terms of Sale, including price and payment terms, quantity discounts and other negotiated elements.
3. Delivery promptness and completeness.
4. Communication.

Durability

5. Exercise of power of buyer over seller.
6. Trust between the buying and selling firms.
7. Formality of communication and transaction.

Consistency

8. Commitment to each other for future business.
9. Expectations of the results/outcomes of the relationship
10. Mutual dependence between the two firms.
11. Other issues?

Please prioritize these and any other factors which may be important.

S-1 S-2 S-3 S-4

As a result of your firm's involvement with reciprocal countertrade obligations of your customers, has any of the above factors changed? If so, by how much and in which direction?

- 3 = Large negative change
- 2 = Moderate negative change
- 1 = Slight negative change
- 0 = No change
- +1 = Slight positive change
- +2 = Moderate positive change
- +3 = Large positive change.

FACTOR	IMPACT						
	-3	-2	-1	0	1	2	3
Goods							
Terms							
Delivery							
Communication							
Power							
Trust							
Formality							
Commitment							
Expectations							
Mutual Dependence							
Other							

CONCLUDING CONVERSATION

To what degree does your firm attempt to pass on reciprocal obligations to your suppliers?

Overall then, what have been the major problems resulting from customers' countertrade obligations?

In your opinion, what have been the overall effects of countertrade obligations on relationships with your countertrading customers?

Are there any other factors or issues relating to purchasing, countertrade and key buyer/supplier relationships which we have not covered?

In retrospect, is there anything that might have been done differently to minimize the impact to existing buyer/supplier relationships from countertrade requirements?

I want you to know how much I appreciate your time and your expertise. Without assistance like you have given me today, this sort of research would be impossible.

APPENDIX F
FACTOR RESPONSES

In Chapter Three, ten factors were identified which characterize components of a buyer-supplier relationship. The following comments were made by suppliers when discussing impacts of the ten factors. Not every supplier commented on each factor; some suppliers had several comments on specific factors which differed with circumstances. These comments are representative of the opinions expressed.

Goods: The goods being sold and their specifications.

"There may be changes in the goods because of local content requirements or because of subcontractors we are required to use."

"We try not to change specifications, even if local content is required."

"We won't let the goods change, regardless of the type of transaction."

Terms: Terms of sale, including price and payment terms, quantity discounts and other negotiated elements.

"We build cost of countertrade into our price, although competition may inhibit our ability to do so."

"Terms may be extended, which impacts cash flow and expands inventories required for in-country assembly."

For counterpurchase types of countertrade, "We may ask for advance or progress payments if the sale is to an area where there is no American Embassy."

"Payment terms depend on the country. We may require letters of credit for some countries."

"We try to charge back to our customer any premiums we pay to countertrade suppliers. The customer then charges back to the country."

Delivery: Delivery promptness and completeness.

"Extra lead time may be required for increased travel and communication."

"Because of local content requirements, supply chains may be lengthened, causing delays. There also may be quality problems, which also cause delays."

Communications: Quality and volume of communication between buyer and supplier.

"Customers often have two separate organizations; the marketing organization which is concerned with making the sale and a countertrade organization which manages all reciprocal obligations. Frequently, these don't communicate well internally, so the supplier performs the communication function between the two customer organizations."

"There is usually a separate countertrade organization, so there is an additional line of communication established for these transactions. Any additional communication is good."

"There is more communication; therefore there is better knowledge of where both buyer and supplier are at with regard to the obligation they have in a country."

"In situations where suppliers are required rather than requested to participate, communications are less frequent and only occur via formal channels."

"The quality of communications depends on how well you are doing in meeting your reciprocal obligations."

"As a result of these transactions, we are now dealing at a higher level within the customer's firm as partners."

"There is more and better communication from these transactions."

"There is more communication between the two firms and more planning. Communication extends beyond the present transaction to possible future activity"

Power: The exercise of power of buyer over seller.

"Buyers often try to exercise their power. For example, at supplier meetings buyers seat competitors all together."

"If we are a sole source supplier, we have the power."

"Buyers - especially large multinational firms - wield enormous power."

"The supplier now has more power than before because of a proactive approach."

"There is use of power by buyers, but a limited worldwide number of suppliers tends to balance power."

"There are only a few competitors, therefore little power."

Trust: Trust between the buying and supplying firms.

"Changes in trust could be good or bad depending on reciprocal performance, If a prime contractor does poorly in fulfilling obligations, this undermines the relationship from the supplier's view. If the supplier does poorly, then the relationship deteriorates in the buyer's view. If both do well, then it helps the relationship."

Formality: Formality of communication and transaction.

"These transactions are often less contractual and tend more toward addressing the (country) customer's needs."

"In forced participation situations, there is more documentation required."

"Formality follows trust. If trust expands, then the relationship becomes less formal. If trust declines, formality increases."

"Formality increases as the relationship decreases. You begin going by the letter of the agreement - or insisting that everything be in writing."

"There is less formality to a proactive relationship, therefore more flexibility."

Commitment: Commitment between buyer and supplier to each other for future business.

"We now have 'life of product' commitments with a reduced supply base that includes willingness and ability to help customers with reciprocal obligations."

"We are now signing up with customers for long term, multi-country joint sales efforts."

"We are now agreeing with customers ahead of time that whatever the customer has to agree to in order to make the sale, we will agree to the same thing."

"Unfortunately, market conditions and competition prevent much commitment."

"Depending on the product and the market, we may not even get a 'thanks', much less a reward for helping with their obligation."

Expectations: Expectations of the results/outcomes of the relationship.

"Good outcomes from one transaction prompt better expectations."

Mutual Dependence: Mutual dependence between the two firms as a result of involvement in countertrade transactions.

"Commitment, expectations and mutual dependence all go together toward development of strategic supplier relationships."

"We now go as a supplier member of a team when the countertrading firm visits a prospective customer to make its pitch."

"Often there are three separate organizations within a customer's firm; marketing, countertrade and purchasing. These often do not communicate well between themselves. There is often a 'disconnect' where our good efforts to support their countertrade

requirements are never passed along to purchasing, so we don't get recognition for our efforts when the next order comes along."

"Good relationships equal mutual dependence. We are trying to build more of these."

APPENDIX G

CODING SCHEME

Coding			Definition
Initial	Secondary	Tertiary	
Q1			Relates to Research Question One
	Q1-IC		Question One Subsection Internal Consumption
	Q1-SI		Question One Subsection Supplier Involvement
	Q1-R		Question One Subsection Resale
Q2			Relates to Research Question Two
	Q2-W		Question Two Option Withdraw
	Q2-Wf1		Question Two Option Withdraw Factor One (New order volume)
	Q2-Wf2		Factor Two (Percent of orders under long term contract)
	Q2-Wf3		Factor Three (Contract volume commitments)
	Q2-Wf4		Factor Four (Disrupt existing supplier relationships)
	Q2-Wf5		Factor Five (Need for Design secrecy)
	Q2-Wf6		Factor Six (Product life cycle stage)
	Q2-Wf7		Factor Seven (CT country economic development)
	Q2-Wf8		Factor Eight (CT agreement form)
	Q2-Wf9		Factor Nine (Type of CT sale)
	Q2-Wf10		Factor Ten (Order backlog size)
	Q2-Wf11		Factor Eleven (Degree of unionization)

Coding			Definition
Initial	Secondary	Tertiary	
	Q2-D		Question Two Option Divert
		Q2-Df1 - 11	Factors as above
	Q2-0		Question Two Option Outsource
		Q2-Of1 - 11	Factors as above
Q3			Relates to Research
	Q3-1		Question Three
			Question Three, Supplier
			Type 1 (Proactive Volunteer)
	Q3-2		Question Three, Supplier
			Type 2 (Partial Participant)
	Q3-3		Question Three, Supplier
			Type 3 (Decliner)
	Q3-4		Question Three, Supplier
			Type 4 (Active Participant)
	Q3-5		Question Three, Supplier
			Type 5 (Token Participant)
	Q3-6		Question Three, Supplier
			Type 6 (Refuser)
		Q3-1,2 or 3 -	Factor Code for any of the ten
			factors as follows:
			Goods
			Terms
			Del(ivery)
			Comm(unication)
			Power
			Trust
			Form(ality)
			Commit(ment)
			Expect(ations)
			Dep(endance - mutual)

In addition, every unusual item was given its own unique code. Each time unusual items were encountered, the list was consulted to determine commonality with other unusual items. Unusual items which were either unrelated or were only peripherally related to the research questions most often resulted in the development of managerial implications

or possible directions for future research. Examples include the following.

- * The discovery that personnel cutbacks from downsizing often hamper a firm's ability to adopt a proactive approach to countertrade obligations.
- * Organizational structure issues also, at times, make difficult the coordination of countertrade obligations with the three affected departments - purchasing, marketing and the countertrade organization.
- * The identification of the importance of purchased content to product value when considering outsourcing.
- * The discovery that different divisions of the same firm may have different policies and practices toward countertrade and the management of its obligations.

APPENDIX H

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APPENDIX I
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