

DETERMINANTS OF THE OUTSTANDING VOLUME
OF DOLLAR BANKERS' ACCEPTANCES

By

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Abstract of Dissertation Presented to the Graduate Council
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The previous literature on the dollar bankers' acceptance market provides a comprehensive description of the market and proposes three determinants of the volume of bankers' acceptances outstanding which are: (1) volume of international trade, (2) cost differentials in the financing of trade between dollar bankers' acceptances and alternative sources of financing, and (3) credit availability in the United States. The previous literature does not establish these factors as being statistically significant to the volume of acceptances outstanding. The previous literature does not address itself to the possible effects of expectations of changes in exchange rates on the volume of acceptance financing since the previous literature predates the recent movement away from fixed exchange rates in the international monetary system.

In an attempt to supplement the bankers' acceptance literature on these two particular points, the goal of this dissertation was to test the statistical significance of the previously proposed determinants, as

well as expectations on changes in exchange rates, on the volume of acceptances outstanding. Graphical analysis of indicators of international trade, cost differentials, credit availability, and the volume of dollar bankers' acceptances is given as a preliminary test of the significance of the determinants proposed in the previous literature. From this analysis, a general direct relationship is observed in each major geographic sector of this market between the volume of international trade and the corresponding volume of dollar bankers' acceptance outstanding. Further, an inverse relationship is observed between credit availability in the United States and the volume of acceptances outstanding (i.e., as credit availability lessens, the volume of acceptances increases). The graphical analysis failed to show a consistent relationship between acceptance volume and the cost differentials in the financing of trade.

Multivariate regression analysis was used to test further the significance of the previously proposed determinants and to test for the significance of expectations of changes in exchange rates. For each major geographic sector of the dollar bankers' acceptance market, measures of international trade, cost differentials, credit availability in the United States, and expectations of changes in exchange rates were used as independent variables with the dependent variable being the corresponding sector's volume of acceptances outstanding. The regression results confirmed the positive relationship previously observed between international trade and the volume of acceptances outstanding. The regression results indicated that as expectations on the depreciation of the dollar increased, the volume of dollar bankers' acceptances outstanding increases.

The regression analysis did not find the indicators of cost differentials and credit availability in the United States to be significant determinants of acceptance volume. The lack of significance could be due to the deficiencies of the available data used in the regressions and is not a refutation of these factors being determinants of the volume of bankers' acceptances outstanding.

CHAPTER I
INTRODUCTION

Brief History of the Market

The United States dollar bankers' acceptance market is a segment of the money market and centered in New York.¹ An acceptance market did not exist in the United States before 1914 because national banks and most state banks were prohibited from engaging in the creation of bankers' acceptances.²

In the early part of the twentieth century there was a movement in United States financial circles to increase the liquidity of commercial banks. Proponents of the establishment of an acceptance market maintained that a dollar acceptance market would increase the liquidity of the commercial banking system since acceptance instruments would be excellent secondary reserves for commercial banks.³ One result of the

¹Hereafter the United States dollar bankers' acceptance market will be referred to as the bankers' acceptance market.

²Federal Reserve Bank of San Francisco, "The Role of Bankers' Acceptance Financing in International Trade and Finance," Monthly Review (San Francisco: Federal Reserve Bank of San Francisco, July, 1955), p. 84.

³Lawrence M. Jacobs, "Bank Acceptances," Monetary Commission Documents (Washington, D.C.: United States Senate, 1910, number 569, p. 10).

movement for more liquidity for the banking system was the Federal Reserve being authorized to establish an acceptance market in the United States.⁴

The Federal Reserve from its inception to 1929 spurred the growth of the acceptance market by absorbing large numbers of acceptances.⁵ In order to encourage the growth of the market, the Federal Reserve System posted discount rates for acceptances below the discount rates offered by acceptance dealers. This resulted in the Federal Reserve System purchasing a large volume of acceptances and directly supplying a large amount of funds to the market. The volume of dollar bankers' acceptances outstanding grew at a rapid rate from 1915 to 1929.⁶ By the end of 1929 the volume outstanding was 1,732 million dollars, an impressive amount for a market which had been nonexistent before 1915.⁷

Acceptance financing was used principally for international trade (1,348 million dollars in December 1929), especially trade involving the United States (907 million dollars), and domestic trade and storage (308 million dollars).⁸

⁴Federal Reserve Act, Section 13, paragraph 6, 1913.

⁵Joy S. Joines, "Bankers' Acceptances," Instruments of the Money Market (Richmond: Federal Reserve Bank of Richmond, February, 1968), p. 69.

⁶Board of Governors of the Federal Reserve System, "Bankers' Acceptances," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, December, 1916), p. 717.

⁷Ibid., October, 1930, p. 621.

⁸Robert Cooper, "Bankers' Acceptances," Monthly Review (New York: Federal Reserve Bank of New York, June, 1968), p. 130.

The use of acceptance financing declined drastically during the 1930s. In December 1939 the volume of acceptances outstanding was 239 million dollars, a decline of 86 per cent from the December 1929 volume of 1,732 million dollars.⁹ The reduction resulted from the decline in business activity during the 1930s, especially to the decrease in the level of international trade, and the growing government interference in, and regulation of the exchange markets.

The volume of financing through the acceptance market did not recover substantially until well into the 1950s.¹⁰ With the restoration of convertibility of currencies, the decline in government financing of international trade, and the increase in international trade, the volume of bankers' acceptances outstanding increased substantially.¹¹ From a volume of 642 million dollars at the end of 1955, the amount outstanding increased, reaching a peak of 8,432 million dollars at the end of 1973.¹²

The largest increases in volume have been for financing of international trade for the residents of the United States and Japan.¹³ In

⁹Board of Governors of the Federal Reserve System, "Bankers' Acceptances," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, December, 1940), p. 130.

¹⁰Joines, "Bankers' Acceptances," p. 70.

¹¹Federal Reserve Bank of San Francisco, "Role of Bankers' Acceptance Financing in International Trade and Finance," p. 84.

¹²New York Federal Reserve Bank, Monthly Acceptance Survey (New York: Federal Reserve Bank of New York, 1955-1973).

¹³Department of the Treasury, "Acceptances Created for the Accounts of Foreigners," United States Treasury Report (Washington, D.C.: Department of the Treasury, March, 1955 and February, 1974).

January 1955, the volume of dollar acceptance financing being used by United States residents was 583 million dollars, but in December 1973, it had reached 4,595 million dollars. In January 1955 only four million dollars of the outstanding volume of dollar acceptances had been created for Japanese residents. In December 1973, the volume of acceptances outstanding created for Japanese residents was 1,802 million dollars. During the same time period acceptances used to finance United States domestic trade and to create dollar exchange actually declined.¹⁴ Of the 8,493 million dollars of acceptances outstanding at the end of 1973, only 295 million dollars were created to finance domestic trade (as compared to the December 1955 level of 308 million dollars) and 52 million dollars were for dollar exchange (as compared to the December 1955 volume of 76 million dollars).

Literature on the Bankers'
Acceptance Market

Market-related research has paralleled the trends in the volume of acceptances outstanding with most of the work being done in the period 1910 to 1930 and since 1955.

1910 - 1930

Lawrence Jacobs in his 1910 brief to the National Monetary Commission outlined the reasons for the establishment of a dollar bankers' acceptance market in the United States.¹⁵ Jacobs maintained

¹⁴Ibid., February, 1956 and February, 1974.

¹⁵Jacobs, "Bank Acceptances," pp. 1-20.

that two major benefits would result from such a market. The first was increased liquidity of commercial banks since acceptances are more negotiable and marketable than commercial bank customer loans.¹⁶ The second would be an increase in financial services available in the United States, especially in New York. It was hoped that the dollar acceptance market would become a major competitor to the sterling acceptance market. Since the acceptance market was established, it can be assumed that Jacob's brief was influential.

In the early part of the 1920s most commercial banks were unfamiliar with the use of acceptance financing. A reference guide was needed by the commercial banks to provide information on the nature of acceptance financing, terminology, governmental regulations, and the mechanics of acceptance creation. This need was fulfilled by Park Mathewson's Acceptances: Trade and Bankers' published in 1921.¹⁷

The only other work of major importance to appear in the 1920s was Jerone Thrall's "The American Discount Market."¹⁸ Thrall detailed the growth of the acceptance market up to 1925. He also posed two main questions that were to occupy the literature on this market for the remainder of the 1920s. The first was: Why had not bankers' acceptances become a major secondary reserve instrument as envisioned in the

¹⁶This will be expanded upon and substantiated in Chapter II, page 44.

¹⁷Park Mathewson, Acceptances: Trade and Bankers' (New York: Appleton Company, 1921), pp. 1-183.

¹⁸Jerone Thrall, "The American Discount Market," Bankers' Magazine (New York: The Bankers' Publishing Company, April, 1925), pp. 621-625.

founding of the Federal Reserve System? Even at this early date (1925), it was apparent that acceptances were not and would not be used widely enough to become a major secondary reserve asset for the banking system. The second question was: Why had not the market expanded beyond the confines of New York? The acceptance market in 1925, as today, was centered in New York and seemed unlikely to disperse itself evenly across the country.

The literature of this period was descriptive in nature and dealt with matters connected with establishing the market. Little, if any, attention was directed to describing cause and effect relationships within the market. Due to the decline in acceptance financing in the 1930s and the stagnation of the acceptance market that lasted until the mid-1950s, little was written on the subject between 1930 and 1955.

1955-1974

The rapid growth in the volume of bankers' acceptances outstanding in 1954 (from 574 million dollars at the end of December 1953 to 873 million dollars at the end of December 1954, an increase of 52 per cent) triggered a renewed interest in the market.¹⁹ Two major articles were published in 1955. The first of these, entitled "Bankers' Acceptance Financing in the United States," made two significant contributions.²⁰ The first was to provide general and basic information about a mode of financing which had been infrequently used for twenty-five

¹⁹New York Federal Reserve Bank, Monthly Acceptance Survey (New York: Federal Reserve Bank of New York, January and December, 1954), p. 1.

²⁰Robert Solomon and Frank Tamagna, "Bankers' Acceptance Financing in the United States," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, May, 1955), pp. 482-494.

years. It thus served to familiarize the financial and business communities with a growing and promising method of financing.

The second was to present basic cause and effect relationships which the authors thought existed. They stated that the volume of acceptances outstanding was a function of at least three forces. Since the reason for borrowing through the use of acceptances was to finance trade transactions, they hypothesized that as the level of trade increased so would the volume of bankers' acceptances outstanding. They further stated that since a major portion of bankers' acceptances outstanding was used to finance international trade, the total volume outstanding should vary directly with the variation in international transactions.

A second stated determinant of the volume of acceptances outstanding was the relative cost of financing trade. As bankers' acceptances became a relatively less expensive source of funds, then the volume of bankers' acceptances outstanding should increase. The third, and believed by the authors to be the least significant determinant, was credit availability. As credit availability decreased, commercial banks would find it advantageous to create more bankers' acceptances since these instruments are more readily marketable than are regular customer loans and provide a vehicle by which banks can service their customers' needs without committing the funds of the bank.

The authors also reviewed the mode of operation of acceptance dealers and investors. They found that the most important group of acceptance investors was foreign banks (both central and commercial), but they failed to mention the importance of the commercial banks

which create, in conjunction with borrowers, the acceptance instruments. This latter group of banks is known as 'accepting' banks or 'creating' banks, and their importance as investors can be seen in Table 1.

A striking characteristic of this article, as with much of the financial literature of the mid and early 1950s, is the lack of statistical substantiation of various cause and effect relationships. The cause and effect relationships which the authors discuss have a logical base in theory, but they made no attempt to ascertain how strong these relationships were in the real world.

The second article to appear in 1955 was entitled "The Role of Bankers' Acceptances in International Trade and Finance."²¹ Much of the information contained in "Bankers' Acceptances Financing in the United States" was restated. But it did make three significant contributions.

First was a review of the history of the market. Second was a description of the then recent changes in the relationship of the Federal Reserve to this market. Prior to 1955 the Federal Reserve had purchased acceptance instruments at posted discount rates. In 1955 the Federal Reserve began to play a more active role in the market than it had in recent years and began to make its purchases at the acceptance dealers' discount rates.²² The Federal Reserve

²¹Federal Reserve Bank of San Francisco, "The Role of Bankers' Acceptance Financing in International Trade and Finance," pp. 84-90.

²²Ibid., p. 89.

Table 1
Volume of Dollar Bankers' Acceptances Held by Various Types of Investors
Selected Years, 1954-1974
(In Millions of Dollars)

	1954	1955	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
<u>Accepting Banks (Total)</u>	289	175	663	1272	1153	1291	1671	1223	1198	1906	1544	1567	2694	3480	2706	2566
Own Bills	203	126	489	896	865	1031	1301	1094	983	1447	1344	1318	1960	2689	2006	2129
Bills of Other Accepting Banks	86	49	173	376	288	260	370	129	215	459	200	249	734	791	700	430
<u>Federal Reserve System</u>																
(Total)	19	61	304	177	196	254	216	331	384	320	167	210	307	515	285	270
Own Account	0	28	74	51	110	162	94	187	193	164	58	64	57	261	106	77
Held for Foreign Correspondents	19	33	230	126	86	97	122	144	191	156	109	146	250	254	179	193
<u>Bankers' Acceptance</u>																
<u>Dealers' Inventory*</u>	15	11	76	40	133	293	212	412	307	512	319	349	468	524	817	726
<u>Other Investors (Mainly</u>																
<u>Foreign Investors)</u>	550	395	985	1194	1168	1052	1286	1426	1715	1577	2398	3324	3588	3370	3090	4931
<u>TOTAL</u>	873	642	2027	2683	2650	2890	3385	3392	3604	4315	4428	5450	7057	7880	6898	8493

NOTE: Values are for end of December.

* "Bankers' Acceptance Dealers' Inventory" obtained from correspondence with Federal Reserve Bank of New York.

Source: "Commercial and Finance Company Paper and Bankers' Acceptances Outstanding," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, compiled from February issues for the years 1955, 1956, 1961-1974).

wanted this market to increase in volume because it believed that this market could make a contribution to the short-term flow of international funds and the restoration of convertibility of currencies.

The last contribution of this article was the citation of additional factors affecting the behavior of borrowers, accepting banks, and investors. Borrowers were said to view acceptance financing as a more complex and less flexible source of financing as compared to direct loans. Commercial banks were depicted as considering acceptance financing as a more complex method of providing for their customers' needs. Investors were pictured as having difficulties finding desirable acceptance investments due to their odd denominations.²³

Following the two 1955 articles, no significant research was done on the market until 1960 and 1961. Significant growth, however, occurred in the acceptance market between 1955 and 1961. The first article to discuss this growth was entitled "Rebound in the Use of Bankers' Acceptances."²⁴ During 1960 the volume of acceptances outstanding increased at a very rapid rate. At the end of December 1959 the volume of acceptances outstanding was 1,151 million dollars; at the end of December 1960 it had reached 2,027 million dollars, an increase of 76 per cent.²⁵ Three factors were cited as causing the growth: (1) in-

²³Bankers' acceptances are created in amounts equal to the costs of the transactions being financed which accounts for the odd denominations in this market.

²⁴Federal Reserve Bank of Cleveland, "Rebound in the Use of Bankers' Acceptances," Monthly Business Review (Cleveland: Federal Reserve Bank of Cleveland, January, 1961), pp. 5-10.

²⁵Federal Reserve Bank of New York, Monthly Acceptance Survey, December, 1959 and December, 1960, p.1.

creases in the level of international trade, (2) an increase in the availability for and use of acceptance financing by non-United States importers and exporters, and (3) the relative costs of financing trade between dollar acceptances and alternative sources of financing.

There was increased foreign participation in this market as demonstrated in Table 2. Of significance was the marked increase in acceptances created for foreigners, especially residents of Japan, during the time period 1955-1961. The period 1960 through 1961 was a period when the cost of acceptance financing became more competitive with other major sources of funds.²⁶ The more competitive position of the acceptance market provided an incentive for an increased volume of acceptances outstanding.²⁷ The major role of creating banks as investors in acceptances was also stressed.

In 1961, a second and more comprehensive article was published by Robert L. Cooper entitled "Bankers' Acceptances."²⁸ Its main contribution was a restatement and expansion of the determinants of the volume of acceptances outstanding. Special attention was given to the relative costs of financing trade and the role of monetary policy.

Cooper also discussed the reason why dollar bankers' acceptances

²⁶This will be expanded upon in Chapter III, p. 60.

²⁷Federal Reserve Bank of Cleveland, "Rebound in the Use of Bankers' Acceptances," p. 9.

²⁸Federal Reserve Bank of New York, "Bankers' Acceptances," Monthly Review (New York: Federal Reserve Bank of New York, June, 1961), pp. 94-100.

Table 2
 Volume of Dollar Bankers' Acceptances Outstanding Created for Residents of
 Various Countries and Regions
 Selected Years, 1955-1973
 (In Millions of Dollars)

	1955	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
<u>Country or Region</u>															
United States	348	835	894	793	697	785	829	1161	1301	1574	2529	3092	3619	3683	4595
Japan	28	555	999	945	1400	1607	1572	1306	1829	1720	1592	2140	2117	1360	1802
Developed Nations Excluding United States and Japan	118	129	230	273	212	246	308	465	333	341	399	515	707	554	715
Latin America	141	469	498	548	458	609	530	633	637	599	594	861	815	648	799
Less-Developed Nations Excluding Latin America	7	39	62	91	123	137	153	138	216	194	236	449	631	653	582
TOTAL OUTSTANDING VOLUME	642	2027	2683	2650	2890	3385	3392	3604	4315	4428	5450	7057	7889	6898	8493

NOTE: Values are for end of December.

Source: "Commercial and Finance Company Paper and Bankers' Acceptances Outstanding," Federal Reserve Bulletin and "Acceptances Created for the Accounts of Foreigners," United States Treasury Report (Washington, D.C.: Department of the Treasury, Feb., 1956 and 1961-1974).

were not more generally used to finance European trade and trade within the United States. The former was due to relative inexpensive and readily available alternative sources of financing in the European financial market. In the case of United States trade, it was attributed to the widespread use of trade credit. The article also gave a list of specific kinds of goods that were most frequently financed through the use of acceptances. The last contribution of this article was a statement of the major geographic sectors of the bankers' acceptance market. The regional breakdown given in Cooper's article is the basis of Table 2. This geographic breakdown will be continued as an integral part of this study.

The 1961 articles have the same deficiency as the articles that appeared in 1955. Cause and effect relationships are stated, but little support is given to establish if the hypothesized relationships are statistically significant.

In response to this defect, R. Eldridge in his 1966 dissertation tried to establish statistically significant causal relationships for this market.²⁹ After documenting the 1955-1962 resurgence of the dollar bankers' acceptance market, bivariate linear regression analysis was used to regress the volume of bankers' acceptances outstanding for the years 1955 through 1962 against the volume of imports and exports of various geographic regions. From the resulting regression analysis, and his accompanying graphs of the volume of acceptances and international trade, he concluded that as the volume of

²⁹R. Eldridge, The Revival of Bankers' Acceptance Financing in the United States (New York: Columbia University, 1966), pp. 1-252.

international trade increased so did the volume of acceptances outstanding. His analysis is not conclusive since it contains several defects, among which are non-use of multivariate analysis (i.e., Eldridge ignored in these regressions independent variables other than the volume of trade) and the problem of autocorrelation is not accounted for.

His dissertation presented graphs for 1955 through 1962 of acceptance volume and cost differentials between dollar bankers' acceptances and likely financing alternatives. From these Eldridge concluded that acceptance volume increased as acceptances became a less expensive source of funds. This analysis ignored variables other than cost differentials and did not establish these relationships as being statistically significant; therefore, the analysis is not conclusive. Eldridge did cite various institutional factors that could possibly explain part of the rapid growth of acceptance volume in the 1955-1962 period.

Since Eldridge's work, no other major research projects have been completed on this market. The literature to date has provided us with a comprehensive description of the market and its components and with a theoretical explanation of the determinants of the volume of bankers' acceptances outstanding at a given time. These determinants have not been fully verified with data from the real world.

Goals of the Dissertation

This study will attempt to verify statistically for the period 1955-1973 the effect of international trade, relative costs of financing trade, and credit availability on the volume of bankers' acceptances

outstanding. Additionally an attempt will be made to verify statistically for the same time period the effect of expectations of changes in exchange rates on the volume of dollar bankers' acceptances outstanding.

Synopsis of Dissertation

A brief description of the bankers' acceptance market and of the participants in the market will be presented in Chapter II. In the third chapter the hypothesis will be developed. Chapter IV will describe the data series used to represent the variables in the hypothesis and the structure of the model. We will present our statistical analysis and the study's findings in Chapter V. Chapter VI is a summary of our work.

CHAPTER II
THE UNITED STATES DOLLAR BANKERS'
ACCEPTANCE MARKET

The bankers' acceptance market is a financial market which performs two basic functions. The first is to channel funds from lenders to users. The second is to serve as a part of the larger mechanism for allocating funds between alternative uses and users. The financial instrument through which these functions are performed is the dollar bankers' acceptance.

Definition

Bankers' acceptances are a type of bill of exchange. They are considered of excellent quality and are readily marketable.¹ They usually arise in connection with commercial transactions where a buyer of goods gives as payment for the goods the acceptance instrument.² The four important items specified in an acceptance are the amount to be paid, the date of payment, to whom payment is to be made, and who is to make the payment.³

¹Solomon and Tamagna, "Bankers' Acceptance Financing in the United States," p. 482.

²Joines, "Bankers' Acceptances," p. 67.

³For a more extensive coverage of the mechanics of a bankers' acceptance, consult Wilbert Ward and H. Harfield, Bank Credits and Acceptances (4th ed.; New York: Toronto Press Co., 1958).

Bankers' acceptances are time drafts. The time between the date of origination and the date of payment enables bankers' acceptances to be used for extensions of credit. In the majority of instances the longest maturity permitted is 180 days.⁴

Bankers' acceptances are negotiable instruments with the buyer of the instrument having the rights of a "holder in due course." A small number of the largest commercial banks in the United States are responsible for the payment of a large portion of bankers' acceptances. Since these banks have excellent credit reputations and since bankers' acceptances are unqualified obligations of the bank on which they are drawn, the majority of bankers' acceptances are regarded as second only to United States Treasury Bills in quality and enjoy a high degree of marketability.⁵

Origination

A bankers' acceptance involves three parties: the drawer (the one who draws the draft); the drawee (the one on whom the draft is drawn); and, the payee (the one to whom payment is made). The creation of a bankers' acceptance usually begins when a purchaser of merchandise applies to a commercial bank for an extension of credit in the form of a bankers' acceptance. If his application is approved, a letter of

⁴Federal Reserve Act, 12 U.S.C., Sec. 13, Para. 7 and 12, last revision, August 31, 1946, Board of Governors of the Federal Reserve System.

⁵Cooper, "Bankers' Acceptances," p. 131.

credit is issued in favor of the buyer of the goods.⁶

The letter of credit is sent to the seller of the goods. It specifies the amount of credit authorized, the purpose of the credit, and the documents required to accompany the drafts to be created. It also authorizes the seller of the goods to draw a draft on the bank thereby making the commercial bank the drawee of the draft.

The next step in the creation of a bankers' acceptance is for the seller of the goods to draw a draft on the commercial bank issuing the letter of credit with the payee being the seller of the goods. The seller then ships the merchandise under a negotiable bill of lading. He attaches the necessary shipping documents to the draft and usually sells the draft to his commercial bank at a discount from its maturity value. The seller's bank will then forward the draft and attached documents to the drawee.

The drawee upon receipt of the draft and attached documents will ascertain if the draft and documents are consistent with the letter of credit. If they are, the shipping documents are released to the buyer of the goods in exchange for his signature on a trust receipt for the goods. The trust receipt gives the drawee bank a lien on the goods. The buyer of the goods will also be required to deposit with the

⁶For an expanded treatment of the origination process, consult Joines, "Bankers' Acceptances," p. 68; Cooper, "Bankers' Acceptances," pp. 127-128; Federal Reserve Bank of San Francisco, "The Role of Bankers' Acceptance Financing in International Trade and Finance," pp. 85-86; Solomon and Tamagna, "Bankers' Acceptance Financing in the United States," pp. 485-486; and, Federal Reserve Bank of New York, "Bankers' Acceptances," p. 94.

drawee bank sufficient funds to cover payment of the draft or drafts on or slightly before the maturity date.

The drawee will, if it approves the terms of the draft and the attached documents, acknowledge its unconditional obligation to pay the draft when due by "accepting" the draft. Acceptance of the draft is formally acknowledged by the word "accepted" written on the instrument and the signature of an officer of the drawee bank. "Acceptance" is the distinctive characteristic of the banker's acceptance which sets it apart from other time drafts. It is the crucial factor that makes bankers' acceptances highly marketable money market instruments. Upon "acceptance," the instrument is returned to the legal owner who may either retain or sell the instrument. Normally, the drawee bank will have been requested by the owner of the instrument to purchase it at the time of acceptance. If so requested, the accepting or drawee bank will routinely purchase the instrument at the discount rate quoted by dealers in bankers' acceptances.⁷

Major Participants in the Market

There are four groups of participants in this market: borrowers, creating banks, dealers, and investors.

Borrowers

The creation of any dollar bankers' acceptance is primarily the result of the interaction between two major participants:

⁷Arthur Bardenhagen, Expanding the Use of Bankers' Acceptances (New York: Irving Trust Company, 1965), p. 24.

the borrower and a commercial bank. The acceptance borrower obtains an extension of credit since he receives goods prior to the time he provides the payment of the draft to the bank. The funds are loaned to the borrower by any party who holds the banker's acceptance. Who extends the funds to the borrower is immaterial to the borrower. His only requirement for repayment of the instrument is to cover the amount of the acceptance at the creating bank on or slightly before the maturity date.

In this study acceptance borrowers are classified according to their residence in one of the following geographic regions: United States, Japan, Latin America, developed nations (excluding United States and Japan), and less-developed nations (excluding Latin America).⁸ The United States and Japan are separate regions owing to the fact that during the time period of our study residents of these regions have been the major borrowers in the dollar bankers' acceptance market. Between 1955 and 1973, the percentage of the total volume of bankers' acceptances outstanding created for residents of the United States ranged between 23 and 54 per cent, as shown in Table 3. During the same time frame, the percentage created for residents of Japan ranged from 21 to 48 per cent. Furthermore, the volume of acceptances created for Japanese residents increased from 28 million dollars at the end of December 1955 to 1,802 million dollars at the end of December 1973.⁹

⁸Cooper, "Bankers' Acceptances," p. 130.

⁹United States Treasury Department, "Acceptances Created for the Accounts of Foreigners," February, 1956, p. 52 and February, 1974, p. 96.

Table 3
 Percentage of Dollar Bankers' Acceptances Outstanding Created for
 Residents of Various Countries and Regions
 Selected Years, 1955-1973

	1955	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
<u>Country or Region</u>															
United States	54	41	33	30	24	23	24	32	30	36	46	44	46	53	54
Japan	4	27	37	36	48	47	46	36	42	39	29	30	27	20	21
Developed Nations Excluding United States and Japan	18	6	9	10	7	7	9	10	8	8	7	7	9	8	8
Latin America	22	23	19	21	16	18	16	18	15	14	13	12	10	9	9
Less-Developed Nations Excluding Latin America	1	2	2	3	4	4	5	4	5	4	4	6	8	9	7
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

NOTE: Values are for end of December. Because of rounding, figures do not necessarily add to totals.

SOURCE: "Commercial and Finance Company Paper and Bankers' Acceptances Outstanding," Federal Reserve Bulletin and "Acceptances Created for the Accounts of Foreigners," United States Treasury Report.

In addition to the United States and Japan, residents in the developed nations of the world, exclusive of the communist countries, are significant borrowers in the dollar acceptance market. The percentage of outstanding volume written for residents of this group ranged from 6 to 18 per cent over the period 1955-1973 but mostly fluctuated between 7 and 10 per cent. The countries included in this group are those of Western Europe, Australia, New Zealand, South Africa, and Canada. This region is of special significance in our study for two reasons: residents of this region have long used acceptance financing in the form of sterling acceptances, and many of these countries have well-developed money markets.

The less-developed countries of the world constitute the other two groups of borrowers. The countries of Latin America have close economic ties with the United States and their residents are major borrowers in this market. The percentage of acceptances outstanding written for this group has ranged between 9 and 23 per cent, but has tended to decrease in recent years. The less-developed countries of the rest of the world comprise our last group of borrowers. While the percentage of acceptances outstanding written for this group has been small, the dollar amount has increased substantially: from 7 million dollars at the end of December 1955 to 582 million at the end of 1973.

¹⁰Federal Reserve Bank of Cleveland, "Rebound in the Use of Bankers' Acceptances," p.8.

¹¹United States Treasury Department, "Acceptances Created for the Accounts of Foreigners," February, 1956, p.52, and February, 1974, p. 96.

The Creating Banks

The major link between a borrower in the dollar bankers' acceptance market and the suppliers of funds is the creating bank. In the description of the creation of a dollar banker's acceptance, two factors relating to the creating bank's role were omitted. These are the regulations imposed on the creating bank and the composition of the cost of borrowing through acceptances.

Federal Reserve member banks originate the vast majority of acceptances measured either by number or by dollar volume. These banks must comply with the provisions of the Federal Reserve Act which places three types of restrictions on acceptances written by member banks. These are (1) an upper limit on the amount of acceptances that a creating bank can write for all their customers, (2) a maximum limit on the amount of acceptances that a creating bank can write for a particular customer, and (3) restrictions on the maturity of the instruments.¹²

A member bank can create acceptances in an amount up to 50 per cent of its unimpaired capital and surplus for the purpose of storage or shipment of goods, and an additional amount not to exceed 50 per cent of its unimpaired capital and surplus for the purpose of creating dollar exchange.

The upper limit to the amount of acceptances that can be created for any one customer is 10 per cent of the bank's unimpaired capital

¹²Federal Reserve Act, U.S.C. 12, Sec. 13, para. 7 and 12, last revision August 31, 1946, Board of Governors of the Federal Reserve System.

and surplus. In this respect acceptances are similar to commercial bank customer loans.

The longest maturity of any acceptance created for the purpose of financing the shipment and/or storage of goods is 180 days, or approximately six months. The maturity of bankers' acceptances used to create dollar exchange is limited to 90 days, or roughly three months.

As can be seen from this brief summary of acceptance regulations, the amount of acceptances created for a single borrower is not any more restricted than for short-term commercial bank loans. The limits on acceptances maturities and the total acceptances which a bank may create are more restricted than the limits on commercial bank loans. It can be assumed that these regulations have not restricted the volume of acceptances created since little pressure has been brought by the creating banks to have the limits changed.

The cost of acceptance borrowing is in two parts. The creating bank charges a service fee which for "prime rate" borrowers is 1/8 per cent of the face amount of the acceptance for each month that the acceptance is outstanding.¹³ This fee compensates the commercial bank for clerical costs and the risk it bears by placing itself unconditionally liable for payment of the draft.

The second cost of borrowing is the amount of discount from the instrument's face value computed from the day of its acceptance.¹⁴ This discount compensates the lender for his temporary loss of the use of his

¹³Bardenhagen, Expanding the Use of Bankers' Acceptances, p. 59.

¹⁴Cooper, "Bankers' Acceptances," p. 129.

funds and for any risks he assumes by lending the funds. Admittedly the risks to the lender are small since normally the party liable for the instrument is a large commercial bank. The rate of return required by investors to invest in bankers' acceptances is the rate of discount at which dealers in bankers' acceptances sell these instruments to investors. The dealers' rates are adjusted for different maturities by a fairly fixed format. The rate on acceptances with less than 90 days to maturity is the base rate with 1/8 per cent added to obtain the rate on acceptances with a maturity of 90 to 120 days, and an additional 1/8 per cent to obtain the rate on acceptances with a maturity of 120 to 180 days.

The Acceptance Dealers

At end of May 1974, there were six dealers in dollar bankers' acceptances. These were Briggs, Schaedle and Company, Inc.; Discount Corporation of New York; First Boston Corporation; M and T Discount Corporation; Salomon Brothers and Hutzler; and Merrill Lynch, Pierce, Fenner and Smith. Of these six dealers, only M and T Discount Corporation operates exclusively in bankers' acceptances. All of the dealers' operations are headquartered in New York.

A dealer in bankers' acceptances operates similarly to dealers in

¹⁵New York Federal Reserve Bank, Monthly Acceptance Survey, 1955-1973.

¹⁶Merrill Lynch, Pierce, Fenner and Smith Become the Sixth Dealer in Bankers' Acceptances, " Wall Street Journal (New York: Dow Jones and Company, Inc., March 30, 1966), p.4.

¹⁷Bardenhagen, Expanding the Use of Bankers' Acceptances, p.64.

any money market instrument. He stands ready to buy or sell at given rates into and out of his inventory. The "buy" rate of the dealer always exceed his "sell" rate; the differential covers his profit and operating expenses. The difference is called a "spread" and in the case of bankers' acceptances is 1/8 per cent on an annual basis.¹⁹ This "spread" is large as compared to "spreads" on other money market instruments because of the high selling costs caused by the odd sizes and maturities of the instruments in this market.²⁰

Acceptance dealers can continue dealing in acceptances only by having a continuous flow of securities. The primary source of acceptances to the dealers is the creating banks. Creating banks routinely purchase their own instruments immediately after "acceptance." Subsequently, they may discount the instruments to customers or to acceptance dealers. The dealers then sell the instruments to investors who usually hold acceptances to maturity. The last characteristic of the acceptance market makes creating banks the dealers' major source of acceptances.²¹

Creating banks depend upon dealers to be a "residual market" for the sale of acceptances which the banks do not wish to hold. If the demand for acceptances is high, the creating banks sell directly to

¹⁸The dealer's "sell" rate is the discount rate at which the dealer will sell instruments. The dealer's "buy" rate is the discount rate at which the dealer will purchase instruments.

¹⁹New York Federal Reserve Bank, Monthly Acceptance Survey, 1955-1973.

²⁰Cooper, "Bankers' Acceptances," p. 132.

²¹Ibid., p. 132.

investors because they collect the dealer's "spread" on these transactions. Creating banks acquire acceptances at the dealer's "buy" rate and sales to buyers other than dealers are at the dealer's "sell" rate. When the demand for acceptances is low, banks find it difficult to sell directly to investors and turn to dealers for the disposition of their unwanted instruments. These transactions are at the dealers' "buy" rate; thus, the banks do not collect the "spread."²² The net effect is that during periods of strong demand, dealers find it difficult to maintain an adequate inventory to assure their customers of a good selection of maturity dates and denominations. During periods of slack demand, the opposite occurs; pressure is placed on the dealers to absorb an increasing supply of acceptances and to hold larger inventories.

Investors

For our purpose an investor in a banker's acceptance is anyone who holds the instrument. Investors may be divided into two groups: non-permanent investors (those who do not hold the instruments until maturity) and permanent investors (those who hold the instruments until maturity). Both non-permanent and permanent investors provide financing while they hold the instruments, no matter how short the interval of possession. By our definition acceptance dealers and creating banks are investors in acceptances, at least on a non-permanent basis.

Acceptance dealers are investors in acceptances even though they do not normally hold instruments until maturity. Their role as investors

²²Ibid.

stems from their commitment of funds to finance their inventories. An acceptance dealer provides funds to this market in an amount equal to his inventory.

Creating banks can be non-permanent or permanent investors in acceptances. When a creating bank discounts to dealers or to its customers acceptances it has purchased, then it is a non-permanent investor in these instruments. It only invests for the time period required to purchase and dispose of the instruments. Creating banks which hold acceptances until maturity are considered permanent investors. They may be permanent investors in either their own acceptances or in acceptances of another creating bank. The acceptances of other creating banks are normally acquired through the process of "swapping."

"Swapping" in the vast majority of cases is done to acquire additional endorsers on the acceptance.²³ If a creating bank exchanges acceptances created under its own letters of credit for instruments of another creating bank, it will acquire instruments of better quality since other banks will have "endorsed" these instruments and can be held liable for payment. These exchanges are done either directly between banks or through dealers; in either case the process is called "swapping." If the swapping is done through a dealer, the dealer will purchase at his "buy" rate the instruments of the creating bank which desires additional endorsements and sell at his "sell" rate to this bank the instruments of another creating bank. Since the dealer's "buy" rate is 1/8 per cent higher than his "sell" rate, the effective

²³Federal Reserve Bank of New York, "Bankers' Acceptances," p. 98.

charge for this service is 1/8 per cent to the creating bank that desires instruments with additional endorsements. Swapping has in recent years lost some of its previous popularity with creating banks.²⁴

In addition to creating banks, other permanent investors in acceptances are the Federal Reserve System, non-United States investors; and non-creating bank United States investors. The Federal Reserve System normally purchases dollar bankers' acceptances from acceptance dealers. These purchases are for monetary policy reasons (although a very minor role is played by the bankers' acceptance market in monetary management), for foreign correspondents, and to support dealers for the purpose of insuring an orderly market.²⁵

Foreign investors are the largest investors in dollar bankers' acceptances (see Table 1). This group has, during the period of our study, held roughly one-half of the outstanding volume.²⁶ Further illustration of the regard which foreign investors have for acceptances is shown by the fact that bankers' acceptances rank third in volume of all dollar claims held by foreigners. United States Treasury Bills are first, followed by demand deposits.

The most important investors within this group of foreign individuals, corporations, and financial institutions are central banks. Foreign central banks obtain their instruments from either the Federal Reserve system

²⁴Cooper, "Bankers' Acceptances," p.134.

²⁵Bardenhagen, Expanding the Use of Bankers' Acceptances, pp. 65 and 70.

²⁶Board of Governors of the Federal Reserve System, "Bankers' Acceptances Outstanding," 1955-1973.

(the majority of Federal Reserve purchases are made for foreign correspondents who are normally foreign central banks), correspondent banks in New York City who often are creating banks, and occasionally from dealers.

Moving from foreign investors to United States investors, we find that the principal domestic investors in bankers' acceptances have already been discussed; these investors are creating banks, the Federal Reserve System, and acceptance dealers (see Table 1). Domestic investor interest from other sources is lacking, although in recent years more interest has been shown, especially by savings banks.²⁷ Much of the reason for the lack of interest can be traced to the general lack of knowledge of domestic investors about bankers' acceptances as an investment media.²⁸

Characteristics of the Bankers' Acceptance Market
Crucial to the Volume of
Acceptances Outstanding

Since the objective of this dissertation is to verify the major determinants of the volume of bankers' acceptances outstanding, we need to survey those characteristics of the market which seem to have significant implications for this purpose. One approach is to consider the reasons why borrowers, creating banks, dealers, and investors resort to this market.

²⁷Cooper, "Bankers' Acceptances," p.135.

²⁸Joines, "Bankers' Acceptances," p.74.

Factors Affecting Borrowers'
Demand for Acceptance Financing

Borrowers' influence in this market is through their decision on: how much financing to seek? This decision is based on all factors that normally enter financing decisions (i.e., volume of transactions to be financed, costs of financing, alternative sources of financing, etc.).

Volume of Transactions

The first factor to consider is, obviously, the volume of trade transactions which possess the characteristics necessary for financing with bankers' acceptances. As this volume varies, the volume of bankers' acceptance financing desired by borrowers will also vary. Some categories of commercial transactions are particularly adaptable to financing through the use of bankers' acceptances. A few of these account for most of the volume of bankers' acceptances created. These have certain characteristics which encourage the use of bankers' acceptances.

The first characteristic is that the seller of goods (i.e., the payee) requires unquestioned confirmation of the obligation to pay. If no formal obligation to pay is required, then trade credit or another alternative could be used.²⁹ Bankers' acceptance financing does represent a formal acknowledgement on the part of the drawee to pay the draft at maturity.

The second characteristic is that the documents necessary for collateral be routinely produced.³⁰ In those transactions that account for

²⁹ Cooper, "Bankers' Acceptances," p.129.

³⁰ Ibid.

the vast majority of bankers' acceptance financing, documents such as bills of lading, warehouse receipts, etc., are routinely created.

The third characteristic is that the seller finds it difficult to obtain adequate credit information about the buyer.³¹ Through the use of the letter of credit, the creating bank authorizes a draft to be drawn in exchange for goods to be sold to the buyer, and acknowledges its obligation to accept and hence to pay the draft. The sellers of goods are thus willing to complete transactions with buyers whose credit status is unknown since they rely on the credit reputation of the bank that issues the letter of credit. The lack of credit information about the buyer is really the major reason for acceptance financing.

These characteristics are found in three categories of business transactions that account for the vast majority of financing done with bankers' acceptances. These are international trade, domestic or international storage of readily marketable commodities, and the creation of dollar exchange (see Table 4).

International trade.--International trade accounts for the largest volume of commercial transactions financed by dollar bankers' acceptances (see Tables 4 and 5). From 1955 through 1973, 79 to 98 per cent of the bankers' acceptances created were used to finance international trade. Sufficient documentation for acceptance financing is routinely

³¹ Ibid., p.127

Table 4
 Volume of Dollar Bankers' Acceptances Outstanding Classified by Type of Transaction
 (In Millions of Dollars)
 Selected Years, 1955-1973

Type of Transaction	1955	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
<u>Total International Trade:</u>	562	1596	2273	2293	2792	3321	3330	3421	4117	4309	5310	6840	7730	6734	8198
Imports into the United States	252	403	485	541	567	667	792	997	1086	1423	1889	2601	2834	2531	2320
Exports from the United States	210	669	969	778	908	999	974	829	989	952	1153	1561	1546	1909	3340
Goods stored in or shipped between foreign countries	100	524	819	974	1317	1565	1564	1595	2042	1934	2268	2678	3350	2294	2538
<u>Total Domestic Trade:</u>	63	308	293	171	41	43	35	80	161	67	112	188	122	156	243
Shipments	9	13	13	12	9	12	11	15	19	8	13	36	28	24	43
Storage	54	295	275	159	32	31	24	65	142	59	99	152	94	123	200
<u>Dollar Exchange</u>	17	122	117	186	56	111	27	103	37	52	28	29	37	7	52
<u>TOTAL</u>	642	2027	2683	2650	2890	3385	3392	3604	4315	4428	5450	7057	7889	6898	8493

NOTE: Values are for the end of December. Because of rounding, figures do not necessarily add to totals.

SOURCE: "Commercial and Finance Company Paper and Bankers' Acceptances Outstanding," Federal Reserve Bulletin.

Table 5
 Percentage of Dollar Bankers' Acceptances Outstanding Classified by Type of Transaction
 Selected Years, 1955-1973

Type of Transaction	1955	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
<u>Total International Trade:</u>	88	79	85	87	97	98	98	95	95	97	97	97	98	98	97
Imports into the United States	39	20	18	20	20	20	23	28	25	32	35	37	36	37	37
Exports from the United States	33	33	36	29	31	30	29	23	23	21	21	22	20	28	39
Goods stored in or shipped between foreign countries	16	26	31	37	46	46	46	44	47	44	42	38	42	33	30
<u>Total Domestic Trade:</u>	10	15	11	6	1	1	1	2	4	2	2	3	2	2	3
Shipments	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1
Storage	8	15	10	6	1	1	1	2	3	1	2	2	1	2	2
<u>Dollar Exchange</u>	3	6	4	7	2	3	1	3	1	1	1	0	0	0	1
<u>TOTAL</u>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

NOTE: Values are for the end of December. Because of rounding, figures do not necessarily add to totals.

SOURCE: "Commercial and Finance Company Paper and Bankers' Acceptances Outstanding," Federal Reserve Bulletin.

produced in these transactions, lack of information of trading partners is fairly common, and formal acknowledgement of the obligation is desired.

The following products are the most common United States imports financed through bankers' acceptances: coffee, iron, rubber, metal ores, jute, sugar, steel, automobiles, cocoa, textiles, wool, and crude oil.³² The following products are the most common United States exports financed through bankers' acceptances: grain, cotton, machinery and parts, ores, oil, automobile products, chemicals, iron, and steel products.³³

Bankers' acceptance financing is not restricted to trade involving the United States. In the recent past a significant percentage of the volume of acceptances outstanding has been used to finance trade not involving the United States (see Tables 4 and 5). From 1960 through 1973, 26 to 47 per cent of all acceptances created were to finance trade not involving the United States. Products financed most frequently include oil, ores and metals, wool, cotton, grains, automobiles, sugar, and rubber.³⁴

Storage of goods.--Bankers' acceptances are used to finance the storage of many readily marketable commodities. Sellers of commo-

³²Cooper, "Bankers' Acceptances," p. 129.

³³Ibid.

³⁴Ibid., p. 130.

ties normally do not want to finance the storage of the goods for the buyer. The sellers desire cash or debt instruments which can be easily converted to cash. For a debt instrument to be readily converted, it must be the obligation of an unquestionable credit risk. Warehouse receipts, which can be used in acceptance financing, are routinely produced in the storage of readily marketable commodities. Sellers and buyers in these transactions often do not have a continuing relationship; therefore, sellers often lack sufficient credit information about buyers.

The following list of staple commodities are those most frequently stored through the use of this type of financing: cotton, rice, flour, grain, wool, sodium nitrate, peanuts, and tobacco.³⁵ The volume of acceptances created for the purpose of financing storage of goods is a small proportion of the total volume created (see Tables 4 and 5). Since 1965 only 1 to 3 per cent of the bankers' acceptance volume was created to finance domestic storage.

Creation of dollar exchange.--Only a small part of the volume of bankers' acceptances outstanding has been used to create dollar exchange (see Tables 4 and 5). Since 1965 the amount has varied between 1 and 3 per cent. The use of bankers' acceptances for this purpose has been for the benefit of commercial and central banks in a limited number of Latin American countries.

This particular type of acceptance has as the drawer-payee a foreign commercial or central bank which is located in one of the

³⁵Ibid.

countries designated by the Federal Reserve System to be eligible to receive dollar exchange through the creation of bankers' acceptances.³⁶ The instrument is sold by the drawer-payee as a money market instrument after it has been accepted by the drawee, thereby providing dollar exchange for the foreign commercial or central bank. Creation of dollar exchange by this process requires formal acknowledgement of the debt by an institution having a high credit reputation in the money market. Substitution of the credit status of the creating bank for the borrower via an acceptance is required since the credit status of these borrowers is often not known or is questionable to suppliers of funds in the money market.

Acceptances creating dollar exchange, unlike other acceptances, do not require bills of lading or warehouse receipts since they are not based on the shipment or storage of goods. The reason for this special category of bankers' acceptances is the need, in certain Latin American countries, for a mechanism to create dollar exchange. This need comes from the failure of exports and imports to vary together. Exports fail to generate foreign exchange at the time needed to finance imports. This places pressure on exchange rates to fluctuate seasonally during the year. The creation of dollar exchange moderates the seasonal fluctuations in exchange rates by providing exchange when exports are low, and using the surplus supply for repayment when ex-

³⁶Federal Reserve Act, 12 U.S.C., Sec. 13, para. 7 and 12, last revision August 31, 1946, Board of Governors of the Federal Reserve System.

ports are high.³⁷

Costs of financing

Any borrower should attempt to obtain borrowed funds at the lowest cost. Therefore, the demand for bankers' acceptance financing should increase as its cost decreases relative to the costs of alternative sources.

The most probable alternative sources of financing to dollar bankers' acceptances are short-term direct loans in the borrower's home country, direct short-term loans in New York City, short-term direct loans through the euro-dollar market, and borrowing in other bankers' acceptance markets.

Miscellaneous factors

In addition to the volume of transactions and the relative cost of financing, there are other factors which borrowers may consider in their financing decisions. One of these is the continuing availability of an adequate flow of funds. If the volume of financing available from a particular source of funds is restricted, then the amount of financing done through this market should decrease and an increase occur in the financing from other sources.

Another factor to consider is that an attractive source of financing should be flexible not only in its creation but also in its repayment. Acceptances are flexible in the former, but not in the

³⁷Ward and Harfield, Bank Credits and Acceptances, p. 104

latter since the instruments are generally negotiated into the hands of third parties. Lenders and borrowers should be familiar with a particular form of financing if it is to be attractive. Many borrowers, especially in the United States, are not familiar with acceptances as a method of financing.³⁸ Acceptance financing also tends to be more complex than various types of direct loans which does not count in its favor.

Borrowers are not the only participants in the acceptance market, and, therefore, do not exert the only influences on the volume of acceptances outstanding. The main link between borrowers and the acceptance market is the creating bank; therefore, we would expect the creating bank to play a major role in determining the volume of acceptances created.

Factors Affecting the
Willingness of Creating
Banks to Extend Acceptance
Financing

Certain factors should encourage "accepting" banks to create bankers' acceptances while others should not. A commercial bank would want to create these instruments because of the "acceptance" or service fee of 1/8 per cent per month of the face value of the instrument. This fee seems quite attractive to many banks judging by the growing number of banks offering acceptance credit facilities to their customers. In 1960 there were only 95 "accepting" banks; by

³⁸Joines, "Bankers' Acceptances," p. 74.

1968 there were 150 "accepting" banks.³⁹ Another illustration of the attractiveness of the service fee is that of the instruments purchased by creating banks at the time of acceptance, which is the majority of the instruments created, at most only 1/3 to 1/2 are held for investment purposes by the creating banks (see Table 1). Therefore, the majority of acceptances are not created by the bank for the purpose of holding them as investments. One explanation of this is that the service fee is attractive, but the return on the instruments, as compared to commercial bank customer loans, is not sufficient to encourage the creating banks to hold all the instruments they create.

Creation of acceptances can be attractive to creating banks during periods of restrictive monetary policy. If bankers' acceptances are not held by the creating banks, they fulfill the loan demand of the banks' customers without requiring commitment of the banks' limited resources. Through the use of acceptance financing the banks can satisfy a larger loan demand than they could through the use of direct loans only.

Several factors adversely affect the willingness of banks to extend credit through acceptances. To place short-term loans in the form of acceptances raises the cost and the complexity of credit extensions.⁴⁰ Regulations and customs impose an upper limit on the

³⁹"International: Acceptance Business Luring Additional Banks," Burroughs Clearing House (New York: Burroughs Corporation, September, 1968), p. 55.

⁴⁰Federal Reserve Bank of San Francisco, "The Role of Bankers' Acceptance Financing in International Trade and Finance," p. 87.

amount of transactions that can be financed by bankers' acceptances. For most commercial banks, the low amount of transactions financiable through the use of acceptances does not justify the added costs and complexities. Therefore, the majority of commercial banks do not extend credit to their customers through the use of bankers acceptances.

Another factor which affects acceptance financing from the commercial banks's point of view is the reception of its acceptances as money market instruments. If a bank wishes to use acceptances to convert a portion of its short-term customer loans into readily marketable money market instruments, the bank must have a good reputation and be known to dealers and investors. If a bank is unknown or does not possess a sound reputation in the acceptance market then its acceptances will not be readily marketable at rates competitive with those of its better-known competitors.

Role of the Dealer's
Inventory in the Operation
of the Market

A major portion of the instruments not held in the portfolios of the creating banks flows to investors through the acceptance dealers' inventories. The acceptance dealer's inventory is one of the most crucial aspects of a dealer's operation. The dealer is confronted with two objectives: to keep the inventory to a minimum level (thus minimizing his capital investment) and to maintain an inventory sufficiently large to include a wide variety of denominations and maturities to meet his customers' needs. The three factors believed to dominate the size of the inventory decision are (1) the cost of financing the inventory,

(2) the actual supply of acceptances, and (3) the expected demand for acceptances. The relationship between the cost of financing and the size of the inventory should be negative (i.e., as the cost of financing increases, the size of the inventory should decrease), while the relationship between the volume created and the size of the inventory should be positive.⁴¹ A dealer would be expected to increase his inventory if he expects future demand for bankers' acceptances to increase. The increased inventory would provide for the expected heavier drain on his inventory as demand increased.

The dealer changes his inventory by varying the discount rates at which he buys and sells acceptances relative to the rates quoted on other money market instruments. For example, if a dealer's inventory is low (i.e., a high demand or a low supply of instruments has depleted his inventory) the dealer would raise his inventory by lowering his buy and sell discount rates. One effect of this would be to discourage investors from purchasing the instruments in his inventory since their relative rate of return would be lower (assuming that other money market rates have not changed as a reaction to the change in acceptance rates). Creating banks would discount more of their instruments since the price the dealer offers for these instruments has increased due to the lowering of his discount rates. A longer run effect of the lowering of the discount rates should be a greater supply of acceptances as borrowers find the cost of acceptance financing to be lower because of the dealer's lowered discount rates. The net effect of the rate changes

⁴¹Bardenhagen, Expanding the Use of Bankers' Acceptances, p. 29.

on the dealer's operation is to decrease demand and increase supply; thus, increasing his inventory from both sides of his operation. The opposite effect will occur if the dealer's discount rates are raised.

Dealer's discount rates may be changed to maintain a constant inventory as well as to change its size. To keep his inventory constant, an acceptance dealer will be forced to change his acceptance 'buy' and 'sell' rates as competitive money market rates change. A change in the acceptance dealer's inventory would occur, if his acceptance discount rates are not adjusted as other money market rates change, due to the shift in the rate of return differentials between bankers' acceptances and competitive instruments. The change in the rate differential would cause investors to either favor bankers' acceptances as an investment media and lower the dealer's inventory, or cause investors to favor competitive investment media and increase his inventory.

The dealer's operations have two influences on the market. The first is to provide a reservoir of instruments, which allows an efficient flow of acceptances from creating banks to investors. The second influence is to provide a source of funds for the market by an amount equal to their inventory. Therefore the dealers are investors in acceptances and have the effect that other investors in acceptances have.

Characteristics of Dollar
Bankers' Acceptances
Significant to Investors

Investors influence the level of acceptances outstanding by the rate of return they require on investments in acceptances (i.e., the

supply of funds extended by investors at given rates of return). The investors' supply of funds curve is seen as interacting with the borrowers' demand for funds curve. The interaction gives the amount of funds lent (borrowed) and the rate of return (cost of borrowing) of the funds. The rate of return investors require for investment in acceptances is based on investors assessing the various alternative investments available to them. Bankers' acceptances must compete with other investment media for the investors' favor. Acceptances have advantages and disadvantages relative to alternative investments.

Advantages of investment
in acceptances

Two major advantages of an acceptance to an investor are its quality and liquidity. The quality of these instruments is based on the primary liability of the creating bank and the self liquidating transactions financed by the majority of these instruments. Bankers' acceptances are highly marketable due to the quality of the instrument which assures the existence of a market willing and able to absorb large amounts of these instruments. The rates on acceptances are attractive since yields are generally $1/4$ to $1/2$ per cent higher than United States Treasury Bills.⁴² The majority of potential investors in acceptances are seeking short-term investments for their portfolios.

Foreigners have additional reasons to favor bankers' acceptances. First is the growth of the dollar holdings of foreigners, especially

⁴²Cooper, "Bankers' Acceptances," p. 131.

foreign central banks, between 1955 and 1973. This trend is shown in Table 6. Any high grade investment media denominated in United States dollars is viewed favorably as an investment outlet by foreign investors with a large volume of United States dollars to invest.

In addition, foreign individuals, corporations, and institutions usually possess greater familiarity with acceptance financing than their counterparts in the United States. The familiarity stems from the use for several centuries of the acceptance instrument in Europe as a major financing device. Thus, bankers' acceptances are not the strange and unknown money market instrument to foreign investors as they are to United States investors.⁴³

Disadvantages of
investment in acceptances

Bankers' acceptances do have unfavorable features which lessen their attractiveness to investors. These instruments are denominated in odd amounts and it is difficult to tailor maturities to the needs of investors.⁴⁴ During periods of large demand for dollar acceptances, non-creating bank investors in acceptances often find it difficult to obtain sufficient volume to fill their requirements for these instruments.⁴⁵ Another principal disadvantage is that the rates of return on acceptances, though better than United States Treasury Bills, are often significantly lower than other money market instruments such as commercial paper and certificates of deposit.

⁴³Cooper, "Bankers' Acceptances," p. 131.

⁴⁴Federal Reserve Bank of New York, "Bankers' Acceptances," p. 99.

⁴⁵Cooper, "Bankers' Acceptances," p. 134.

Table 6
 United States Liquid Liabilities and Dollar
 Bankers' Acceptances Held by Foreigners
 (In Millions of Dollars)

Year	Dollar Bankers' Acceptances	United States Liquid Liabilities
1960	1,215	21,027
1961	1,320	22,936
1962	1,254	24,068
1963	1,149	26,322
1964	1,408	29,082
1965	1,570	29,115
1966	1,906	29,779
1967	1,733	33,119
1968	2,507	33,614
1969	3,470	41,894
1970	3,838	43,242
1971	3,624	67,681
1972	3,269	82,901
1973	5,124	93,121

NOTE: Data are for the end of December.

SOURCE: "U.S. Liquid Liabilities to Foreign Official Institutions and Liquid Liabilities to All Other Foreigners," and "Commercial and Finance Company Paper and Bankers' Acceptances Outstanding," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, February, 1961-1974).

CHAPTER III FORMULATION OF THE HYPOTHESIS

Our summary of the literature on the bankers' acceptance market and our discussion of the market and its participants suggest six major determinants of the volume of acceptances outstanding. These are international trade, cost differentials between alternative methods of financing trade, credit availability, expected changes in exchange rates, international access of borrowers and lenders to the acceptance market, and availability of credit information on importers and exporters.

This chapter will discuss the theoretical basis for these determinants, and present some empirical evidence to support their inclusion in our hypothesis which will be formally presented in the last section of this chapter.

International Trade

All articles cited in the literature review which were written after 1955 state that international trade is an important determinant of the outstanding volume in this market.¹ The reason for the hypothesized link between the volume of acceptances created and the level of inter-

¹Consult pages 7, 10, 11, and 13 of the first chapter for several articles supporting this statement. Also consult Joines, "Bankers' Acceptances," pp. 68 and 70, as well as Bardenhagen, Expanding the Use of Bankers' Acceptances, p. 74.

national trade is that the vast majority of acceptances finance international trade. Table 5 indicates that the proportion of the volume of acceptances outstanding used to finance international transactions for the period 1955-1973 varied between 79 to 98 per cent. It is only logical to conclude that as the volume of international transactions increases for a given region, *ceteris paribus*, so will the volume of financing required by importers and exporters of that region. One of the sources of financing available is bankers' acceptances. We conclude that a positive relationship should exist between the volume of international trade and the volume of bankers' acceptances outstanding.

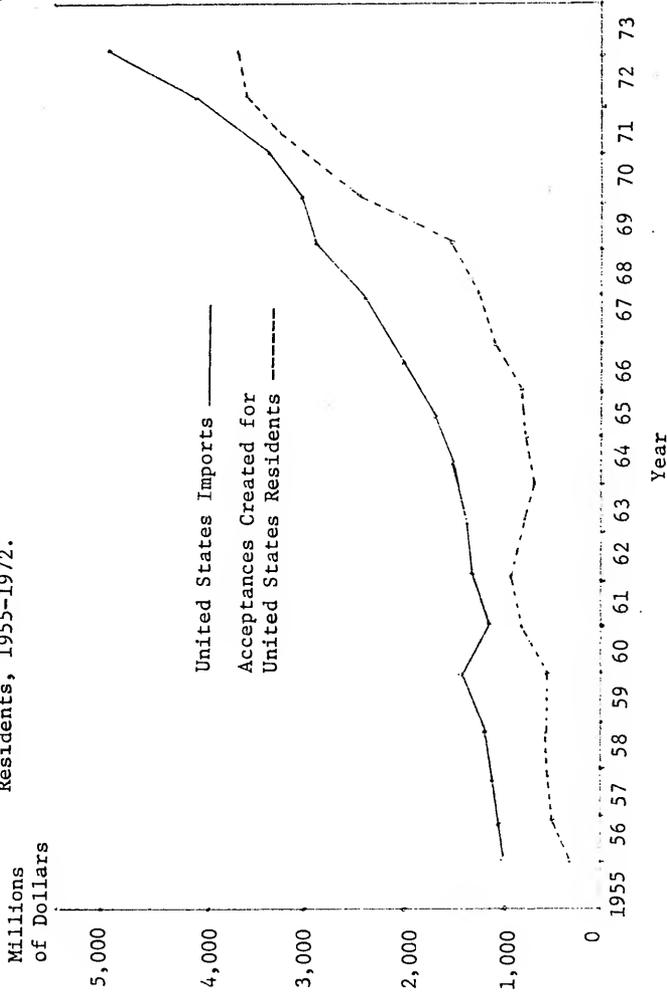
In support of this relationship the reader is referred to Graphs 1, 2, 3, 4, and 5. These graphs show for each geographic region used in the study the volume of bankers' acceptances outstanding created for the residents of that region, and the amount of the region's imports denominated in United States dollars.² With the exception of Latin America, our analysis relates to imports rather than the total value of international trade since little use is made of pre-export acceptance financing in most regions, and the burden of arranging financing is generally borne by importers.³ Latin America is an exception since pre-export acceptance financing is more common there.⁴

²For this study, all data will be expressed in United States dollars.

³Bardenhagen, Expanding the Use of Bankers' Acceptances, p. 29.

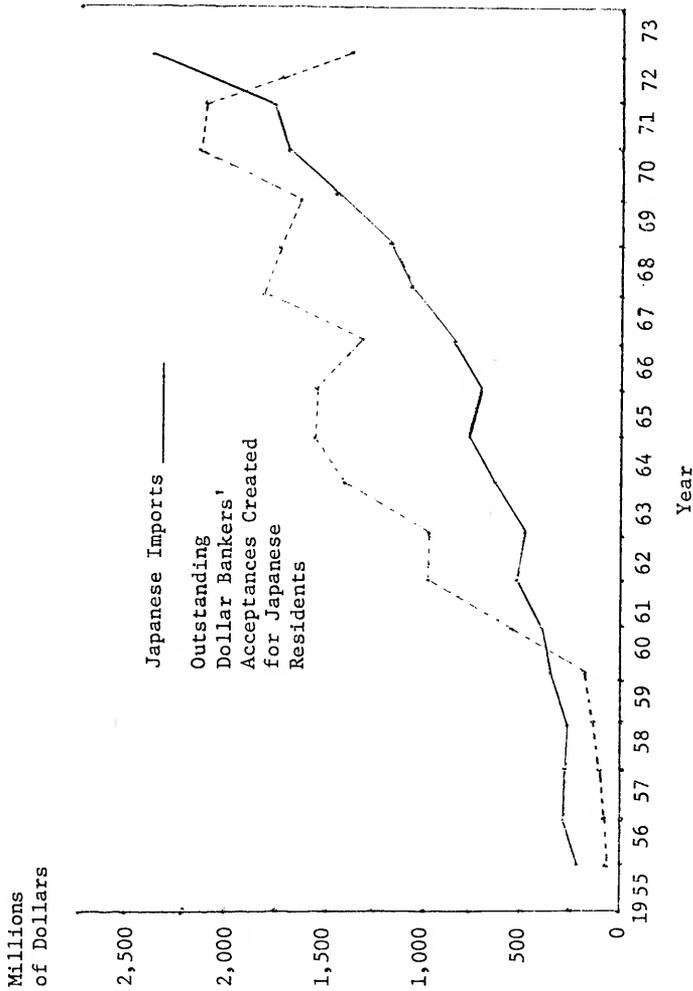
⁴Ibid., p. 30.

Graph 1: Year-End Monthly Volume of United States Imports and Outstanding Volume of Dollar Bankers' Acceptances Created for United States Residents, 1955-1972.



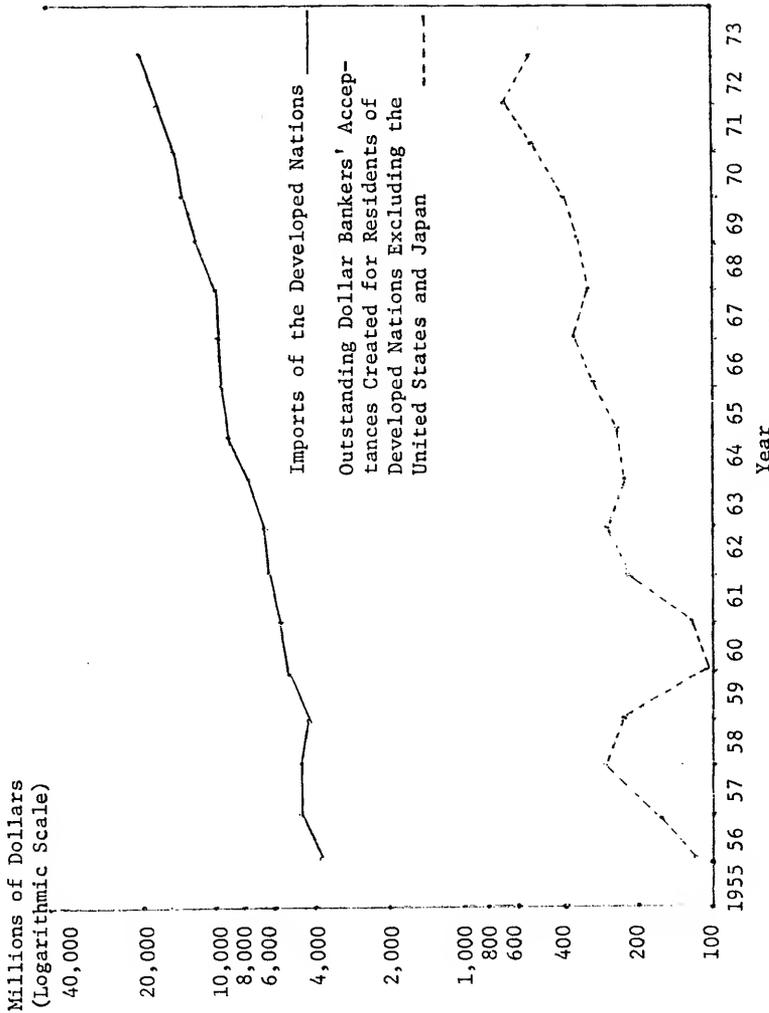
Source: "Bankers' Acceptances Outstanding," Federal Reserve Bulletin; "Acceptances Created for the Accounts of Foreigners," United States Treasury Report; and "United States Imports and Exports," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, 1955-1973).

Graph 2: Year-End Monthly Volume of Japanese Imports and Outstanding Volume of Dollar Bankers' Acceptances Created for Japanese Residents, 1955-1972.



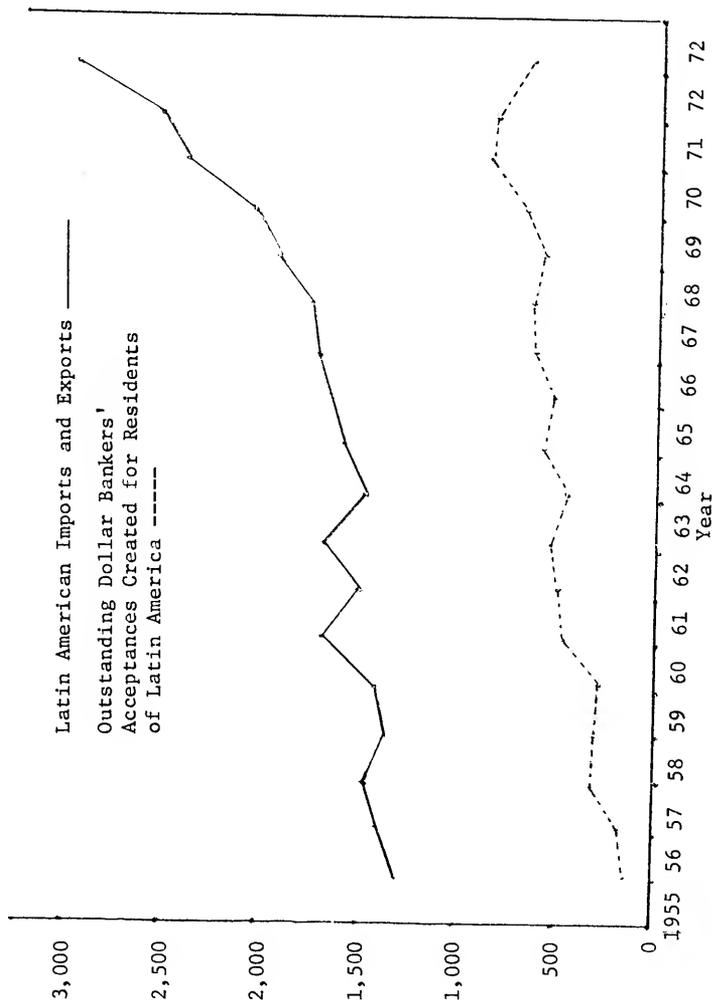
Source: "Acceptances Created for the Accounts of Foreigners," United States Treasury Report; "Japan," International Monetary Statistics (New York: International Monetary Fund, 1955-1973).

Graph 3: Year-End Monthly Volume of Imports for Developed Nations (Excluding United States and Japan) and Outstanding Volume of Dollar Bankers' Acceptances Created for Residents of Developed Countries (Excluding the United States and Japan), 1955-1972.



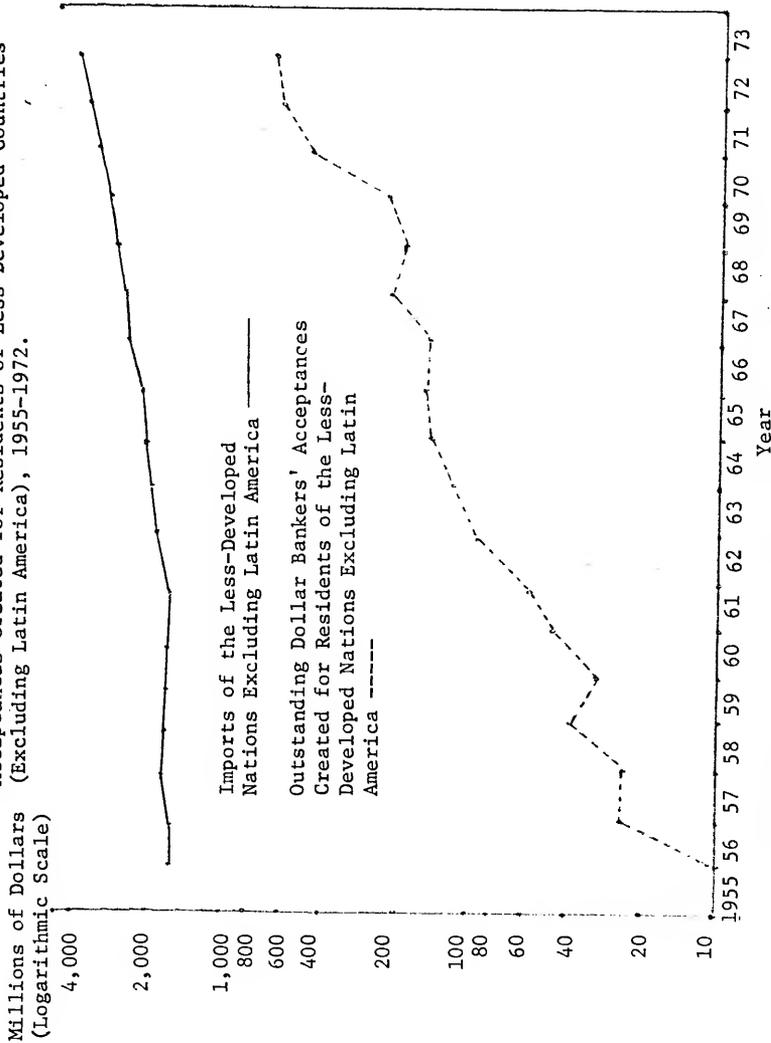
Source: "Acceptances Created for Accounts of Foreigners," U.S. Treasury Report, and "World Trade: Imports," International Monetary Statistics (New York: International Monetary Fund, 1955-1973)

Graph 4: Year-End Monthly Volume of Imports and Exports for Latin America and Outstanding Volume of Dollar Bankers' Acceptances Created for Residents of Latin America, 1955-1972.



Source: "Acceptances Created for the Accounts of Foreigners," U.S. Treasury Report, and "World Trade," International Monetary Statistics.

Graph 5: Year-End Monthly Volume of Imports for Less-Developed Countries (Excluding Latin America) and Outstanding Volume of Dollar Bankers' Acceptances Created for Residents of Less-Developed Countries (Excluding Latin America), 1955-1972.



Source: "Acceptances Created for the Accounts of Foreigners," U.S. Treasury Report, and "World Trade: Imports," International Monetary Statistics.

In Graph 4 the sum of the value of Latin American imports and exports is plotted along with the volume of acceptances outstanding created for residents of Latin America. The reader will observe for each region a general positive relationship between the volume of acceptances outstanding and the amount of international trade.

In Graph 1 a general positive relationship seems to exist between United States imports and the volume of acceptances outstanding created for United States residents. However, there are periods when this relationship does not hold. In 1960 imports decreased while the volume of acceptances outstanding increased; in 1962 and 1963 imports increased but acceptances decreased. In 1969 United States imports increased slightly while the volume of acceptances outstanding increased substantially. The opposite occurred in 1972; imports increased substantially but acceptances increased only slightly.

Graph 2 demonstrates a positive relationship between Japanese imports and the volume of acceptances outstanding created for Japanese residents. From 1960 through 1972 the year-end volume of acceptances outstanding exceeded the year-end monthly volume of imports. This is possible because bankers' acceptances can be written with up to six months maturity. Therefore, when acceptances finance a large portion of imports, the volume of acceptances outstanding, which are a result of the last six months of imports, can exceed the amount of the most recent month's imports. In the other regions, the percentage of imports (and exports in the case of Latin America) financed by bankers' acceptances is not large enough for this to occur. Graph 2, as Graph 1 discloses periods when a general positive relationship does not exist.

In 1966, 1968, 1969, 1971, and 1972, the volume of Japanese imports increased but the volume of acceptances outstanding declined. In 1960 and 1961 imports increased at a moderate rate while the volume of acceptances increased at a much more rapid rate. At the beginning of 1960, 202 million dollars of bankers' acceptances were outstanding but by the end of 1961 there were 999 million dollars outstanding, an increase of 395 per cent. This rapid increase in volume was probably partially due to the cost differentials during this period which favored bankers' acceptance financing over alternative financing media. These alternatives will be the subject of the next section of this chapter.

A general positive relationship between imports and bankers' acceptances outstanding is also demonstrated in Graph 3. Although dollar acceptances outstanding created for residents of developed nations other than the United States and Japan have increased with increases in imports, the rate of increase does not appear to have been as proportionate as for the residents of these two countries. Furthermore, there are periods when the positive relationship does not hold as in 1959, 1963, 1967, and 1972, when the volume of acceptances outstanding decreased although the volume of imports increased.

A positive relationship between Latin American international trade and the volume of acceptances outstanding created for Latin American residents is demonstrated in Graph 4. However, during a number of periods the general positive relationship does not exist; in 1961, 1965, 1968, 1971, and 1972 international trade increased while outstanding acceptances decreased. In 1961, acceptances increased slightly, but the volume of international trade decreased significantly. In 1962,

international trade increased rapidly; however, acceptances increased at a very slow rate. There appears to be a change about 1967 in the proportion of Latin American imports and exports financed with acceptances.

In Graph 5 we observe a general positive relationship between imports and acceptances until the period 1968 through 1972. In 1968 and 1969, imports increased at a moderate rate but the volume of acceptances outstanding created for residents of the less-developed countries, excluding Latin America, stayed relatively constant. In 1970 and 1971, imports for this region increased at a moderate rate with the volume of acceptances outstanding increasing at a much more substantial rate. In 1972, there were substantial increases in imports for this region while the volume of acceptances remained about constant.

In this period, 1955-1972, there were sub-periods when the volume of bankers' acceptances outstanding increased substantially: 1960-1971, 1969-1971, and 1973 (See Table 2). During the 1969-1971 period, some regions (Japan in 1969 and 1971 and Latin America in 1971) experienced a decline in acceptances outstanding even though the volume of their international trade increased, while other regions (United States in 1960, Latin America in 1961, and the less-developed countries excluding Latin America, in 1960-1961) in the 1960-1961 period experienced an increase in acceptances outstanding even though their volume of international trade decreased. A substantial decrease in the volume of acceptances outstanding occurred in 1972: a decline experienced by three of the regions (Japan, developed nations excluding the United States and Japan, and Latin America) while the other two (United States

and the less-developed countries excluding Latin America) experienced very little increase. This was a year of substantial increase in the volume of international trade in which all of the regions participated. Thus while the volume of international trade seems to be an important determinant of the volume of bankers' acceptances outstanding, it does not explain all of the variations which occur.

Cost Differentials in Alternative
Methods of Financing

Cost differentials between alternative methods of financing international trade have been advanced as a factor likely to influence the volume of bankers' acceptances outstanding.⁵ It is assumed that importers and exporters are profit maximizers, which implies that they seek to minimize the cost associated with financing their shipments and storage. From this profit maximization principle, the conclusion drawn is that dollar bankers' acceptance volume should increase as acceptances become a less costly method of financing international trade. Four alternative sources of funds are considered in this study: direct short-term loans in New York City, sterling bankers' acceptances, direct short-term loans in the euro-dollar market, and direct short-term loans in the borrower's home country.

Direct short-term loans in New York are likely to be an alternative source available to the majority of importers and exporters in all regions, since the commercial banks which engage in acceptance financing also

⁵Refer to pages 7, 10, 11, and 14 of Chapter I for articles that support this statement.

make direct short-term loans.⁶ Therefore, it is probable that importers and exporters which have access to acceptance financing would also have access to direct short-term loans from the same banks.

Another alternative to acceptance financing likely to be available to many importers and exporters in all regions is sterling bankers' acceptances.⁷ The basis for this is twofold. The first is the great similarity between the sterling and dollar acceptance instruments and the respective markets. The second is that the sterling bankers' acceptance market is as important, as an acceptance market, as the dollar acceptance market.

Direct short-term loans in the euro-dollar market are another alternative available to many importers and exporters using dollar acceptance financing. The euro-dollar market headquartered in the second largest financial center in the world, London, has grown rapidly in the 1960's. Many importers and exporters using dollar acceptance financing with contacts in New York would also have access to this market. Since a substantial portion of euro-dollar loans

⁶This is supported by: Federal Reserve Bank of San Francisco, "The Role of Bankers' Acceptance Financing in International Trade," p. 86; Solomon and Tamagna, "Bankers' Acceptance Financing in the United States," p. 487; Federal Reserve Bank of New York, "Bankers' Acceptances," p. 97; Cooper, "Bankers' Acceptances," p. 130; and Federal Reserve Bank of Cleveland, "Rebound in the Use of Bankers' Acceptances," p.9.

⁷This is supported by: Solomon and Tamagna, "Bankers' Acceptance Financing in the United States," p. 488; Federal Reserve Bank of New York, "Bankers' Acceptances," p. 97; and Federal Reserve Bank of Cleveland, "Rebound in the Use of Bankers' Acceptance," p.9.

are short-term direct loans, this should be a competitive alternative to dollar acceptance financing.⁸

The last alternative source of funds considered is direct short-term loans in the borrower's home country.⁹ If an importer or exporter can borrow through the use of acceptance financing, probably he can also borrow by short-term direct loans from a domestic bank in his home country. The extent to which this is a viable alternative will vary, of course, with the nature of the financial system and the acceptance of the country's currency in international trade. This alternative will be considered in regions consisting of one country: Japan and the United States. Domestic short-term loans to United States residents will be reflected by short-term direct loans in New York; while for Japanese residents, direct loans from Japanese banks by import bills will be used. For the other regions, domestic direct short-term loans are not considered since their inclusion would cause a statistically unmanageable number of alternative sources of funds, since each of these regions includes at least 30 countries. Additionally, statistics to reflect costs of direct short-term loans in economies other than the major economic powers are often lacking. Thirdly, the acceptability in international trade of the currencies of the countries in these regions would often be lacking.

⁸Friedrich Klaus, The Euro-Dollar System (Ann Arbor: Cornell University, 1968), p. 11.

⁹This statement is supported by: Federal Reserve Bank of New York, "Bankers' Acceptances," p. 97; Cooper, "Bankers' Acceptances," p. 131.

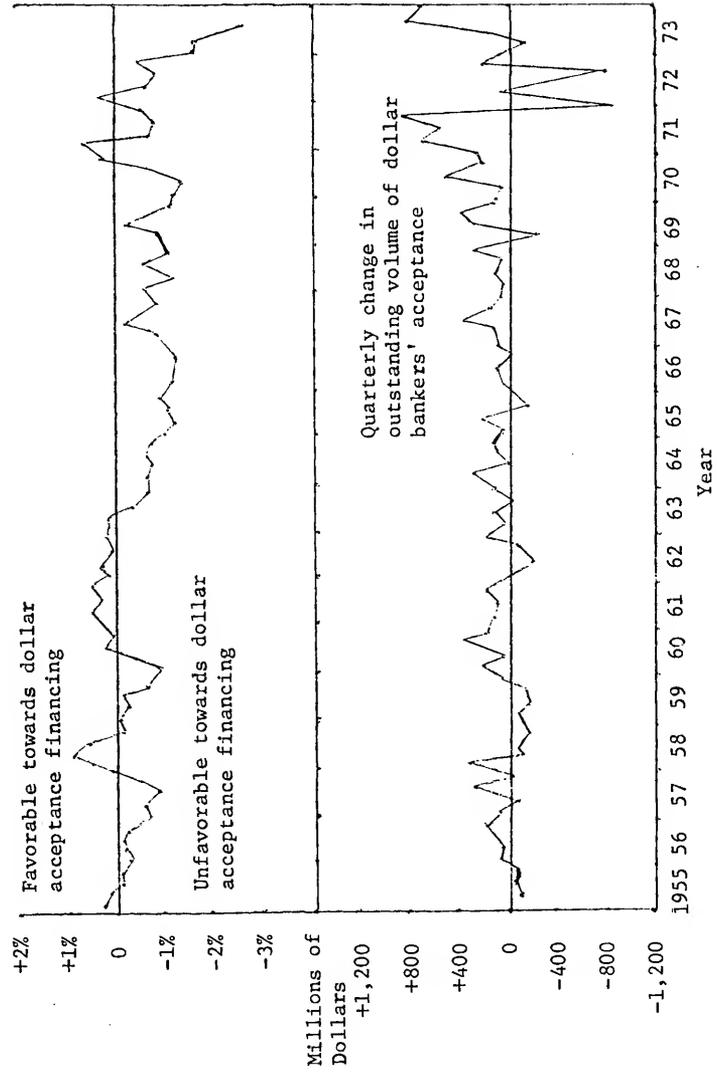
The volume of acceptances outstanding for a particular region should increase as dollar acceptances become a less expensive source of financing; i.e., as the differential between the rate charged for dollar acceptances subtracted from the rate charged for alternative sources becomes larger and the sign is positive, the volume of dollar acceptances outstanding, *ceteris paribus*, should become larger.

As a preliminary test of this hypothesis, we have plotted quarterly differentials in the cost of dollar acceptance financing relative to short-term direct loans in New York, sterling bankers' acceptances, and euro-dollar short-term direct loans. These values are then compared with the quarterly changes in the volume of dollar acceptances outstanding and recorded in Graphs 6, 7, and 8, respectively.

An examination of these graphs fails to reveal any significant consistent relationship between cost differentials in the financing of trade and the volume of dollar acceptances outstanding. There are periods when the relationship was as hypothesized: from the last half of 1960 through 1962 (Graph 6), the last half of 1970 through 1971 (Graph 7) and 1969-1971 (Graph 8). There are periods during which the observed relationships were the opposite of those hypothesized: 1956-1957 and 1964-1969 (Graph 6); 1956-1957 (Graph 7); and 1961, 1969 and 1971-1972 (Graph 8).

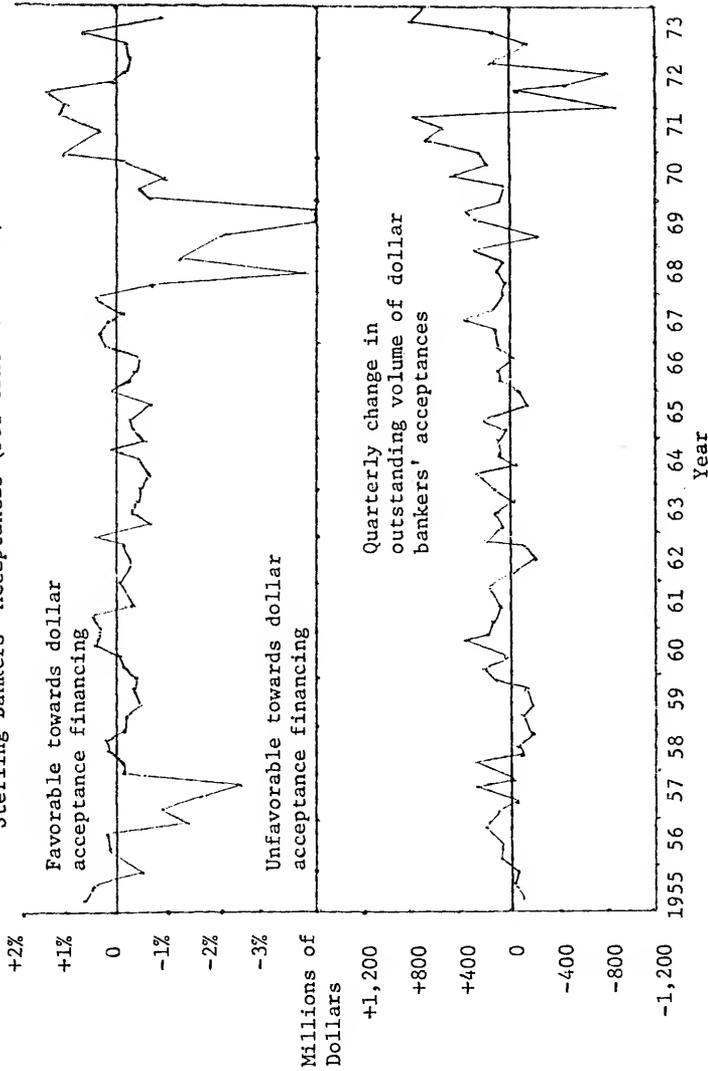
There are a number of problems with this type of analysis. The alternative is not dollar bankers' acceptances and one of the other sources but between dollar acceptances and any of the other sources. To the extent that the cost of financing using other sources does not move uniformly relative to the cost of dollar acceptance financing, the

Graph 6: 1955-1973, Cost Differentials Between Dollar Bankers' Acceptances and Short-Term Direct Loans in New York (Per Cent Per Annum).



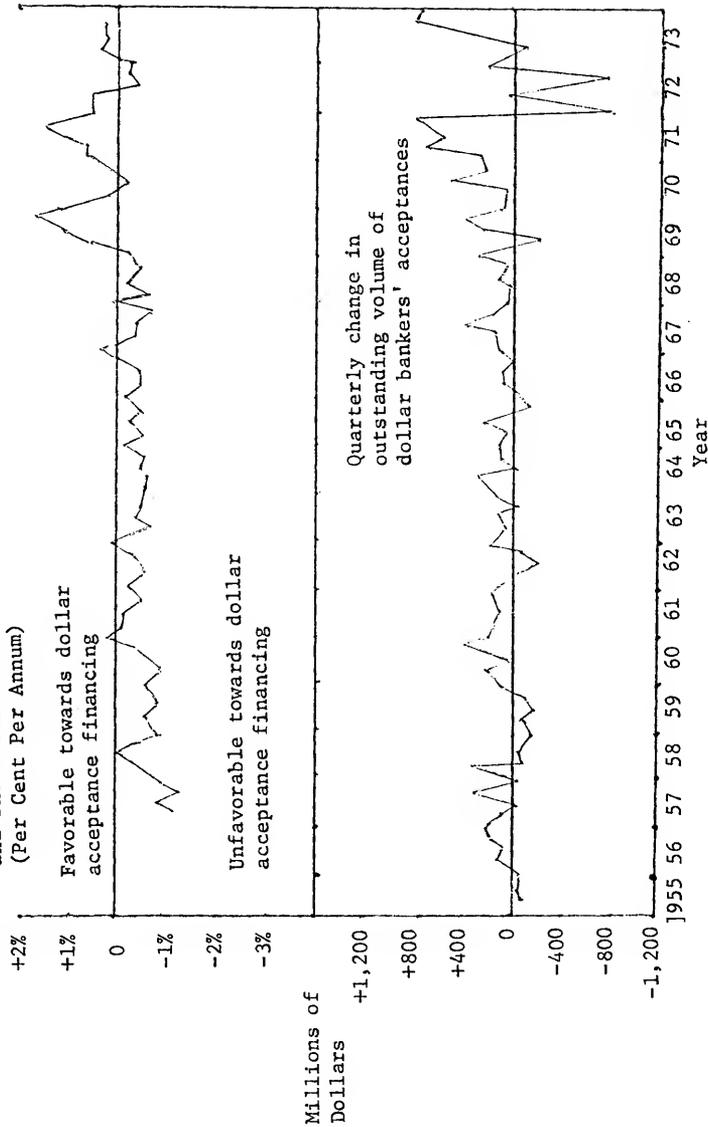
Source: "Money Market Rates," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, 1955-1973), and "Rates on Business Loans of Banks," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, 1955-1973); "Bankers' Acceptances Outstanding," Federal Reserve Bulletin.

Graph 7: 1955-1974, Cost Differentials Between Dollar Bankers' Acceptances and Sterling Bankers' Acceptances (Per Cent Per Annum).



Source: "Money Market Rates," Federal Reserve Bulletin; "Short-Term Money Market Rates," Bank of England Statistical Abstract (London: Bank of England, 1955-1974); "Bankers' Acceptances Outstanding," Federal Reserve Bulletin.

Graph 8: 1955-1973, Cost Differentials Between Dollar Bankers' Acceptances and Short-Term Direct Loans in the Euro-Dollar Market (Per Cent Per Annum)



Source: "Money Market Rates," Federal Reserve Bulletin; "Short-Term Money Market Rates," Bank of England Statistical Abstract; and "Bankers' Acceptances Outstanding," Federal Reserve Bulletin.

movement of the volume of dollar acceptances plotted against each may not accurately measure the impact of changes in relative cost of alternative sources of financing on the volume of dollar acceptances outstanding. In addition, our data are quarterly changes and the impact will be due to daily or even hourly fluctuations that may not be the same as that depicted by quarterly changes. Finally, the impact of relative cost changes will be reflected on the ending quarterly volume of acceptances outstanding only through the volume of newly created acceptances which may not be adequately reflected in the quarterly ending aggregate outstanding.

While the empirical data do not lend significant support to this hypothesis, it will be retained for further analysis because of the strong logic supporting the hypothesis, namely, that importers and exporters attempt to maximize profits.

Credit Availability

The third factor cited as likely to have an influence on the volume of bankers' acceptances outstanding is the stance of monetary policy in the United States.¹⁰ Restrictive monetary policy has at least two effects on the acceptance market. The first is through an increase in interest rates and the second is to limit credit availability. An easy monetary policy has the opposite effects.

Rising interest rates in the United States would be expected to decrease financing sought by borrowers in United States financial

¹⁰Consult pages 7 and 11 of the first chapter for articles that support this statement.

markets for two reasons. Higher interest rates mean higher costs and therefore some trade transactions would not be profitable. This possible effect of monetary policy on the volume of acceptances would be reflected through the volume of international trade. Interest rates do not increase equally and simultaneously in all United States financial markets nor do foreign rates necessarily move in step with rates in the United States. This would mean a shift in the cost differentials between alternative methods of financing trade. These shifts can be expected to have an effect on the volume of acceptances created as explained in the preceding section of this chapter.

If monetary policy affects credit availability, it should have an influence on the volume of acceptances outstanding.¹¹ As the degree of monetary restraint increases and credit availability lessens, commercial banks (including creating banks) will be less able to meet their customers' loan demand from existing sources of funds and will attempt to ration funds. Converting a portion of a bank's commercial loans into dollar banker's acceptances which are discounted in the money market enables the creating bank to meet a segment of its loan demand without committing its own funds. Thus the bank is able to satisfy a larger loan demand than would be possible without the use of acceptances. Creating banks, therefore, have an incentive to increase the creation of bankers' acceptances during periods of shrinking availability of credit.¹²

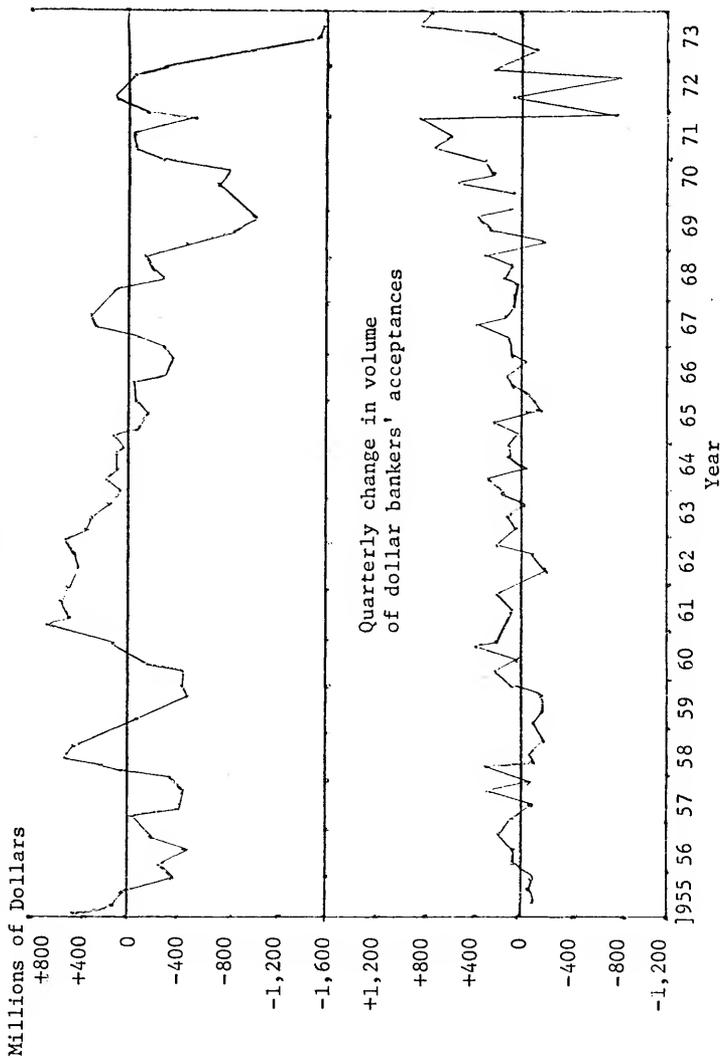
¹¹ Ibid.

¹² James B. Ludike, The American Financial System (Boston: Allyn and Bacon, 1968), p.113.

The relationship described is negative between the volume of bankers' acceptances and credit availability in the United States. As the level of credit availability decreases, the level of bankers' acceptances should increase. The volume of acceptances created should decrease as credit becomes more available. To illustrate the plausibility of this relationship, Graph 9 is presented. In the top half of the graph, we have plotted the level of free reserves (quarterly average). Market forces seem to follow this data series as an indication of the stance of monetary policy and credit availability. A quarterly average was chosen to eliminate variations due to market forces and to more accurately reflect the effect of Federal Reserve operations. A policy of monetary restraint and lessening credit availability are indicated by an increasing volume of borrowed reserves (i.e., negative free reserves) which should increase the volume of acceptances outstanding. In the bottom half of the graph we have quarterly changes in the volume of bankers' acceptances outstanding.

The data presented do indicate support of the hypothesis. During periods of net borrowed reserves, namely 1955-1957, 1959-1960, 1966, 1968-1970, and 1973, the volume of bankers' acceptances outstanding increased; and during the periods of positive free reserves, namely 1958, 1961-1964, 1967 and the first part of 1972, the total volume of acceptances outstanding tended to decrease.

Graph 9: 1955-1973, Average Quarterly Level of Free Reserves



Source: "Reserves and Borrowings of Member Banks," Federal Reserve Bulletin, (Washington, D.C.: Federal Reserve System, 1955-1974), and "Bankers' Acceptances Outstanding," Federal Reserve Bulletin.

Expected Exchange Rate Changes

A fourth factor that may influence the volume of bankers' acceptances outstanding is the expectations of importers and exporters of probably changes in the exchange rate of the United States dollar. This determinant is based on the assumption that importers and exporters are aware of factors influencing exchange rates and of the impact of changes in exchange rates on the profitability of their transactions. Consequently, when events point to substantial adjustments in exchange rates, they will react in such a way as to benefit from the anticipated changes. Such action will be triggered by expectations of changes of a magnitude which differs from the premium or discount of currencies calculated by comparing actual spot and forward rates.

Experience indicates that when conditions persist which lead to changes in official par values of currencies, central banks interfere in the foreign exchange markets. Central banks of countries whose currencies are in a relatively strong position internationally have defended the present exchange rates of their currencies by absorbing large amounts of currencies that are expected to depreciate. As an example of this activity, we cite the amount of United States dollars absorbed by the Bundesbank, the central bank of West Germany, during 1971. During this period, when there was an expected depreciation of the dollar, the Bundesbank acquired foreign exchange (mainly dollars): increasing from a January 1971 level of 8.6 billion dollars to 13.6 billion dollars in May 1971, an increase of 57 per cent.¹³ These

¹³International Monetary Fund, "International Liquidity: Foreign Exchange Holdings," International Monetary Statistics (New York: International Monetary Fund, 1971).

acquisitions were made to defend the then existing rate of exchange of the German mark and the United States dollar.¹⁴ By the end of May 1971, expectations of further depreciation of the dollar relative to the mark had declined, and the Bundesbank was able to reduce its foreign exchange holdings to approximately 11.5 billion for the rest of 1971.¹⁵

Central banks' interference in the exchange markets gives support in the forward exchange market to the currencies expected to depreciate. This support causes the actual forward discounts of the currencies expected to depreciate to be less than the discounts which would prevail in the exchange markets without the central banks' support. For evidence of this, we again look at the 1971 depreciation of the dollar. The actual depreciation of the United States dollar in terms of the German mark was 10 per cent, but the three-month forward discount of the dollar to the mark never exceeded 4.83 per cent on an annual basis.¹⁶ This effect will exist as long as central banks defend specific exchange rates; evidence suggests that central banks continue to do this even with the recent changes in the international monetary system.¹⁷

¹⁴"Germany Buys Dollars," Wall Street Journal (New York: Dow, Jones and Company, Inc., May 5, 1971), p.2.

¹⁵International Monetary Fund, "International Liquidity: Foreign Exchange Holdings," 1971.

¹⁶International Monetary Fund, "Exchange Rates," and "Forward Rates," International Monetary Statistics (New York: International Monetary Fund, 1971).

¹⁷"Germany Buys 1.2 Billions of Dollars," Wall Street Journal (New York: Dow, Jones and Company, Inc., February 23, 1973), p.3.

There are two possible situations where expectations of changes in exchange rates could affect the volume of dollar acceptances outstanding. The first is growing expectations of a depreciation of the United States dollar, and the second is growing expectations of an appreciation of the dollar. An expected depreciation of the dollar should lead to an increase in the volume of acceptances created. This situation can be illustrated with the use of a numeric example. Assume that a transaction can be financed with dollar acceptances at 12 per cent per annum (including the service fee) and that the only alternative is sterling acceptances at 9 per cent per annum. Assume further that importers and exporters expect the dollar to depreciate 6 per cent per annum within the next three months. Finally, assume that the three-month forward discount of the dollar is only 3 per cent due to the central banks' efforts to defend the existing rates of exchange.

Under these circumstances exporters and importers receiving payment in United States dollars will find the cost of financing to be the same with both sterling and dollar acceptances (i.e., 12 per cent on an annual basis) if they cover their exchange rate risks. If \$1,000 is borrowed to finance a trade transaction lasting three months and with the above listed assumptions, \$1,030 would be paid by the borrower when the acceptance matured if a dollar acceptance is used. If the transaction is financed by a sterling acceptance and the current spot rate for the pound is \$2.50, then 400 pounds would be borrowed and 409 pounds would be paid at maturity. Since the actual three-month forward discount of the dollar in terms of the pound is 3 per cent (on an annual basis) the quoted forward rate for the pound is \$2.52 which allows coverage of the sterling acceptance for \$1,030. Therefore, the sterling

acceptance cost is the same as the dollar acceptance.

Importers and exporters receiving payments in pounds sterling will be motivated to seek dollar acceptance financing and not cover their exchange rate risk. This occurs even though usual methods, as used in the second section of this chapter, of calculating the cost differential between these alternate sources of financing indicate a 9 per cent cost on an annual basis from both sterling and dollar bankers' acceptance financing (assuming exchange rate risk coverage). Dollar acceptance financing is favored because its cost is 6 per cent if the expectations about the depreciation of the dollar come true, and if exchange rate risks are not covered (i.e., 12 per cent interest costs minus the 6 per cent expected depreciation of the United States dollar relative to the British pound). If 1,000 pounds is borrowed to finance a three-month trade transaction and with the above listed assumptions, 1,022.50 pounds would be paid by the borrower when the acceptance matured if a sterling acceptance is used. If the transaction is financed by a dollar acceptance with a current spot rate of the pound of \$2.50, then \$2,500 would be borrowed and \$2,575 would be paid at maturity. If the dollar depreciates relative to the pound by 6 per cent on an annual basis during the three months the dollar acceptance is outstanding, only 1,015 pounds would be needed at the maturity of the dollar acceptance. Therefore, the net effect of rising expectations of a depreciation of the dollar should be to increase the outstanding volume of dollar acceptances created for importers and exporters receiving ultimate payment for their trade transactions in currencies expected to appreciate relative to the United States dollar.

When expectations of an appreciation of the United States dollar are rising, the volume of dollar acceptances outstanding should decrease. A numeric example will illustrate this. Assume that a transaction can be financed with dollar acceptances at 6 per cent per annum (including the service fee) and that the only alternative is sterling acceptances at 8 per cent per annum. Assume further that importers and exporters expect the dollar to appreciate by 5 per cent per annum within the next three months. Finally, assume that the three-month forward premium of the dollar is only 2 per cent due to the central banks' efforts to defend the existing rates of exchange.

Under these circumstances, importers and exporters receiving payment in pounds will find the cost of sterling and dollar acceptance financing to be 8 per cent on an annual basis if they cover their exchange rate risk. If 1,000 pounds is borrowed to finance a trade transaction lasting three months and with the above listed assumptions, 1,020 pounds would be paid by the borrower when the acceptance matured if a sterling acceptance is used. If the transaction is financed by a dollar acceptance and the current spot rate for the pound is \$2.50, then \$2,500 would be borrowed and \$2,537.50 paid at maturity. Since the actual three-month forward premium of the dollar in terms of the pound is 2 per cent on an annual basis, the quoted forward rate of the pound is \$2.4875 which allows coverage of the dollar acceptance for 1,020 pounds. Therefore, the cost of sterling and dollar acceptance financing are the same.

Importers and exporters receiving final payment in United States dollars will be motivated to seek sterling acceptance financing and not cover their exchange rate risk even though usual methods of calculating

the cost differential between these alternate sources of financing indicate a 6 per cent cost from both sterling and dollar acceptances (assuming exchange rate risk coverage). The reason for the preference is that the effective cost of sterling acceptance financing would be only 4 per cent on an annual basis if the expectations about the appreciation of the dollar come true, and if they do not cover their exchange rate risk (i.e., 8 per cent interest cost minus 4 per cent appreciation of the dollar relative to the pound). If \$1,000 is borrowed to finance a three-month trade transactions and with the above listed assumptions, \$1,015 would be paid by the borrower when the acceptance matured if a dollar acceptance is used. If the transaction is financed by a sterling acceptance and with a current spot rate of the pound of \$2.50, then 400 pounds would be borrowed and 408 pounds would be paid at maturity. If the dollar appreciates by 4 per cent on an annual basis during the three months the sterling acceptance is outstanding, only \$1,010 would be needed at the maturity of the sterling acceptance. The net effect of the rising expectations of an appreciation of the dollar, therefore, should be a decreased volume of dollar acceptances.

The following two factors are often sighted as being influential in forming the expectations of foreign exchange speculators about depreciation or appreciation of the United States dollar: changes in international reserves held by the United States and the net liquidity balance of payments of the United States.¹⁸ As each of these becomes

¹⁸Warren L. Smith, "The Present System and Its Defects," International Monetary System (New York: Prentice Hall, 1969), p. 16.

more negative (i.e., as the international reserve loss of the United States grows and as the deficit of the United States balance of payments increases) expectations of depreciation of the dollar should increase and, therefore, increase the volume of acceptances outstanding. As each of these becomes more positive, expectations of appreciation of the dollar should increase and result in a decreasing volume of acceptances outstanding. Evidence illustrating the strength of the relationship between these measures and the volume of bankers' acceptances outstanding will be given in Chapter V.

International Access of Borrowers and Lenders

The dollar bankers' acceptance market is international in scope as indicated by the number of foreign investors and the proportion of acceptances created for residents of the various regions of the world. Any factor promoting the access of borrowers and lenders to this market should increase the volume of dollar bankers' acceptances outstanding. Several trends in international trade and finance in the last two decades have improved the access of borrowers and lenders to this market. Some of these are removal or reduction of foreign exchange restrictions in many countries, growth of United States dollar balances held by foreigners, and the growth of an international point of view among lenders and borrowers.¹⁹

¹⁹G.W. Woodworth, The Money Market and Monetary Management (New York: Harper and Row, 1965), p.124.

The removal of exchange restrictions should increase international trade and permit greater freedom of its financing. Either of these should increase the volume of dollar bankers' acceptance financing. The removal of restrictions allows borrowers and lenders easier access to alternative international financial markets. The increased access to all financial markets would facilitate the flow of funds between markets. This would be reflected in a growing sensitivity of acceptance volume to cost differentials between dollar acceptances and alternative sources of financing trade not denominated in United States dollars.

The growth of United States dollar balances held by foreign institutions, corporations, and individuals should increase the volume of dollar bankers' acceptances outstanding since any financial market with instruments denominated in dollars, such as the dollar acceptance market, would be looked upon favorably by foreign investors with large United States dollar balances.²⁰ This likely influence would be incorporated by the cost differentials between alternate financing methods since this influence deals with the supply of funds to the dollar acceptance market.

Another trend which has probably had an influence in the dollar acceptance market is the development of an international point of view of borrowers and lenders. The growth and expansion of the multi-national corporation is a factor in this trend. It has been accompanied not only by the recognition of borrowers and lenders of their ability to use international, as opposed to only national financial markets, but by the necessity to be conversant with trends and developments in all of the markets which are viable alternatives as sources of financing. This increased

²⁰See discussion of this point on page 44 of Chapter II.

awareness and sophistication by a number of lenders and borrowers in this market should be reflected in the cost differentials that exist between this market and other alternative methods of financing trade and contributes to the growing sensitivity of the volume of dollar bankers' acceptances outstanding to forces outside the United States.

Availability of Credit Information

Bankers' acceptance financing has a major advantage when little knowledge is possessed by importers and exporters about their trading partners. The trading partners may have little knowledge about each other, but a transaction can still be financed since a well-known and respected creating bank places itself unconditionally liable for the payment of the acceptance. A change in the level of knowledge about trading partners would logically have an effect on the volume of acceptances outstanding. The availability of information on commercial enterprise in the last two decades has probably increased which should have a dampening effect on the growth of the dollar acceptance market. This factor cannot be adequately documented (i.e., a data series cannot be constructed to reflect growth in the availability of credit information on an international scale) since little knowledge, except for general trends, exists about the quality or quantity of credit information distributed internationally.

Hypothesis of the Dissertation

The preliminary empirical evidence presented in this chapter suggests that the first three factors discussed should be included in our model of the determinants of the volume in the bankers acceptance market. Expectations of changes in exchange rates will also be included due to the

logical basis of this factor and because of the importance in our present international monetary system of discovering if expected changes in exchange rates affect the volume of dollar acceptances. The effects on acceptance volume of our fifth hypothesized determinant (international access of borrowers and lenders) are incorporated in the first two factors discussed, and, therefore, need not be tested separately. Our last hypothesized determinant lacks a data series to measure its changes in magnitude; therefore, it cannot be included in the model.

The hypothesis we propose to test is: The volume of United States dollar bankers' acceptances outstanding will vary directly with (1) the level of international trade, (2) relative advantages in the cost of financing with dollar acceptances, (3) the degree of restriction in United States monetary policy, and (4) expectations of depreciation of the dollar; and will vary inversely with expectations of appreciation of the dollar.

CHAPTER IV
MODEL CONSTRUCTION

We can now proceed with the construction of a model of the hypothesis. This chapter will consist of: (1) specification of the model's structure, and (2) derivation of certain data series.

Specification of the Model's Structure

The model used is a linear model, which assumes that the effect on the dependent variable of changes in two or more of the independent variables can be expressed as a simple sum of the effects that would occur if each independent variable changed with the others remaining constant. If the effect on the dependent variable of the same magnitude of change in an independent variable differed with the level of the other independent variables, then the effect would partially be due to interaction between the independent variables.

Notation Used
in the Model

t : a subscription referring to a specific quarter within the time period January 1955 through December 1973.

i : subscript referring to one of our five regions. When $i=1$, United States; $i=2$, developed nations excluding the United States and Japan; $i=3$, Japan; $i=4$, Latin America; $i=5$, less-developed nations excluding Latin America.

- $B_{t,i}$: Volume of United States dollar bankers' acceptances outstanding at the end of time period t that have been created for residents of region i .¹
- $S_{t,i}$: Value of imports of region i during time period t expressed in United States dollars.
- $S'_{t,i}$: Value of imports and exports of region i during period t expressed in United States dollars.
- G_t : Average cost (expressed on an annual percentage basis) during the middle month of time period t of financing trade with 90 day United States dollar bankers' acceptances.
- N_t : Cost differential (expressed on an annual percentage basis) in the financing of international trade obtained by subtracting G_t from the cost at the mid-point of time period t of prime direct short term loans from New York City banks.²
- E_t : Cost differential (expressed on an annual percentage basis) in the financing of international trade obtained by subtracting G_t from the cost at the mid-point of time period t of prime direct short-term loans in the London euro-dollar market.

¹Data and data sources are presented in the appendix. This model is constructed to test quarterly data. A monthly model was also tested but the results were not as significant as the results of the quarterly model.

²All financing costs should be averages for time period t . However, costs of financing were not available in this form, and an average could not be accurately constructed from the available statistical series.

- Q_t : Cost differential (expressed on an annual percentage basis) in the financing of international trade obtained by subtracting G_t from the cost at the mid-point of time period t of 90 day prime sterling bankers' acceptances.
- D_t : Cost differential (expressed on an annual percentage basis) in the financing of international trade obtained by subtracting G_t from the average cost for the middle month of time period t of direct short-term loans from Japanese banks through import bills.
- L_t : The most favorable cost differential for creation of United States dollar bankers' acceptances, of the differentials N_t , E_t , and Q_t , divided by G_t .
- M_t : The most favorable cost differential for creation of United States dollar bankers' acceptances, of the differentials N_t , E_t , Q_t , and D_t , divided by G_t .
- R_t : Change during time period t in the volume of international reserves (gold, foreign exchange, and special drawing rights) held by the United States.
- P_t : Net liquidity balance of payments (quarterly basis) of the United States during time period t .
- H_t : The average volume of free reserves of Federal Reserve member banks during time period t .
- U_t : Random disturbance or error term during time period t .
- $f_{z,i}$: The functional relationship for region i between variable z ($z = S_i, L, M, R, P, H$) and $B_{t,i}$.
- A_i : Constant term for region i .

Structure of
the Model

The model's structure is based, for the most part, on material presented in Chapter I, II, and III. The model includes the following variables which are not inferred from Chapters I, II, and III: (a) L_t and M_t , and (b) independent variables lagged one quarter.

To reduce the number of independent variables in our model, our measures of cost differentials in the financing of trade, L_t and M_t , only include the most favorable cost differential for the creation of dollar bankers' acceptances of N_t , E_t , Q_t , and D_t . During the time period of the study interest rates have generally risen. If the magnitude of the differentials N_t , E_t , Q_t , and D_t was the same in 1955 and in 1973, its significance for influencing financing decisions would be understated for 1955 and overstated for 1973 because of the general increase in the level of interest rates. To adjust for changes in the overall level of interest rates, we need only to divide by G_t .³

The volume of bankers' acceptances outstanding at the end of quarter t should be dependent on the values of the independent variables during the previous quarter, $t-1$, as well as on their values during quarter t . This relationship should exist since bankers' acceptances at time of creation can have a maturity of up to six months. This means that some of the acceptances created during period $t-1$ should be outstanding at the end of period t . To take this factor into account our model has for each independent variable value at time period t , a

³A model using absolute instead of relative cost differentials was tried and the results are summarized in Chapter V., p. 95.

corresponding value lagged one quarter (i.e. $t-1$ value).

The model is as follows:

$$B_{t,i} = A_i + f_{S_{t,i}} S_{t,i} + f_{S_{t-1,i}} S_{t-1,i} + f_{L_{t,i}} L_t + f_{L_{t-1,i}} L_{t-1} \\ - f_{R_{t,i}} R_t - f_{R_{t-1,i}} R_{t-1} - f_{P_{t,i}} P_t - f_{P_{t-1,i}} P_{t-1} \\ - f_{H_{t,i}} H_t - f_{H_{t-1,i}} H_{t-1} + U_t \\ i=1,2,5$$

$$B_{t,i} = A_i + f_{S_{t,i}} S_{t,i} + f_{S_{t-1,i}} S_{t-1,i} + f_{M_{t,i}} M_t + f_{M_{t-1,i}} M_{t-1} \\ - f_{R_{t,i}} R_t - f_{R_{t-1,i}} R_{t-1} - f_{P_{t,i}} P_t - f_{P_{t-1,i}} P_{t-1} \\ - f_{H_{t,i}} H_t - f_{H_{t-1,i}} H_{t-1} + U_t \\ i=3$$

$$B_{t,i} = A_i + f_{S'_{t,i}} S'_{t,i} + f_{S'_{t-1,i}} S'_{t-1,i} + f_{L_{t,i}} L_t \\ + f_{L_{t-1,i}} L_{t-1} - f_{R_{t,i}} R_t - f_{R_{t-1,i}} R_{t-1} \\ - f_{P_{t,i}} P_t - f_{P_{t-1,i}} P_{t-1} - f_{H_{t,i}} H_t - f_{H_{t-1,i}} H_{t-1} + U_t \\ i=4$$

Derivation of the Data Series

Some of the data series were not available in the form needed for our analysis. This necessitated conversion of the data. Two major types of conversions were made: converting data series from a monthly basis to a quarterly basis, and the construction of L_t and M_t from existing data series.

All data series on a monthly basis were converted to a quarterly basis since our model is formulated on a quarterly basis. These conversions were made by summing for each quarter the monthly values of

the affected data series. The data series affected by these conversions are the volume of imports of the United States and Japan, change in the volume of international reserves held by the United States, and the average volume of free reserves of Federal Reserve member banks. In the latter case, the quarterly figure derived was divided by three since we desire a measure of the quarterly average volume of free reserves.

The first component of L_t and M_t is the differential between the cost of financing with dollar bankers' acceptances and with direct loans from New York banks. The first step in calculating the differential in the cost of financing with dollar bankers' acceptances and with short-term direct loans was to combine the average rate on prime bankers' acceptances, three-month maturity, for the middle month of the quarter and the acceptance fee charged by United States accepting banks, which is 1.5 percent per annum for prime risks. This sum was then subtracted from the rate that prevailed on short-term loans from New York City banks at the mid-point of the quarter.⁴ The cost differential for financing with dollar bankers' acceptances and direct short-term loans in the London euro-dollar market was created by combining the average prime rate, for the middle month of the quarter, of bankers' acceptances (three-month maturity) with the service fee for acceptance financing, and subtracting this sum from the short-term London euro-dollar deposit rate that existed at the mid-point of the quarter, adjusted by the service fee for prime direct short-term euro-dollar loans.⁵

⁴ Cooper, "Bankers' Acceptances," p. 131.

⁵ Obtained from personal correspondence with officials of the Bank of England.

The differential in the cost of financing with United States dollar bankers' acceptances and sterling bankers' acceptances is derived by subtracting the average rate prevailing in the middle month of the quarter on 90 day prime bankers' acceptances, adjusted by the addition of the 1.5 percent service charge, from the costs of financing that existed with sterling bankers' acceptances at the mid-point of the quarter. The cost of financing with sterling acceptances includes (1) the annual rate on prime sterling bankers' acceptances, 90 day maturity, (2) the standard service fee, (3) the tax charge of .2 percent, and (4) the three-month forward discount or premium of the pound sterling relative to the United States dollar.⁶

The differential for a given quarter between dollar bankers' acceptances and direct short-term loans from Japanese banks at the import bill rate was calculated by subtracting from the average short-term Japanese import bill rate prevailing in the middle month of the quarter, the sum of the average prime rate existing in the middle month of the quarter on 90 day United States dollar bankers' acceptances and the service charge of 1.5 percent. This approach is required for years before 1971 because a statistical series of the forward premium (or discount) of the Japanese yen relative to the United States dollar was not available until 1971. Significant bias should not be introduced through this technique since revaluation of the yen relative to the dollar was considered unlikely during this period.⁷ For quarters in the years 1971, 1972, and 1973 the differential was calculated by

⁶ loc. cit. Obtained from personal correspondence

⁷ This statement is based on personal correspondence with officials of the Bank of Japan.

subtracting the average rate of dollar acceptance financing from the average Japanese import bill rate adjusted appropriately for the premium (or discount) of the Japanese yen relative to the United States dollar.

CHAPTER V
RESULTS AND IMPLICATIONS
OF OUR STATISTICAL
ANALYSIS

In this chapter we will reformulate the hypothesis to reflect the data series used to measure the variables. We will then present our statistical analysis and a discussion of its implications.

Reformulation of the Hypothesis

The hypothesis states that the volume of dollar bankers' acceptances outstanding varies directly with changes in the volume of international trade. Imports are used as our measure of international trade in all regions except in Latin America where imports and exports are used because of the widespread use of pre-export financing in Latin America. The hypothesis reformulated to reflect this states that as a sector's volume of imports (and exports in the case of Latin America), $S_{t,i}$, changes, the volume of bankers' acceptances outstanding created for its residents will change in the same direction.

We have hypothesized that the volume of bankers' acceptances outstanding should vary directly with favorable cost differentials for dollar bankers' acceptances relative to alternative methods of financing. We have measured the cost differentials, L_t and M_t , by subtracting the cost of financing with dollar bankers' acceptances from the cost of financing with alternative sources. Thus, positive values of L_t and M_t indicate favorable conditions for the creation of

dollar bankers' acceptances. Therefore, the reformulated hypothesis states that with positive values of L_t and M_t , the volume of dollar bankers' acceptances outstanding, $B_{t,i}$, will increase.

The hypothesis states that the volume of bankers' acceptances outstanding created for each region will increase as monetary restraint in the United States increases. Negative values of H_t (the average volume of free reserves during quarter t) indicate monetary restraint. The reformulated hypothesis states that the volume of bankers' acceptances outstanding will vary inversely with the volume of free reserves (i.e., a negative relationship is expected between H_t and $B_{t,i}$ in all sectors).

Our hypothesis states that the volume of bankers' acceptances outstanding will vary directly with expectations of a depreciation of the United States dollar. Since we measure the change in expectations of a depreciation by changes in international reserves held by the United States (R_t) and by changes in the net liquidity balance of payments of the United States (P_t), and since decreases in either of these measures increase the expectations of a depreciation of the United States dollar, we expect a negative relationship of R_t and P_t to $B_{t,i}$.

Initial Statistical Analysis

Multivariate regression analysis was applied to our quarterly model for the 1955-1973 period, and the results are summarized in Table 7. Standard 't' tests were used to test for the significance of the coef-

TABLE 7
Results of Regression Analysis (Quarterly Basis, 1955 Through 1973)

Variable	United States	Japan	Developed Nations Excluding US & Japan	Latin America	Less-Developed Nations Excluding Latin America
A_i	-629.* (-3.58)	881.* (2.377)	93.46* (2.11)	772.* (4.30)	-361.* (-12.9)
$S_{t,i}$	.153* (4.10)	.2438* (3.82)	-.0014 (-.298)	-.012* (-2.69)	.0133* (4.23)
$S_{t-1,i}$	.155* (3.76)	-.074 (-1.025)	.0085 (1.72)	.0051 (.4588)	.0606* (14.13)
L_t (M_t in Japan)	210. (.643)	-41.01 (-.648)	.94 (1.085)	97. (1.34)	105. (1.35)
L_{t-1} (M_t in Japan)	225. (.6959)	-177.* (-2.79)	68. (.383)	113. (1.57)	-5.28 (-.068)
R_t	-.11 (-2.119)	-.059 (-1.65)	-.040 (-1.38)	-.011 (-.95)	.012 (.944)
R_{t-1}	-.026 (-.501)	-.085 (-2.39)	.027 (.900)	.010 (.87)	-.0092 (-.70)
P_t	.00075 (.124)	-.002984 (-.71)	.00096 (.2742)	-.0005 (-.397)	-.00257 (-1.67)
P_{t-1}	.0013 (.23)	-.0054 (-1.35)	.0017 (.5140)	-.00039 (-.301)	-.0022 (-1.52)
H_t	.283* (2.16)	.163 (1.83)	-.048 (-.722)	-.027 (-.905)	.060 (2.00)
H_{t-1}	-.1296 (-.9783)	.0892 (.8766)	.0822 (1.23)	-.027 (-.73)	.011 (.387)
Coefficient of determination	.9764	.9617	.5944	.9478	.9597
Durbin-Watson Statistic	1.82	2.04	1.97	2.23	1.813

Note: First entry in each cell is regression coefficient; second is 't' test result.

*: Significant to the .05 level of significance, two-tail test.

ficients derived from the regression analysis.¹ As indicated in Table 7, L_{t-1} , R_{t-1} , P_{t-1} , and H_{t-1} are not statistically significant in any sector at the .05 level of significance (the sole exception is R_{t-1} in the Japanese sector). These variables were eliminated (except R_{t-1} in the Japanese sector) from the model.

A suggested reason for the general non-significance of L_{t-1} , R_{t-1} , P_{t-1} , and H_{t-1} is that the impact of these variables is through the actual cost of financing or the expected changes in the costs or availability of financing. The impact of either of these should be on the current volume of bankers' acceptances created. Therefore, the main impact of $t-1$ values of these independent variables should be on the $t-1$ volume of bankers' acceptances outstanding. While some of the acceptances created due to period $t-1$ values of these variables will be outstanding during period t , their relative importance will be reduced due to: (1) the volume of period t 's new creations and (2) maturing of acceptances created during period $t-1$.

Statistical Analysis Using
the Revised Quarterly Model

The regression analysis as applied to our quarterly model as revised with the deletion of L_{t-1} , R_{t-1} , P_{t-1} , and H_{t-1} (except for R_{t-1} in

¹A two stage iterative process was used to overcome autocorrelation difficulties. For an explanation of this process refer to D. Cochrane and G.H. Orcutt, "Application of Least Square Regression to Relationships Containing Autocorrelated Error Terms," JASA (Washington, D.C.: American Statistics Association, March 1949), pp. 305-310. The likelihood of autocorrelation was constantly monitored through the use of the Durbin-Watson statistic, but with the iterative process the Durbin-Watson statistic was not significant (therefore, not indicating autocorrelation) at the .05 level of significance.

the Japanese sector) is summarized in Table 8. These results, along with further analysis, are used to test each part of our hypothesis.

International Trade

Our hypothesis states that an increasing volume of international trade should be accompanied by an increase in the volume of acceptances outstanding; i.e., the sign of the coefficients of $S_{t,i}$ and $S_{t-1,i}$ should be positive. Significant positive coefficients were found for $S_{t,i}$ in the United States: .1468(4.11), Japan: .2330(3.79), and the less-developed countries excluding Latin America: .014(4.73).² These support our hypothesis. Further support to the hypothesis is given by significant positive coefficients for $S_{t-1,i}$ in the United States: .17(4.55), less-developed countries excluding Latin America: .059(14.86), and the developed nations excluding the United States and Japan: .011(2.19).

The significant positive coefficients for $S_{t,i}$ and $S_{t-1,i}$ for the United States and for the less-developed nations excluding Latin America suggest that at creation the maturities of the acceptances created for these sectors are skewed towards the longest allowed maturities (i.e., skewed towards six months in maturity). The volume of acceptances outstanding at the end of time period t is significantly affected by the value of international trade for periods t and $t-1$. The statistically non-significant coefficient of $S_{t-1,i}$ for Japan, while its $S_{t,i}$ coefficient is statistically significant, suggests that the maturity of creations for this sector may be skewed towards the shorter maturities.

²Corresponding 't' test results are shown in parenthesis beside the coefficients.

TABLE 8
Results of Regression Analysis Applied to Revised Model
(Quarterly Basis, 1955 Through 1973)

Variable	United States	Japan	Developed Nations Excluding U.S. and Japan	Latin America	Less-Developed Nations Excluding Latin America
A_i	-661.* (-3.70)	919.* (2.85)	84.88* (2.32)	832.* (4.17)	-356.* (-12.92)
$S_{t,i}$	.1468* (4.11)	.2330* (3.79)	-.004 (-.809)	-.012* (-2.64)	.014* (4.73)
$S_{t-1,i}$	.170* (4.55)	-.8505 (-1.11)	.011* (2.19)	.0044 (.407)	.059* (14.86)
L_t (M_t in Japan)	249. (.79)	-22.81 (-.46)	1.82 (1.14)	80.27 (1.13)	105.4 (1.44)
M_{t-1}	N.I.	-144.77* (-2.51)	N.I.	N.I.	N.I.
R_t	-.0907 (-1.92)	-.0675 (-1.90)	-.044 (-1.61)	-.012 (-1.14)	.0109 (.821)
R_{t-1}	N.I.	-.0855* (-2.38)	N.I.	N.I.	N.I.
P_t	.0024 (.48)	-.0011 (-.33)	-.0014 (-.428)	-.00008 (-.076)	-.0019 (-1.43)
H_t	.233* (2.11)	.169* (2.02)	.02169 (.533)	.031 (1.15)	.066* (3.30)
Coefficient of determination	.9758	.9604	.5806	.9432	.9576
Durbin-Watson Statistic	1.76	1.98	1.95	2.23	1.81

Note: First entry in each cell is regression coefficient; second is 't' test result.

*: Significant to the .05 level of significance, two-tail test.

NI: Not included.

For the developed countries, excluding the United States and Japan, $S_{t-1,i}$ has a significant positive coefficient: .01(2.19), while its $S_{t,i}$ coefficient is negative and not significant: -.004(-.809). A possible explanation of this lag effect of S_{t-i} is that acceptances are used in this sector mainly for the storage of imports, not for shipment of imports. If the shipment of a sector's $t-1$ imports, $S_{t-1,i}$ was not significantly financed by dollar acceptances, but the storage of these imports during period t was, then $S_{t-1,i}$ should not be statistically significant to the volume of acceptances outstanding at the end of period $t-1$ since acceptances were not created during $t-1$ to finance these imports. If acceptances are created during period t to finance the storage of the imports which were shipped during $t-1$, then S_{t-1} would affect the volume of bankers' acceptances outstanding with a one period lag (i.e., S_{t-i} would not be statistically significant to $B_{t,i}$ but $S_{t-1,i}$ would be). This explanation of the lag effect cannot be tested using the available data.

Latin America has a significant negative coefficient for $S_{t,i}$: -.012(-2.64). A possible cause of this negative coefficient is the unique use in this sector of dollar bankers' acceptances to create dollar exchange combined with our use of imports and exports as the relevant measure of international trade for this sector.³ Dollar exchange acceptances are created to finance a portion of this region's imports during its low export season; exchange created during the high export season is used to repay the maturing dollar exchange acceptances.⁴

³Exports are included as a component of relevant international trade since pre-export financing is more common in the Latin American sector than in the other sectors.

⁴For a more complete explanation of dollar exchange acceptances, see pp. 36-37.

Therefore, we would expect that as exports increase the volume of dollar exchange acceptances decreases. This negative correlation may have been extracted by our regression techniques since $S'_{t,i}$ contained both imports and exports.

To test for this possibility, the regression analysis was repeated but with exports deleted from S'_{t-i} .⁵ The results were as follows:

Regression Coefficient ('t' test results)	A i	S t,i	S t-1,i	L t	R t	P t	H t
	859.29*	-0.0057	+0.0136*	75.4	.002	-.0005	.072
	(4.67)	(-.710)	(2.561)	(1.01)	(.233)	(-.401)	(2.53)

Coefficient of Determination: .9375

Durbin-Watson Statistic: 2.09

*Significant to the .05 level of significance, two tail test.

The above is consistent with our hypothesis, since $S'_{t-1,i}$ has a significant positive coefficient, and supports the concept that exports when combined with imports caused the previous negative significant coefficient of $S'_{t,i}$.⁶ The significance of $S'_{t-1,i}$ and the non-significance of $S'_{t,i}$ in the above equation indicate another possible case of acceptances being used mainly for storage of imports.

The regression analysis supports our hypothesis that the volume of acceptances varies directly with the volume of international trade in three of our sectors (i.e., United States, Japan, and the less-developed nations excluding Latin America). In two sectors, Latin America and the developed nations excluding the United States and Japan, the analysis indicates that the volume of acceptances varies directly with

⁵Regression analysis was applied for this sector using imports and exports as separate measures of international trade. The resulting equation had a negative sign for exports but no significant coefficients.

⁶Subsequently, in all regressions $S'_{t,i}$ for this sector will contain only the volume of imports.

the volume of imports of the preceding quarter ($t-1$). This also supports our hypothesis, especially if it is assumed that in these sectors acceptances are used primarily to finance the storage of imports. Our analysis infers a negative relationship between Latin American exports and the volume of bankers' acceptances outstanding. Possible causes of this are (1) the seasonal nature of imports and/or exports, and (2) the negative correlation between exports and the creation of dollar exchange acceptances. Therefore, our findings do not support a significant positive relationship between exports and acceptance volume in the only sector where such a relationship was hypothesized.

Cost Differentials Between
Alternative Methods of
Financing Trade

According to our hypothesis, we expect an increase in the volume of acceptances outstanding as acceptance financing becomes less expensive relative to other sources of financing; i.e., that the sign of the coefficients of L_t and M_t will be positive. All signs in Table 8, and in the revised model of the Latin American sector, for L_t are positive (United States: 249.(.79), developed nations excluding the United States and Japan: 1.82(1.14), Latin America: 80.27(1.13), and the less-developed nations excluding Latin America: 105.4(1.44)), but none of the coefficients are significant.⁷ The positive signs of these coefficients are consistent with the hypothesis, but the non-significance of the coefficients does not give support to our

⁷ L_t is not used in the Japanese sector since it does not contain costs of domestic loans to Japanese importers and exporters as does M_t .

hypothesized positive relationship between L_t and $B_{t,i}$. In order to test this part of our hypothesis further, the time span was broken into two subperiods. The first subperiod consists of periods for which L_t falls between .05 and -.05. The second subperiod consists of the remaining periods.⁸ The latter subperiod consists of twenty-eight quarters.⁹ Since during this second subperiod the cost differentials are relatively large, the effect of L_t on $B_{t,i}$ should be stronger. In addition, dividing the data into subperiods may decrease the degree of collinearity in our data series.¹⁰

Regression analysis for the above subperiods was applied to each sector using L_t . The results are summarized in Table 9. The coefficients of L_t do not support the hypothesized positive relationship between L_t and $B_{t,i}$ since these coefficients are positive and negative and none are significant.¹¹ Significant coefficients are observed in

⁸This second subperiod contains the following periods (periods of less than two quarters are not included): fourth quarter 1956 through third quarter 1958, third quarter 1960 through fourth quarter 1961, third quarter 1963 through second quarter 1964, first quarter 1969 through fourth quarter 1969, and fourth quarter 1970 through first quarter 1972.

⁹If the data is divided into the two subperiods according to whether L_t is greater than or equal to .10 or less than or equal to -.10, the sample with periods of extreme values of L_t contains only 18 quarters. This number of observations is not considered sufficient to be statistically significant.

¹⁰For a description of collinearity and its effects on regression analysis, consult: Donald Farrar and Robert Glauber, "Multicollinearity in Regression Analysis: The Problem Revisited," Readings in Econometric Theory (New York: McGraw Hill, 1968), pp. 202-212.

¹¹The regressions in Tables 8 and 9 were performed without adjusting our measures of the cost differentials for changes in the general level of interest rates. The results from these additional regressions were similar to those in Tables 8 and 9.

TABLE 9
Results of Regression Analysis Applied to Various Sectors of Revised Model
for Periods of Extreme and Non-Extreme Values of L_t

Variable	Extreme Values of L_t : ($L_t \leq -.05$; $L_t \geq .05$)				Non-Extreme Values of L_t : ($-.05 < L_t < .05$)			
	United States	Developed Nations Excluding U.S. and Japan	Latin America	Less-Developed Nations Excluding Latin America	United States	Developed Nations Excluding U.S. and Japan	Latin America	Less-Developed Nations Excluding Latin America
A_i	-695.* (-5.131)	56.75 (.849)	703.80* (5.91)	-430.* (-25.71)	-699.* (-3.040)	66.59* (3.10)	964.25* (2.52)	-307.* (-14.74)
$S_{t,i}$	.1192* (4.22)	-.029* (-2.37)	-.00613 (-.816)	.115* (4.90)	.2412* (3.10)	.003 (.707)	-.0028 (-.746)	.0091* (3.44)
$S_{t-1,i}$	.2513* (8.75)	.038* (2.98)	.00717 (.748)	-.0299 (-1.18)	.068 (.764)	.0066 (1.57)	-.000052 (-.00137)	.0527* (15.16)
L_t	-405. (-1.22)	-22.94 (-.096)	-135.63 (-1.20)	9.46 (.203)	-485. (-7.22)	-22.84 (-.092)	56.36 (.348)	103.75 (.731)
R_t	-.2875* (-5.10)	-.150* (-2.39)	-.0022 (-.099)	-.0308* (-2.25)	-.0054 (-.086)	-.0417 (-1.92)	.0101 (.654)	-.018 (-1.27)
P_t	.0030 (.9696)	-.00024 (-.0602)	.00032 (.318)	-.00048 (-.5061)	.0525 (1.76)	.0401* (5.04)	-.0114 (-1.57)	-.027* (-5.53)
H_t	.07656 (.733)	-.1287 (-1.82)	.0086 (.176)	.0957* (6.83)	.320 (1.77)	.1477* (5.18)	.0632 (1.49)	.0199 (1.10)
Coefficient of determination	.9945	.7584	.9757	.9907	.9757	.8119	.9292	.9736
Durbin-Watson Statistic	1.49	2.10	2.65	2.78	2.22	1.96	1.98	2.18

NOTE: First entry in each cell is regression coefficient; second is 't' test result.
*: Significant to the .05 level of significance, two-tail test.

Table 9 for variables which previously had non-significant coefficients (R_t in the United States: $-.2875(-5.10)$, the developed nations excluding the United States and Japan: $-.150(-2.39)$, and the less-developed nations excluding Latin America: $-.0308(-2.25)$; P_t in the developed countries excluding the United States and Japan: $.0401(5.04)$, and the less-developed countries excluding Latin America: $-.027(-5.53)$; and H_t in the developed countries excluding the United States and Japan: $.1477(5.18)$). The breaking of the collinearity by use of subperiods is probably the basis for these new significant coefficients. The implications of these new significant coefficients will be examined as each part of the hypothesis is discussed.

The lack of support of the hypothesized positive relationship between costs of financing and the volume of bankers' acceptances may be related to several deficiencies in L_t . First, L_t is not the quarterly average of the cost differential; the quarterly value of L_t is the best differential from several differentials which in each case are not average differentials for the quarter. Therefore, L_t may not reflect the size of the average quarterly cost differential. A second deficiency is that L_t may not include the appropriate alternative methods of financing to dollar bankers' acceptances. This would be more likely for those sectors for which L_t does not contain a measure of alternative domestic sources of financing (i.e., Latin America, developed nations excluding the United States and Japan, and the less-developed nations excluding Latin America).

Even if L_t measured accurately the average quarterly cost differential, it might not reflect the impact of the size of daily or even hourly variations in the cost differentials which could influence the amount of

bankers' acceptances created. Even if L_t did reflect the day to day cost differential for a particular quarter, part of L_t 's effects on the volume of acceptances created might not be reflected in that particular quarter's ending volume of acceptances outstanding. The impact of relative cost changes during a quarter are reflected in the ending quarter's volume of acceptances only through the volume of acceptances created during that quarter. Creations during a quarter may be dwarfed by the aggregate volume outstanding at the end of the quarter if new creations consisted largely of short maturity acceptances (i.e., less than three months) and if the aggregate contained a substantial volume carried over from the previous quarter.

To accurately test this part of the hypothesis, we should have data of daily differentials of all relevant interest costs and daily creations of dollar bankers' acceptances for each sector. These data are not available. It was necessary, therefore, to test the hypothesis with the data presented previously which may be responsible for the inconclusive results of the relationship between L_t and $B_{t,i}$. In summary, our analysis does not support the hypothesized relationship between L_t and $B_{t,i}$.

In Table 8 for the Japanese sector, M_t 's coefficient (M_t : cost differential in the Japanese sector) is not significant and has a negative value: $-22.81(-.461)$; M_{t-1} 's coefficient is significant and also has a negative value: $-144.77(-2.51)$. The coefficient of M_{t-1} does not support the hypothesis that dollar acceptance volume increases as acceptances become a less expensive source of financing. Our discussion of the data problems related to L_t also applies with respect to M_t . An additional problem is introduced with M_t in that the forward

premium (or discount) of the Japanese yen relative to the dollar for the years 1955 through 1970 is not available. Due to the data deficiencies of M_t , the negative significant coefficient of M_{t-1} does not provide the basis for a firm refutation of the hypothesis.

Credit Availability

According to our hypothesis, that the volume of bankers' acceptances increases as credit availability decreases, the sign of the coefficients for H_t (the average volume of free reserves during quarter t) should be negative.¹² The coefficients of H_t as shown in Table 8 are positive for all sectors and are significant for all sectors except the developed nations excluding the United States and Japan.¹³ These coefficients do not support our hypothesis. Support to our hypothesis is also not given by the significant positive coefficients of H_t in Table 9 (with the use of periods of non-extreme values of L_t , Japan's H_t coefficient is: .147(5.18) while the less-developed countries excluding Latin America have: .095(6.83)).

To test if the positive signs of H_t in Tables 8 and 9 are caused by the sample including the entire time span of the study and not exclusively the periods of lessening credit availability, regression analysis was applied to those periods which could be more closely identified with decreasing availability. A particular quarter was included if during

¹²Henceforth, negative values of H_t will be referred to as net borrowed reserves.

¹³The results in Table 8 for the Latin American sector have been replaced with the results obtained when our revised model included only the volume of imports in $S'_{t,i}$.

the quarter the average volume of net borrowed reserves was greater than 250 million dollars (i.e., H_t less than -250 million dollars).¹⁴ This volume of net borrowed reserves was selected for two reasons: the author considered it indicative of monetary restraint, and it provides twenty-five observations which is large enough to be statistically significant. The regressions for all sectors for the periods when net borrowed reserves exceeded 250 million dollars are summarized in Table 10.¹⁵ The coefficients of H_t in Table 10 are positive and negative (three positive and two negative); none are significant. Therefore, this testing does not support the hypothesized relationship between credit availability and the volume of bankers' acceptances outstanding.¹⁶

¹⁴Net borrowed reserves were greater than 250 million dollars during the following 25 quarters (periods of less than two quarters are not included): fourth quarter 1955 through second quarter 1956, second quarter 1957 through fourth quarter 1957, second quarter 1959 through first quarter 1960, second quarter 1966 through fourth quarter 1966, first quarter 1969 through third quarter 1970, and fourth quarter 1972 through fourth quarter 1973.

¹⁵The regression analysis in Table 10 was repeated but with H_t being the average volume of net borrowed reserves during the middle month of the quarter. The results were similar to the results in Table 10. Regression analysis was also applied to periods when the quarterly average volume of net borrowed reserves was greater than 500 million dollars. This sample included only 16 quarters and the results were similar to the results in Table 10. Regression analysis could not be applied to periods when net borrowed reserves exceeded 1000 million dollars since this sample contains only four quarters.

¹⁶If negative values of H_t affect $B_{t,i}$ with a lag, a relationship between H_t and $B_{t,i}$ probably would have been detected by the regression analysis summarized in Table 10 because these regression samples consist of periods of successive quarters varying from three to eight quarters each and values of H_t for successive periods are highly correlated.

TABLE 10
Results of Regression Analysis Applied to Revised
Model for Periods of $H_t < -250$ Million Dollars.

Variable	United States	Japan	Developed Nations Excluding U.S. and Japan	Latin America	Less-Developed Nations Excluding Latin America
A_i	-440.65 (-1.809)	91.46 (.326)	155.01* (2.99)	964.25* (2.52)	-312.00* (-9.58)
$S_{t,i}$	.186 (1.39)	.371* (3.34)	-.0116 (-1.10)	-.0286 (-.746)	.0044 (.889)
$S_{t-1,i}$	.145 (1.13)	.199* (2.23)	.0176 (1.85)	-.000052 (-.0013)	.057* (9.38)
L_t (M_t in Japan)	304.28 (.160)	106. (.574)	778.39 (1.88)	+56.36 (.348)	339. (2.10)
M_{t-1}	N.I.	-22.83 (-.315)	N.I.	N.I.	N.I.
R_t	-.112 (-.63)	-.08534 (-1.80)	-.055 (-1.070)	.010 (.654)	-.066 (-2.10)
R_{t-1}	N.I.	-.0063 (-.137)	N.I.	N.I.	N.I.
P_t	.0284 (.97)	.0011 (.307)	.0467* (3.20)	-.011 (-1.57)	-.024* (-4.09)
H_t	.6145 (1.29)	-.132 (-1.45)	.014 (.091)	.063 (1.49)	-.01863 (-.2857)
Coefficient of determination	.9682	.9940	.7655	.9292	.9782
Durbin-Watson Statistic	.201	2.69	2.59	1.98	3.11

Note: First entry in each cell is regression coefficient; second is 't' test result.

*: Significant to the .05 level of significance, two-tail test.

NI: Not Included.

Expectations of Changes in
the Exchange Rate of the Dollar

According to our hypothesis, we should expect an increase in the volume of bankers' acceptances outstanding as expectations of a depreciation of the dollar increase; i.e., that the signs of the coefficients for R_t will be negative. As indicated in Table 8, the coefficients for R_t are negative except in the less-developed nations excluding Latin America. None of these coefficients are significant (United States: $-.0907(-1.92)$, Japan: $-.0675(-1.90)$, developed countries excluding the United States and Japan: $-.044(-1.61)$, Latin America: $-.012(-1.14)$, and less-developed countries excluding Latin America: $.0109(.871)$). The negative coefficients are consistent with our hypothesis but the non-significance of R_t 's coefficients in Table 8 does not support our hypothesis. The coefficient for R_{t-1} in Table 8 (R_{t-1} is an independent variable only in the Japanese sector) is negative and significant which supports the hypothesis for this sector.

In Table 9 for all sectors included (only the Japanese sector is excluded) the regression coefficients of R_t are negative except for one instance (the exception is a non-significant value of $.0101(.654)$ for the Latin American sector when the subperiod of non-extreme values of L_t is used). The negative coefficients of R_t are, as in Table 8, consistent with our hypothesis; but in Table 9 the negative coefficients, when the subperiod of extreme values of L_t is used, are significant for the United States: $-.2875(-5.10)$, developed countries excluding the United States and Japan: $-.150(-2.39)$, and the less-developed countries excluding Latin America: $-.0308(-2.25)$. This supports our hypothesis in these three sectors.

The coefficients for R_t in Table 8 and 9 for the Latin American sector are not significant and have positive and negative values. This does not support the hypothesized relationship between R_t and $B_{t,i}$ in this sector. In an attempt to solve this situation, the time span of the study was divided into two subperiods. The first being the periods when the values of R_t fall between -250 million dollars and 250 million dollars. The remaining time periods form the second subperiod.¹⁷ A 250 million dollar change in international reserves is used to divide the time span since a quarterly change in international reserves of the United States of at least 250 million dollars may be large enough to cause rising expectations of a change in the exchange rate of the United States dollar, and it provides a sufficiently large number of observations to be statistically significant. A larger change in reserves would reduce the size of the regression sample and its statistical applicability.

The regression analysis applied to the Latin American sector for these subperiods is summarized in Table 11. The new coefficients of R_t are negative (-.001(-.059) with extreme values of R_t and -.00099(-.041) with non-extreme values of R_t), but the 't' test results are extremely low. Our results do not support the hypothesized relationship between R_t and $B_{t,i}$ in this sector.

¹⁷This subperiod contains the following 31 quarters (periods of less than two quarters are not included): first quarter 1957 through second quarter 1957, first quarter 1958 through fourth quarter 1958, third quarter 1960 through first quarter 1961, third quarter 1962 through fourth quarter 1962, fourth quarter 1964 through first quarter 1966, first quarter 1967 through third quarter 1967, third quarter 1968 through fourth quarter 1968, second quarter 1969 through fourth quarter 1970, and second quarter 1971 through third quarter 1971.

TABLE 11
 Results of Regression Analysis Applied to the Latin
 American Sector for Periods of Extreme and
 Non-Extreme Values of R_t

Variable	Extreme Values of R_t : $R_t \leq -250$ million dollars; $R_t \geq 250$ million dollars	Non-Extreme Values of R_t : -250 million dollars $< R_t <$ 250 million dollars
A_t	524.59 (.624)	1170.81* (2.84)
S_{t-i}	-.013 (-1.52)	-.034 (-.598)
$S_{t-1,i}$	.036 (1.13)	-.107 (-.261)
L_t	-58.75 (-.054)	127. (.945)
R_t	-.001 (-.059)	-.00099 (-.041)
P_t	-.0041* (-2.47)	-.0106 (-1.29)
H_t	.226* (3.53)	.0627 (1.28)
Coefficient of Determination	.9554	.9370
Durbin- Watson Statistic	2.40	1.8557

Note: First Entry in each cell is regression coefficient;
 second is 't' test result.

* Significant to the .05 level of significance, two-tail test.

In summary, the hypothesized relationship between R_t and $B_{t,i}$ has been supported in all sectors of our model except Latin America. A significant coefficient for R_t in the Latin America sector may not exist due to this sector's strict regulation of domestic and foreign exchange.¹⁸ This regulation would limit the ability of importers and exporters to take advantage of expected changes in exchange rates. Therefore, in this sector our hypothesized relationship between expectations of changes in the exchange rate of the United States dollar and the volume of dollar acceptances outstanding may not exist.

Our results do not provide as clear a picture of the relationship between P_t and $B_{t,i}$ as found between R_t and $B_{t,i}$. In Table 8, the signs for P_t are negative except in the United States (United States: .0024 (.48), Japan: -.0011(-.33), developed nations excluding the United States and Japan: -.0014(-.428), Latin America: -.00008(-.076), and the less-developed nations excluding Latin America: -.0019(-1.43)). The negative signs are in agreement with our hypothesis that as expectations on depreciation of the dollar increase (i.e., negative values of P_t) the outstanding volume of dollar acceptances will increase. None of the coefficients of P_t are significant in Table 7 which does not support the hypothesized relationship between P_t and $B_{t,i}$.

When the time span is divided into periods of extreme and non-extreme values of L_t , P_t has significant positive and negative coefficients as shown in Table 9. When the regression sample contains only periods with non-extreme values of L_t , the derived coefficient for P_t is negative and significant for the less-developed countries excluding

¹⁸Pick's Currency Yearbook (New York: Pick's Publishing Co., 1973), pp. 17-21.

Latin America. This supports our hypothesis. When only periods of non-extreme values of L_t are used, the coefficient of P_t is positive and significant for the developed countries excluding the United States and Japan. This is opposite of our hypothesized relationship. When the time span is divided on the basis of net borrowed reserves as shown in Table 10, the pattern for the coefficients of P_t is similar to that found in Table 9. When the regression sample only contains periods with extreme values of R_t (Table 11), the resulting coefficient in the Latin American sector for P_t is negative and significant and supports for this sector our hypothesized relationship between P_t and $B_{t,i}$.

To this point our results for the United States and Japanese sectors have not supported the hypothesized relationship between P_t and $B_{t,i}$. In an attempt to resolve this situation, the time span of the study was divided into two subperiods. The first being the quarters in which the values of P_t fall between -750 million dollars and +750 million dollars. The remaining time periods form the second subperiod.¹⁹ Division of the data according to whether during a particular quarter the absolute value of P_t is greater than or equal to 750 million dollars allows a relatively large regression sample (41 quarters) for the subperiod containing relatively large balance of payments flows (in excess of +750 million dollars). If a relationship does exist between P_t and $B_{t,i}$,

¹⁹This subperiod contains the following 41 quarters (periods of less than two quarters are not included): second quarter 1958 through third quarter 1959, first quarter 1960 through fourth quarter 1960, third quarter 1961 through first quarter 1962, third quarter 1962 through second quarter 1963, fourth quarter 1964 through first quarter 1965, third quarter 1967 through fourth quarter 1967, and first quarter 1969 through fourth quarter 1973.

the regression analysis is more likely to detect it with use of the quarters which contain extreme movements in the balance of payments. The regression analysis for these subperiods for the United States and Japan are summarized in Table 12.

For this subperiod analysis, the coefficients for P_t in the Japanese sector are non-significant. One is negative: $-.0007(-.185)$ and the other positive: $.00059(.028)$. These do not support the proposed relationship between P_t and $B_{t,i}$. The United States sector's coefficients for P_t in Table 11 are negative: $-.0056(-.1961)$ and positive: $.0047(2.37)$. Use of periods with non-extreme values of P_t yields a significant positive coefficient for P_t : $.0047(2.37)$. This is opposite of the hypothesized sign of P_t and is similar to the results found for the developed countries excluding the United States and Japan.

The resulting significant coefficients of P_t are not consistent. Two are positive (United States and the developed nations excluding the United States and Japan) and two are negative (Latin American and the less-developed countries excluding Latin America). These coefficients neither clearly support nor refute the hypothesized relationship between P_t and $B_{t,i}$.

TABLE 12
Results of Regression Analysis Applied to United States and
Japanese Sectors for Periods of Extreme and Non-Extreme
Values of P_t

Variable	Extreme Values of P_t : ($P_t \leq -750$ million dollars; $P_t \geq 750$ million dollars)		Non-Extreme values of P_t : (-750 million dollars $< P_t <$ 750 million dollars)	
	United States	Japan	United States	Japan
A_t	-722.* (-2.63)	774. (1.69)	-20. (-.123)	-412. (-.796)
$S_{t,i}$	.1273 (2.004)	.277* (2.65)	.1285* (3.191)	.487* (4.47)
$S_{t-1,i}$	.2089* (3.31)	-.118 (-.96)	.0044 (1.30)	.104 (.87)
L_t (M_t in the Japanese Sec- tor)	464. (.690)	-13.4 (-.145)	343. (1.34)	-3.78 (-.0167)
M_{t-1}	N.I.	-151. (-1.66)	N.I.	195. (.789)
R_t	-.1670 (-1.811)	-.13 (-1.86)	.0629 (1.577)	-.0001 (-.0037)
R_{t-1}	N.I.	-.129 (-1.86)	N.I.	-.022 (-.53)
P_t	-.0056 (-.196)	.00059 (.028)	.0047* (2.37)	-.0007 (-.185)
H_t	.3710* (2.096)	.211 (1.50)	.1599 (1.785)	.2008 (1.36)
Coefficient of Determi- nation	.9719	.9335	.9726	.9912
Durbin-Watson Statistic	1.75	2.08	1.54	1.00

NOTE: First entry in each cell is regression coefficient; second is ' t '
test result.

*: Significant to the .05 level of significance, two-tail test.

NI: Not included.

CHAPTER VI
SUMMARY

The previous works on the dollar bankers' acceptance market summarized in Chapter I state without statistical substantiation that the volume of international trade, cost differentials between dollar acceptances and alternative financing methods, and credit availability in the United States are determinants of the volume of dollar bankers' acceptances outstanding. An additional possible determinant which is introduced in Chapter I (and later logically supported in Chapter III) is expectations of changes in the exchange rate of the United States dollar. The bankers' acceptance market is discussed in Chapter II where it is suggested that international access of borrowers and lenders to this market and the availability of credit information should be determinants of the volume of acceptances outstanding. The basis of these latter two factors is expanded upon in Chapter III (pp. 74-76). The effect of international access of borrowers and lenders is accounted for by the previously proposed determinants; therefore, its significance need not be tested separately. Data series measuring the availability of credit information do not exist; therefore, the significance of this factor cannot be tested. From the literature review in Chapter I and the material in Chapters II and III, our derived hypothesis is that: The volume of United States dollar bankers' acceptances outstanding will vary directly with (1) the level of international trade, (2) relative

advantages in the cost of financing with dollar acceptances, (3) the degree of restriction in United States monetary policy, and (4) expectations of depreciation of the dollar; and will vary inversely with expectations of appreciation of the dollar. To supplement the existing literature on the statistical significance of each of these hypothesized determinants, the above hypothesis is tested by graphical analysis in Chapter III and regression analysis in Chapter V.¹

Since the purpose of the creation of a large proportion of the volume of bankers' acceptances is to finance international trade, it was strongly suspected beforehand that our regressions (p. 91) and graphical analysis (pp. 45-47) would support the hypothesis that the volume of dollar bankers' acceptances varies directly with variations in the volume of international trade. From the graph of the volume of international trade and the volume of dollar acceptances outstanding which was presented for each geographic sector, a general positive relationship between acceptance volume and trade volume is observed. Also observed is that during particular periods the general positive relationships do not hold, therefore indicating that forces other than international trade affect the volume of acceptances outstanding. Our regression analysis in three sectors (United States, Japan, and the less-developed nations excluding Latin America) supports our hypothesis of an increasing acceptance volume as the volume of international trade increases. Overall, the conclusion drawn is that our

¹Chapter IV is devoted to specifying the structure of the regression model and data series used in Chapter V.

analysis strongly supports our hypothesis of a positive relationship between acceptance volume and the volume of international trade.

This paper's hypothesis states that the volume of dollar bankers' acceptances should increase as acceptances become a less expensive source of financing. Neither the graphical analysis (pp. 57-64) nor our regressions (pp. 94-99) reveal a consistent significant relationship between acceptance volume and the cost differentials between dollar acceptances and the alternative methods of financing used in the study.

The non-support of our hypothesis stems from one or a combination of several possible sources. The first is that the relationship between cost differentials and the outstanding volume of bankers' acceptances may be slight or non-existent. Second, our measure of the cost differentials (L_t , M_t , N_t , E_t , Q_t , and D_t) and their employment, although the best available, have several serious deficiencies (p. 97). The testing of the relationship between dollar bankers' acceptance volume and cost differentials would be facilitated if data were available for cost differentials and creations of acceptances on a daily and/or weekly basis. These data are not available and forces our model to take the form presented which is not as able to test the hypothesis as a model based on 'creations' of acceptances and, therefore, may have led to the non-support of the hypothesis. Even without these deficiencies, the collinearity that exists between L_t and M_t and the other independent variables could cause the non-support of the

hypothesis. In summary, the failure of our analysis to detect a significant relationship between cost differentials and the volume of acceptances outstanding is not a refutation of the hypothesis because the non-detection of a significant relationship may be due to data deficiencies, not to the lack of a causal relationship.

The graphical analysis (pp. 64-67) gives some support to the hypothesis that the volume of bankers' acceptances outstanding increases as credit availability lessens. The regression analysis does not support this hypothesis (pp. 99-101). This lack of support could stem from one or a combination of two forces. First, our data are deficient in several respects. The testing of the hypothesis would be facilitated if the volume of bankers' acceptances was available on a 'creations' basis as opposed to the 'outstanding volume' basis used in the study. The outstanding volume basis may cause the quarter's creations due to monetary restraint to be dwarfed by the aggregate volume outstanding if the quarter's creations have short maturities and substantial volume is carried over from the previous quarter. Therefore, credit availability, when an outstanding volume basis is used, could appear as non-significant to the volume of acceptances when in actuality it is significant. Another possible data deficiency is that H_t (our measure of credit availability) may not accurately reflect movements in monetary policy and this may cause its non-significance in the regression analysis. A last data deficiency is the collinearity between H_t and our other independent variables.

Another possible cause of the non-significance of H_t in our regression analysis is that a strong relationship may not exist between the volume of bankers' acceptances and credit availability. A non-

significant relationship could be due to one or a combination of two factors. First, increased use, by the large and well known New York banks that dominate the creation of acceptances, of dollar bankers' acceptances, to accommodate their customers' loan demand and yet not commit their limited funds (i.e., this assumes that the acceptances are not held by the banks) during periods of tight money, is only one, and possibly a minor alternative, of several methods that can be used to adjust the banks' operations to tight monetary conditions. Other alternatives would be sale of treasury bills, borrowing in the federal funds market, issue additional certificates of deposits, eurodollar borrowing, use of Federal Reserve discount window, security dealer loans, and call loans. These other alternatives may be more suited, due to cost or ease of transaction considerations, for reserve adjustment than increased creations of bankers' acceptances. This factor would relegate adjustment by varying bankers' acceptance volume to a seldom used and minor role in the overall process of changing the banks' operations to accommodate increased monetary restraint.

Another factor that possibly reduces the strength of the relationship between credit availability and the volume of acceptances could be several limits to the ability of commercial banks to increase the volume of acceptances as monetary restraint increases. Large increases in bankers' acceptance volume probably can occur only if a portion of the banks' customers, who usually are serviced through direct loans, have their needs financed by bankers' acceptances. These customers may be reluctant to convert to acceptance financing due to their lack of familiarity with acceptance financing. Additionally, the cost of acceptance financing will be likely to exceed the cost of direct loans

during periods of credit restraint because of the greater sensitivity of the bankers' acceptance rate to movements in interest rates. This also will cause borrowers to be reluctant to use acceptance financing. Large increases in acceptance volume probably can come only if additional commercial banks utilize acceptance financing. Entry into this type of financing requires the commercial banks to have familiarity with acceptance financing and that it possess extensive foreign and money market contacts. Most commercial banks lack both of these requirements. All of these factors limit the ability of commercial banks to increase the volume of acceptance financing as credit availability lessens. Whether acceptance volume is influenced by the stance of monetary policy is part of the larger question of what methods are normally used by commercial banks to adjust their operations to monetary restraint. To explore fully the relationship of acceptance volume and credit availability involves not only bankers' acceptances as an adjustment mechanism but all of the other adjustment mechanisms (i.e., sale of treasury bills, federal funds borrowing, certificates of deposits, eurodollar borrowing, use of Federal Reserve discount window, security dealer loans, and call loans). The exploration of this larger question is clearly beyond the scope of this paper.

The regression analysis gives support, in the form of significant negative coefficients for R_t in all regions except Latin America, to the hypothesis that the volume of dollar acceptances outstanding increases as expectations of a depreciation of the United States dollar increase (pp. 102-105). The regression results for our other indicator of expectations of changes in exchange rates (balance of payments of the United States) were inconsistent and neither support

nor refute the hypothesis (pp. 105-108). Little is known about the process by which expectations of changes in exchange rates are formulated. Therefore, it is very possible that the balance of payments of the United States does not play an important role in the formulation of expectations of changes in the exchange rate of the dollar especially since the United States has been able in the past to amass sizeable deficits yet avoid depreciation of the dollar for long periods of time. Use of an 'outstanding volume' basis for acceptance volume may also contribute to the non-significance of the balance of payments data series. Other possible indicators of expectations of changes in exchange rates were examined, such as the forward premium (or discount) of the United States dollar in terms of the German mark, but these also had a non-significant relationship to acceptance volume.

In summary, our graphical analysis supports the hypothesis that acceptance volume increases with increases in international trade and decreases in credit availability. Our regression analysis supports our hypothesis that acceptance volume increases as international trade increases and as expectations of a depreciation of the United States dollar increase. Neither the graphical analysis nor the regression analysis support the hypothesis that acceptance volume increases as acceptances become a less expensive source of financing. Two major data deficiencies have interfered with the testing of our hypothesis: (1) data on daily, monthly, and/or quarterly creations of bankers' acceptances are not available and (2) collinearity between our independent variable data series.

DATA
SERIES
APPENDIX

Ending Quarterly Volume of United States Dollar Bankers' Acceptances Outstanding
Created for Residents of Various Regions
(In Millions of Dollars)
1955-1973

Year	Quarter	United States	Japan	Developed Nations		Less-Developed Nations excluding Latin America	
				excl. United States and Japan	Latin America	Latin America	Latin America
1955	I	522	7.	132.	163.	5.	5.
	II	373.	13.	118.	143.	5.	5.
	III	377.	32.	197.	147.	7.	7.
	IV	348.	28.	118.	141.	7.	7.
1956	I	344.	29.	140.	146.	10.	10.
	II	327.	36.	154.	156.	11.	11.
	III	424.	56.	154.	161.	9.	9.
	IV	522.	74.	193.	162.	16.	16.
1957	I	466.	102.	223.	206.	22.	22.
	II	320.	163.	237.	240.	20.	20.
	III	495.	134.	248.	302.	18.	18.
	IV	593.	97.	275.	321.	21.	21.
1958	I	794.	97.	271.	346.	21.	21.
	II	622.	84.	293.	333.	19.	19.
	III	600.	93.	236.	327.	24.	24.
	IV	538.	89.	228.	303.	36.	36.
1959	I	394.	112.	189.	322.	37.	37.
	II	314.	166.	150.	321.	32.	32.
	III	383.	167.	135.	249.	20.	20.
	IV	569.	180.	108.	274.	19.	19.
1960	I	588.	254.	75.	430.	19.	19.
	II	589.	310.	84.	367.	32.	32.
	III	623.	425.	152.	444.	24.	24.
	IV	835.	555.	129.	469.	36.	36.

1961	I	817.	795.	129.	435.	55.
	II	702.	923.	160.	421.	64.
	III	792.	962.	186.	423.	59.
	IV	894.	999.	230.	498.	62.
1962	I	684.	991.	266.	474.	83.
	II	597.	885.	271.	511.	79.
	III	551.	874.	285.	493.	78.
	IV	793.	945.	273.	548.	91.
1963	I	656.	1021.	316.	492.	105.
	II	669.	1254.	223.	456.	95.
	III	685.	1245.	222.	465.	92.
	IV	697.	1400.	212.	458.	123.
1964	I	722.	1514.	215.	513.	139.
	II	711.	1559.	225.	522.	132.
	III	766.	1489.	225.	567.	128.
	IV	785.	1607.	246.	609.	137.
1965	I	693.	1710.	237.	541.	144.
	II	750.	1702.	275.	481.	149.
	III	860.	1568.	275.	475.	135.
	IV	829.	1572.	308.	530.	153.
1966	I	848.	1548.	307.	553.	131.
	II	949.	1490.	322.	535.	123.
	III	1111.	1269.	323.	556.	111.
	IV	1161.	1306.	365.	633.	138.
1967	I	1076.	1451.	344.	641.	181.
	II	1103.	1787.	377.	643.	221.
	III	1217.	1681.	359.	674.	215.
	IV	1301.	1829.	333.	637.	216.
1968	I	1341.	1836.	334.	653.	172.
	II	1490.	1748.	323.	572.	154.
	III	1582.	1637.	311.	617.	180.
	IV	1574.	1720.	341.	599.	194.

Year	Quarter	Developed Nations			Less-Developed	
		United States	Japan	Developed Nations excluding United States and Japan	Latin America	Nations excluding Latin America
1969	I	1687.	1617.	313.	653.	194.
	II	1813.	1776.	361.	663.	267.
	III	2259.	1619.	404.	635.	315.
	IV	2529.	1592.	399.	594.	236.
1970	I	2309.	1588.	375.	749.	331.
	II	2532.	1714.	432.	756.	415.
	III	2296.	1507.	439.	694.	412.
	IV	3092.	2140.	516.	861.	449.
1971	I	3142.	1896.	695.	928.	513.
	II	3710.	1691.	835.	838.	571.
	III	4108.	1885.	744.	859.	552.
	IV	3619.	2117.	707.	815.	631.
1972	I	3523.	2143.	759.	794.	766.
	II	3580.	1411.	647.	715.	716.
	III	3636.	1106.	541.	649.	670.
	IV	3683.	1360.	554.	648.	653.
1973	I	3396.	1526.	522.	735.	680.
	II	3273.	1981.	526.	725.	732.
	III	4473.	1946.	477.	721.	553.
	IV	4595.	1802.	715.	799.	587.

Source: "Bankers' Acceptances Outstanding," Federal Reserve Bulletin, and "Acceptances Created for the Accounts of Foreigners," U.S. Treasury Report.

Monthly Volume of Imports of
the United States and Japan
(In Millions of Dollars)
1955-1973

Year	Month	United States	Japan	Year	Month	United States	Japan
1955	Jan.	821.	174.	1957	Apr.	1119.	433.
	Feb.	850.	174.		May	1106.	452.
	Mar.	1019.	227.		June	986.	391.
	Apr.	871.	218.		July	1148.	389.
	May	959.	215.		Aug.	1043.	362.
	June	937.	213.		Sept.	1007.	319.
	July	885.	204.		Oct.	1148.	305.
	Aug.	961.	207.		Nov.	1043.	266.
	Sept.	947.	180.		Dec.	1142.	296.
	Oct.	1011.	203.		Jan.	1096.	269.
	Nov.	1065.	223.		Feb.	956.	260.
	Dec.	1008.	233.		Mar.	1071.	273.
1956	Jan.	1073.	218.	Apr.	1057.	254.	
	Feb.	1051.	220.	May	1061.	264.	
	Mar.	1102.	253.	June	1031.	256.	
	Apr.	991.	255.	July	1049.	253.	
	May	1095.	271.	Aug.	950.	245.	
	June	1034.	280.	Sept.	1073.	234.	
	July	1052.	276.	Oct.	1150.	234.	
	Aug.	1055.	288.	Nov.	1086.	221.	
	Sept.	995.	258.	Dec.	1254.	264.	
	Oct.	1121.	304.	Jan.	1154.	240.	
	Nov.	987.	281.	Feb.	1119.	253.	
	Dec.	1059.	318.	Mar.	1295.	295.	
1957	Jan.	1115.	328.	Apr.	1221.	299.	
	Feb.	993.	344.	May	1264.	321.	
	Mar.	1133.	393.	June	1370.	325.	

1959	July	1250.	313.	1962	May	1404.	515.
	Aug.	1188.	290.		June	1351.	455.
	Sept.	1395.	298.		July	1347.	463.
	Oct.	1202.	297.		Aug.	1346.	438.
	Nov.	1283.	289.		Sept.	1471.	428.
	Dec.	1467.	372.		Oct.	1312.	450.
1960	Jan.	1213.	330.		Nov.	1425.	413.
	Feb.	1307.	364.		Dec.	1377.	486.
	Mar.	1261.	435.	1963	Jan.	1100.	450.
	Apr.	1315.	355.		Feb.	1510.	482.
	May	1242.	385.		Mar.	1486.	552.
	June	1252.	372.		Apr.	1415.	565.
	July	1235.	379.		May	1416.	579.
	Aug.	1227.	368.		June	1431.	535.
	Sept.	1178.	384.		July	1450.	579.
	Oct.	1126.	352.		Aug.	1497.	574.
	Nov.	1109.	362.		Sept.	1443.	531.
1961	Dec.	1109.	402.		Oct.	1455.	621.
	Jan.	1161.	403.		Nov.	1466.	581.
	Feb.	1150.	435.		Dec.	1480.	646.
	Mar.	1163.	463.	1964	Jan.	1418.	646.
	Apr.	1152.	436.		Feb.	1459.	651.
	May	1153.	510.		Mar.	1518.	680.
	June	1174.	507.		Apr.	1537.	669.
	July	1379.	488.		May	1530.	714.
	Aug.	1254.	518.		June	1514.	663.
	Sept.	1262.	492.		July	1573.	645.
	Oct.	1300.	500.		Aug.	1608.	589.
	Nov.	1309.	500.		Sept.	1563.	614.
	Dec.	1315.	536.		Oct.	1551.	672.
1962	Jan.	1327.	470.		Nov.	1698.	607.
	Feb.	1320.	488.		Dec.	1642.	789.
	Mar.	1342.	531.	1965	Jan.	1199.	445.
	Apr.	1365.	478.		Feb.	1606.	644.

1970	July	3255.	1651.	1972	Apr.	4460.	1882.
	Aug.	3346.	1561.		May	4466.	1974.
	Sept.	3428.	1639.		June	4495.	1744.
	Oct.	3501.	1725.		July	4561.	1844.
	Nov.	3428.	1563.		Aug.	4644.	2092.
	Dec.	3404.	1713.		Sept.	4671.	2096.
1971	Jan.	3686.	1589.		Oct.	4780.	2203.
	Feb.	3553.	1579.		Nov.	5136.	2201.
	Mar.	3569.	1733.		Dec.	5002.	2409.
	Apr.	3758.	1667.	1973	Jan.	5281.	2243.
	May	3988.	1663.		Feb.	5541.	2530.
	June	4023.	1708.		Mar.	5432.	2789.
	July	3799.	1680.		Apr.	5291.	2801.
	Aug.	3937.	1576.		May	5761.	3236.
	Sept.	4245.	1569.		June	5794.	3341.
	Oct.	3531.	1719.		July	5762.	3265.
	Nov.	3379.	1728.		Aug.	6021.	3443.
	Dec.	4128.	1790.		Sept.	5575.	3242.
1972	Jan.	4540.	1646.		Oct.	5905.	3760.
	Feb.	4403.	1769.		Nov.	6628.	3591.
	Mar.	4475.	2036.		Dec.	6084.	4171.

Source: "United States Imports and Exports," Federal Reserve Bulletin, and "Japan," International Monetary Statistics.

Quarterly Volume of Imports (and Exports in Latin America)
of Developed Nations Excluding United States
and Japan, Latin America, and the Less-
Developed Countries excluding Latin America
(In Millions of Dollars)
1955-1973

Year	Quarter	Developed Nations excluding United States and Japan	Latin America	Less-Developed Nations excluding Latin America
1955	I	11536.	3666.	4690.
	II	11706.	3685.	4736.
	III	11759.	3694.	4843.
	IV	12605.	3965.	4978.
1956	I	12291.	3952.	5249.
	II	14072.	4014.	4885.
	III	13400.	4007.	4865.
	IV	14362.	4266.	5063.
1957	I	14957.	4299.	5279.
	II	15176.	4413.	5568.
	III	14394.	4471.	5573.
	IV	14489.	4617.	5606.
1958	I	13746.	4050.	5367.
	II	13803.	4129.	5148.
	III	13397.	4067.	4953.
	IV	14310.	4282.	5468.
1959	I	13260.	3783.	4971.
	II	14688.	4160.	5173.
	III	14236.	4246.	5137.
	IV	16062.	4023.	5601.
1960	I	16759.	4825.	4979.
	II	17190.	5075.	5213.
	III	16618.	5075.	5049.
	IV	18009.	5150.	5448.
1961	I	17762.	5050.	5014.
	II	18300.	5245.	5266.
	III	17329.	4867.	5000.
	IV	18903.	4317.	5307.
1962	I	19105.	4987.	5327.
	II	19386.	5032.	5466.
	III	18958.	5112.	5270.
	IV	19769.	5210.	6541.
1963	I	19801.	4865.	5077.
	II	22100.	5192.	5440.
	III	21621.	5250.	5377.
	IV	23579.	4507.	6230.
1964	I	23881.	4325.	6222.
	II	25271.	4602.	6350.
	III	23718.	4605.	6393.
	IV	26134.	4962.	6790.

Year	Quarter	Developed Nations excluding United States and Japan	Latin America	Less-Developed Nations excluding Latin America
1965	I	25471.	4445.	6385.
	II	27095.	4790.	7102.
	III	26261.	4837.	6742.
	IV	29356.	5067.	6622.
1966	I	28641.	4960.	7290.
	II	29495.	5190.	7457.
	III	28474.	5320.	7597.
	IV	30666.	5287.	7977.
1967	I	29911.	5060.	7935.
	II	31198.	5640.	8012.
	III	28922.	5280.	8938.
	IV	31881.	5330.	8085.
1968	I	31907.	5275.	8000.
	II	32664.	5357.	8440.
	III	32714.	5775.	8212.
	IV	36747.	5900.	8885.
1969	I	35814.	5650.	8437.
	II	39577.	6200.	8867.
	III	37794.	6175.	9195.
	IV	42559.	6200.	9170.
1970	I	45898.	6300.	10427.
	II	46250.	7100.	10410.
	III	43286.	7125.	10407.
	IV	48413.	7350.	11752.
1971	I	46413.	6996.	11427.
	II	49386.	7698.	12048.
	III	47619.	7674.	11973.
	IV	53691.	7698.	12525.
1972	I	55149.	7575.	13035.
	II	58356.	8349.	13548.
	III	53931.	8724.	13173.
	IV	63285.	8985.	13887.
1973	I	68793.	9105.	14880.
	II	77292.	9798.	16299.
	III	80895.	13434.	16521.
	IV	76779.	14623.	17236.

Source: "World Trade", International Monetary Statistics.

Quarterly Cost Differential Between Dollar Bankers' Acceptances
and Short-Term Direct Loans in New York City (Per cent per annum) 1955-1973

Year	Quarter	New York Short-Term Direct Loan Rate	Rate on Prime Dollar Bankers' Acceptances	Service Fee for Acceptance Finance	Differential Between Dollar Bankers' Acceptances and New York Direct Loans (Col. 1 - Col. 2 & 3)
1955	I	3.14	1.38	1.5	.26
	II	3.14	1.50	1.5	.14
	III	3.31	1.87	1.5	-.06
	IV	3.55	2.17	1.5	-.12
1956	I	3.62	2.38	1.5	-.26
	II	3.78	2.50	1.5	-.22
	III	4.01	2.65	1.5	-.14
	IV	4.09	3.05	1.5	-.46
1957	I	4.10	3.38	1.5	-.78
	II	4.11	3.25	1.5	-.64
	III	4.44	3.78	1.5	-.84
	IV	4.61	3.50	1.5	-.39
1958	I	4.32	2.30	1.5	.52
	II	3.88	1.30	1.5	1.08
	III	3.82	1.65	1.5	.67
	IV	4.07	2.75	1.5	-.18
1959	I	4.18	2.75	1.5	-.07
	II	4.46	3.17	1.5	-.21
	III	4.91	3.56	1.5	-.15
	IV	5.10	4.25	1.5	-.65
1960	I	5.10	4.44	1.5	-.84
	II	5.10	3.78	1.5	.18
	III	4.78	3.04	1.5	.24
	IV	4.64	3.00	1.5	.14
1961	I	4.64	2.78	1.5	.36
	II	4.63	2.68	1.5	.45

1961	III	4.63	2.81	1.5	.32
	IV	4.65	2.75	1.5	.40
1962	I	4.67	3.00	1.5	.17
	II	4.68	2.91	1.5	.27
	III	4.66	3.11	1.5	.05
	IV	4.67	3.00	1.5	.17
1963	I	4.69	3.13	1.5	.06
	II	4.68	3.13	1.5	.05
	III	4.70	3.59	1.5	-.39
	IV	4.67	3.71	1.5	-.54
1964	I	4.65	3.75	1.5	-.60
	II	4.64	3.75	1.5	-.61
	III	4.61	3.75	1.5	-.64
	IV	4.64	3.79	1.5	-.65
1965	I	4.63	4.10	1.5	-.97
	II	4.62	4.25	1.5	-1.13
	III	4.63	4.14	1.5	-1.01
	IV	4.87	4.25	1.5	-.88
1966	I	5.34	4.86	1.5	-1.02
	II	5.57	5.18	1.5	-1.11
	III	6.05	5.67	1.5	-1.12
	IV	6.09	5.67	1.5	-1.08
1967	I	5.77	4.88	1.5	-.61
	II	5.59	4.27	1.5	-.18
	III	5.58	4.77	1.5	-.69
	IV	5.63	4.98	1.5	-.85
1968	I	6.08	5.23	1.5	-.65
	II	6.52	6.04	1.5	-1.02
	III	6.60	5.66	1.5	-.56
	IV	6.32	5.97	1.5	-1.15
1969	I	7.06	6.47	1.5	-.91
	II	7.60	7.38	1.5	-1.28
	III	8.59	8.04	1.5	-.95
	IV	8.58	8.18	1.5	-1.10
1970	I	8.57	8.30	1.5	-1.23
	II	8.13	8.02	1.5	-1.39

Year	Quarter	New York Short-Term Direct Loan Rate	Rate on Prime Dollar Bankers' Acceptances	Service Fee for Acceptance Finance	Differential Between	
					Dollar Bankers' Acceptances and New York Direct Loans (Col. 1 - Col. 2 & 3)	Dollar Bankers' Acceptances and New York Direct Loans (Col. 1 - Col. 2 & 3)
1970	III	8.12	7.20	1.5	- .58	
	IV	7.59	5.79	1.5	.30	
	I	6.18	4.09	1.5	.59	
	II	5.56	4.91	1.5	.85	
1971	III	6.17	5.57	1.5	-.90	
	IV	5.78	4.78	1.5	-.50	
	I	5.38	3.52	1.5	.36	
	II	5.21	4.25	1.5	-.54	
1972	III	5.47	4.67	1.5	-.70	
	IV	6.05	5.01	1.5	-.46	
	I	6.13	6.14	1.5	-1.51	
	II	6.97	7.15	1.5	-1.68	
1973	III	9.03	10.18	1.5	-2.65	
	IV	9.83	8.73	1.5	-.40	

Source: "Money Market Rates," Federal Reserve Bulletin; Cooper, "Bankers' Acceptances," p. 131;
and "Rates on Business Loans of Banks," Federal Reserve Bulletin.

Quarterly Cost Differential Between Dollar Bankers' Acceptances
and Short-Term Direct Loans in the Euro-Dollar Market (Percent per annum)
(1955-1973)

Year	Quarter	Euro-dollar Short-Term Deposit Rate	Service Fee For Euro- dollar Loans	Rate on Prime Dollar Bankers' Acceptances	Service Fee for Acceptance Financing	Differential Between Dollar Bankers' Acceptances and Euro-dollar Loans (Col. 1&2-Col. 3&4)
1957	I	3.25	.5	3.38	1.5	-1.13
	II	3.38	.5	3.25	1.5	-.87
	III	3.56	.5	3.78	1.5	-1.22
	IV	3.62	.5	3.50	1.5	-.88
1958	I	3.00	.5	2.30	1.5	-.30
	II	2.31	.5	1.30	1.5	.01
	III	2.19	.5	1.65	1.5	-.46
	IV	2.94	.5	2.75	1.5	-.81
1959	I	3.17	.5	2.75	1.5	-.58
	II	3.43	.5	3.17	1.5	-.74
	III	3.81	.5	3.56	1.5	-.75
	IV	4.60	.5	4.25	1.5	-.65
1960	I	4.65	.5	4.44	1.5	-.79
	II	4.21	.5	3.78	1.5	-.57
	III	3.73	.5	3.04	1.5	-.31
	IV	4.12	.5	3.00	1.5	.12
1961	I	3.70	.5	2.78	1.5	-.08
	II	3.62	.5	2.68	1.5	-.06
	III	3.31	.5	2.81	1.5	-.50
	IV	3.53	.5	2.75	1.5	-.22
1962	I	3.46	.5	3.00	1.5	-.54
	II	3.54	.5	2.91	1.5	-.37
	III	3.81	.5	3.11	1.5	-.30
	IV	4.06	.5	3.00	1.5	.06

1963	I	3.48	.5	3.13	1.5	-.65
	II	3.78	.5	3.13	1.5	-.35
	III	4.03	.5	3.59	1.5	-.56
	IV	4.20	.5	3.71	1.5	-.51
1964	I	4.17	.5	3.75	1.5	-.58
	II	4.25	.5	3.75	1.5	-.50
	III	4.28	.5	3.75	1.5	-.47
	IV	4.79	.5	3.79	1.5	0
1965	I	4.59	.5	4.10	1.5	-.51
	II	5.09	.5	4.25	1.5	-.16
	III	4.68	.5	4.14	1.5	-.46
	IV	5.18	.5	4.25	1.5	-.07
1966	I	5.39	.5	4.86	1.5	-.47
	II	5.81	.5	5.18	1.5	-.37
	III	6.64	.5	5.67	1.5	-.03
	IV	7.09	.5	5.67	1.5	.42
1967	I	5.62	.5	4.88	1.5	-.26
	II	4.91	.5	4.27	1.5	-.36
	III	5.08	.5	4.77	1.5	-.69
	IV	6.17	.5	4.98	1.5	.19
1968	I	5.55	.5	5.23	1.5	-.68
	II	6.91	.5	6.04	1.5	-.13
	III	6.23	.5	5.66	1.5	-.43
	IV	6.76	.5	5.97	1.5	-.21
1969	I	8.09	.5	6.47	1.5	.62
	II	9.56	.5	7.38	1.5	1.18
	III	10.87	.5	8.04	1.5	1.83
	IV	10.50	.5	8.18	1.5	1.32
1970	I	9.51	.5	8.30	1.5	.21
	II	8.94	.5	8.02	1.5	-.08
	III	8.25	.5	7.20	1.5	.05
	IV	7.48	.5	5.79	1.5	.69
1971	I	5.60	.5	4.09	1.5	.51
	II	7.08	.5	4.91	1.5	1.17
	III	8.21	.5	5.57	1.5	1.64
	IV	6.28	.5	4.78	1.5	.50

Year	Quarter	Euro-dollar Short-Term Deposit Rate	Service Fee For Euro- dollar Loans	Rate on Prime Dollar Bankers' Acceptances	Service Fee for Acceptance Financing	Differential Between
						Dollar Bankers' Acceptances and Euro-dollar Loans (Col. 1&2-Col. 3&4)
1972	I	5.15	.5	3.52	1.5	.63
	II	4.88	.5	4.25	1.5	-.37
	III	5.49	.5	4.67	1.5	-.18
	IV	5.77	.5	5.01	1.5	-.24
1973	I	7.45	.5	6.14	1.5	.31
	II	8.43	.5	7.15	1.5	.28
	III	11.46	.5	10.18	1.5	.28
	IV	9.82	.5	8.73	1.5	+.09

Source: "Money Market Rates," Federal Reserve Bulletin; Cooper, "Bankers' Acceptances," p. 131;
 "Short-Term Money Market Rates," Bank of England Statistical Abstract; Personal Correspondence
 with the bank of England.

Quarterly Cost Differential Between Dollar Bankers'
 Acceptances and Sterling Bankers' Acceptances
 (Percent per annum)
 1955-1973

Year	Month	Sterling Bankers' Acceptance Rate	Service Fee for Sterling Bankers' Acceptances	Tax on Sterling Acceptances
1955	I	2.58	1.	.2
	II	3.94	1.	.2
	III	4.06	1.	.2
	IV	4.21	1.	.2
1956	I	4.77	1.	.2
	II	5.14	1.	.2
	III	5.08	1.	.2
	IV	5.08	1.	.2
1957	I	4.44	1.	.2
	II	4.04	1.	.2
	III	4.17	1.	.2
	IV	6.78	1.	.2
1958	I	6.17	1.	.2
	II	5.24	1.	.2
	III	3.98	1.	.2
	IV	3.67	1.	.2
1959	I	3.23	1.	.2
	II	3.43	1.	.2
	III	3.60	1.	.2
	IV	3.55	1.	.2
1960	I	4.69	1.	.2
	II	4.76	1.	.2
	III	5.75	1.	.2
	IV	4.98	1.	.2
1961	I	4.48	1.	.2
	II	4.55	1.	.2
	III	6.91	1.	.2
	IV	5.67	1.	.2
1962	I	5.65	1.	.2
	II	4.14	1.	.2
	III	4.02	1.	.2
	IV	4.03	1.	.2
1963	I	3.63	1.	.2
	II	3.88	1.	.2
	III	3.85	1.	.2
	IV	3.91	1.	.2
1964	I	4.00	1.	.2
	II	4.56	1.	.2
	III	4.84	1.	.2
	IV	5.42	1.	.2

Premium (+) or Discount (-) of Pound	Dollar Bankers' Acceptance Rate	Service Fee for Dollar Bankers' Acceptances	Differential Between Dollar and Sterling Bankers' Acceptances (Col. 1 + 2 + 3 + 4 - Col. 5 + 6)
-.31	1.38	1.5	.59
-1.74	1.50	1.5	.40
-2.46	1.87	1.5	-.57
-1.83	2.17	1.5	-.09
-2.09	2.38	1.5	.00
-2.29	2.50	1.5	.05
-2.06	2.65	1.5	.07
-3.31	3.05	1.5	-1.58
-1.86	3.38	1.5	-1.10
-2.05	3.25	1.5	-1.56
-2.67	3.78	1.5	-2.58
-3.23	3.50	1.5	-.25
-3.60	2.30	1.5	-.03
-3.55	1.30	1.5	.09
-2.01	1.65	1.5	.02
-.71	2.75	1.5	-.09
-.44	2.75	1.5	-.26
-.44	3.17	1.5	-.48
.00	3.56	1.5	-.26
.67	4.25	1.5	-.33
-.13	4.44	1.5	-.18
-.80	3.78	1.5	-.12
-2.08	3.04	1.5	.33
-1.42	3.00	1.5	.26
-.89	2.78	1.5	.51
-1.88	2.68	1.5	-.31
-4.01	2.81	1.5	-.21
-2.71	2.75	1.5	-.09
-2.57	3.00	1.5	-.22
-1.15	2.91	1.5	-.22
-.62	3.11	1.5	-.01
-.40	3.00	1.5	.33
-.80	3.13	1.5	-.60
-.75	3.13	1.5	-.30
-.27	3.59	1.5	-.31
-.22	3.71	1.5	-.32
-.54	3.75	1.5	-.59
-.80	3.75	1.5	-.29
-.67	3.75	1.5	.12
-1.84	3.79	1.5	-.51

Year	Month	Sterling Bankers' Acceptance Rate	Service Fee for Sterling Bankers' Acceptances	Tax on Sterling Acceptances
1965	I	6.74	1.	.2
	II	6.73	1.	.2
	III	5.97	1.	.2
	IV	5.91	1.	.2
1966	I	5.95	1.	.2
	II	5.97	1.	.2
	III	6.97	1.	.2
	IV	6.93	1.	.2
1967	I	6.40	1.0	.2
	II	5.47	1.	.2
	III	5.53	1.	.2
	IV	6.88	1.	.2
1968	I	7.75	.75	.2
	II	7.42	.75	.2
	III	7.44	.75	.2
	IV	7.03	.75	.2
1969	I	7.32	.75	.2
	II	8.46	.75	.2
	III	8.88	.75	.2
	IV	8.88	.75	.2
1970	I	8.88	.75	.2
	II	8.06	.75	.2
	III	8.06	.75	.2
	IV	8.06	.75	.2
1971	I	8.06	1.	.2
	II	7.06	1.	.2
	III	7.56	1.	.2
	IV	5.88	1.	.2
1972	I	5.56	1.	.2
	II	5.06	1.	.2
	III	8.00	1.	.2
	IV	8.00	1.	.2
1973	I	10.06	1.	.2
	II	10.13	1.	.2
	III	13.38	1.	.2
	IV	13.28	1.	.2

Premium (+) or Discount (-) of Pound	Dollar Bankers' Acceptance Rate	Service Fee for Dollar Bankers' Acceptances	Differential Between Dollar and Sterling Bankers' Acceptances (Col. 1 + 2 + 3 + 4 - Col. 5 + 6)
-2.77	4.10	1.5	-.43
-2.50	4.25	1.5	-.32
-2.22	4.14	1.5	-.69
-1.16	4.25	1.5	.20
-.93	4.86	1.5	-.14
-.76	5.18	1.5	-.27
-1.39	5.67	1.5	-.39
-.72	5.67	1.5	.24
-.80	4.88	1.5	.42
-.80	4.27	1.5	.10
-.72	4.77	1.5	-.26
-1.06	4.98	1.5	.54
-2.75	5.23	1.5	-.78
-5.70	6.04	1.5	-4.87
-2.36	5.66	1.5	-1.13
-2.09	5.97	1.5	-1.58
-2.61	6.47	1.5	-2.31
-5.59	7.38	1.5	-5.06
-5.66	8.04	1.5	-5.37
-.83	8.18	1.5	-.68
-.47	8.30	1.5	-.44
-.42	8.02	1.5	-.93
-.52	7.20	1.5	-.21
-.80	5.79	1.5	1.17
-3.21	4.09	1.5	.46
-.83	4.91	1.5	1.02
1.53	5.57	1.5	3.22
1.50	4.78	1.5	2.30
-.18	3.52	1.5	1.56
-.80	4.25	1.5	-.29
-2.89	4.67	1.5	.14
-2.89	5.01	1.5	-.20
-3.46	6.14	1.5	.16
-1.47	7.15	1.5	1.21
-4.39	10.18	1.5	-1.49
-5.50	8.73	1.5	-1.25

Source: "Money Market Rates," Federal Reserve Bulletin, "Bankers' Acceptances," p. 131; "Short-Term Money Market Rates," Bank of England Statistical Abstract; and Personal Correspondence with The Bank of England.

Quarterly Cost Differential Between Dollar Bankers' Acceptances and
Short-Term Direct Loans Through Japanese Import Bills
(Percent per annum)
1955-1973

Year	Quarter	Japanese Import Bill Rate	Premium (+) or Discount (-) of Yen	Dollar Bankers' Acceptance Rate	Service Fee for Dollar Bankers' Acceptances	Differential Between Dollar Bankers' Acceptances and Japanese Import Bills (Col. 1 & 2 - Col. 3 & 4)
1955	I	7.67	--	1.38	1.5	4.79
	II	7.67	--	1.50	1.5	4.67
	III	7.67	--	1.87	1.5	4.30
	IV	7.67	--	2.17	1.5	4.00
1956	I	7.67	--	2.38	1.5	3.79
	II	7.67	--	2.50	1.5	3.67
	III	7.67	--	2.65	1.5	3.52
	IV	7.67	--	3.05	1.5	3.12
1957	I	7.67	--	3.38	1.5	2.79
	II	8.40	--	3.25	1.5	3.65
	III	8.40	--	3.78	1.5	3.12
	IV	8.40	--	3.50	1.5	3.40
1958	I	8.40	--	2.30	1.5	4.60
	II	8.40	--	1.30	1.5	5.60
	III	7.67	--	1.65	1.5	4.52
	IV	7.30	--	2.75	1.5	3.05
1959	I	7.30	--	2.75	1.5	3.05
	II	7.30	--	3.17	1.5	2.63
	III	7.30	--	3.56	1.5	2.24
	IV	7.30	--	4.25	1.5	1.55
1960	I	7.67	--	4.44	1.5	1.73
	II	7.67	--	3.78	1.5	2.39
	III	7.67	--	3.04	1.5	3.13
	IV	7.30	--	3.00	1.5	2.80

1961	I	6.94	--	2.78	1.75	2.65
	II	6.94	--	2.68	1.5	2.76
	III	7.30	--	2.81	1.5	2.99
	IV	7.67	--	2.75	1.5	3.42
1962	I	7.67	--	3.00	1.5	3.17
	II	7.67	--	2.91	1.5	3.26
	III	7.67	--	3.11	1.5	3.06
	IV	7.30	--	3.00	1.5	2.80
1963	I	6.94	--	3.13	1.5	2.31
	II	6.21	--	3.13	1.5	1.58
	III	6.21	--	3.59	1.5	1.12
	IV	6.21	--	3.71	1.5	1.00
1964	I	6.21	--	3.75	1.5	.96
	II	6.94	--	3.75	1.5	1.69
	III	6.94	--	3.75	1.5	1.69
	IV	6.94	--	3.79	1.5	1.65
1965	I	6.57	--	4.10	1.5	.97
	II	6.21	--	4.25	1.5	.46
	III	6.21	--	4.14	1.5	.57
	IV	6.21	--	4.25	1.5	.46
1966	I	7.30	--	4.86	1.5	.94
	II	7.30	--	5.18	1.5	.62
	III	7.30	--	5.67	1.5	.13
	IV	7.30	--	5.67	1.5	.13
1967	I	7.30	--	4.88	1.5	.92
	II	7.30	--	4.27	1.5	1.53
	III	7.30	--	4.77	1.5	1.03
	IV	7.67	--	4.98	1.5	1.19
1968	I	8.03	--	5.23	1.5	1.30
	II	8.03	--	6.04	1.5	.49
	III	7.67	--	5.66	1.5	.51
	IV	7.67	--	5.97	1.5	.20
1969	I	7.67	--	6.47	1.5	-.30
	II	7.67	--	7.38	1.5	-1.21
	III	7.67	--	8.04	1.5	-1.87
	IV	8.25	--	8.18	1.5	-1.43

Year	Quarter	Japanese Import Bill Rate	Premium (+) or Discount (-) of Yen	Dollar Bankers' Acceptance Rate	Service Fee for Dollar Bankers' Acceptances	Differential Between Dollar Bankers' Acceptances and Japanese Import Bills (Col. 1 & 2 - Col. 3 & 4)
1970	I	8.25	--	8.30	1.5	-1.55
	II	8.25	--	8.02	1.5	-1.27
	III	8.25	--	7.20	1.5	-.45
	IV	8.00	--	5.79	1.5	.71
1971	I	7.75	--	4.09	1.5	2.16
	II	7.5	--	4.91	1.5	1.09
	III	7.25	--	5.57	1.5	.18
	IV	7.25	--	4.78	1.5	.97
1972	I	6.75	6.20	3.52	1.5	7.93
	II	6.75	6.40	4.25	1.5	7.40
	III	6.25	12.40	4.67	1.5	12.48
	IV	6.25	17.80	5.01	1.5	17.54
1973	I	6.25	16.40	6.14	1.5	15.01
	II	7.50	8.00	7.15	1.5	6.85
	III	9.00	14.20	10.18	1.5	11.52
	IV	9.00	-2.12	8.73	1.5	-3.35

Source: "Money Market Rates," Federal Reserve Bulletin; "Weekly Forward Exchange Rates" and "Short-Term Interest Rates," Japan Economic Journal (Tokyo: Financial Publishing Corp., 1972-1974); Cooper, "Bankers' Acceptances," p. 131; Personal Correspondence with Bank of Japan.

Quarterly Average Volume of Free Reserves of Federal Reserve Member Banks
(In millions of dollars)
1955-1973

Quarter	1955	1956	1957	1958	1959	1960
I	254.	(310.)	(109.)	314.	(82.)	(314.)
II	158.	(411.)	(485.)	508.	(363.)	(62.)
III	(128.)	(231.)	(440.)	341.	(534.)	260.
IV	(365.)	(128.)	(257.)	25.	(439.)	595.
	1961	1962	1963	1964	1965	1966
I	566.	453.	318.	120.	20.	(132.)
II	518.	415.	234.	119.	(158.)	(324.)
III	538.	419.	129.	100.	(155.)	(372.)
IV	459.	386.	111.	79.	(81.)	(273.)
	1967	1968	1969	1970	1971	1972
I	72.	(44.)	(592.)	(800.)	(113.)	126.
II	247.	(322.)	(1003.)	(733.)	(116.)	41.
III	279.	(183.)	(950.)	(745.)	(520.)	(197.)
IV	179.	(236.)	(939.)	(187.)	80.	(483.)
	1973					
I	(1258.)					
II	(1656.)					
III	(1743.)					
IV	(1165.)					

Source: "Reserves and Borrowings of Member Banks," Federal Reserve Bulletin.

Monthly Change in International
Reserves Held by the United States
(In millions of dollars)
1955-1973

Month	1955	1956	1957	1958	1959	1960	1961
Jan.	-14	3	319	3	-55	-13	-325
Feb.	2	2	19	-124	-7	-23	-68
Mar.	-25	8	10	-249	-34	-14	21
Apr.	-39	27	18	-445	-128	-54	2
May	+3	29	302	-368	-131	-8	16
June	3	47	6	-262	-481	-32	152
July	4	50	3	-137	-74	-175	-13
Aug.	-2	47	0	-193	104	-143	-60
Sept.	13	67	24	-153	11	-320	-73
Oct.	2	-33	26	-188	68	-282	-126
Nov.	4	107	2	-88	-30	-495	-310
Dec.	1	-48	20	-71	-110	-143	-74
Month	1962	1963	1964	1965	1966	1967	1968
Jan.	16	-54	-268	-331	-134	-360	-210
Feb.	-465	-79	-22	-352	-262	-198	170
Mar.	375	+55	+32	-91	109	-143	-864
April	-111	-32	177	-245	-107	51	-86
May	-44	-37	-34	-373	20	37	508
June	363	-53	-64	84	41	331	-285
July	-403	-192	28	102	255	50	303
Aug.	-116	-39	-14	256	112	381	61
Sept.	-31	+63	-37	-69	-114	44	207
Oct.	-167	122	-40	-89	20	278	-207
Nov.	-148	-130	-95	-110	-154	511	1233
Dec.	-60	+28	432	-101	186	-608	50
Month	1969	1970	1971	1972	1973		
Jan.	-256	432	212	712	-97		
Feb.	45	274	-165	-549	-128		
Mar.	259	-320	-192	-60	5		
April	190	-431	-35	15	-27		
May	122	-754	-496	1060	12		
June	-13	163	-307	-6	-2		
July	-121	-263	-221	-249	4		
Aug.	259	-269	-1155	34	5		
Sept.	548	-269	3	93	4		
Oct.	-427	-407	15	96	1440		
Nov.	-316	-229	-15	-6	6		
Dec.	964	-404	36	-150	5		

Source: "U.S. Reserve Assets," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, 1955-1973).

Quarterly Net Liquidity Balance of Payments
of the United States
(In Millions of Dollars)
1955-1973

Year	Quarter	Balance of Payment of the United States	Year	Quarter	Balance of Payment of the United States
1955	I	-228.	1961	III	-916.
	II	-560.		IV	-1469.
	III	-507.		I	-763.
	IV	-218.		II	-503.
1956	I	-621.	1963	III	-934.
	II	-445.		IV	-1409.
	III	-661.		I	-973.
	IV	189.		II	-1314.
1957	I	377.	1964	III	-379.
	II	500.		IV	-398.
	III	-256.		I	-417.
	IV	-164.		II	-545.
1958	I	-577.	1965	III	-593.
	II	-1065.		IV	-1551.
	III	-907.		I	-780.
	IV	-878.		II	226.
1959	I	-915.	1966	III	-534.
	II	-1432.		IV	-332.
	III	-1403.		I	-651.
	IV	-510.		II	-122.
1960	I	-851.	1967	III	-165.
	II	-1014.		IV	-419.
	III	-1239.		I	-538.
	IV	-1156.		II	-522.
1961	I	-506.	III	-802.	
	II	-185.	IV	-1742.	

1968	I	-660.	1971	I	-2728.
	II	9.		II	-5900.
	III	-139.		III	-9539.
	IV	862.		IV	-4508.
1969	I	-1670.	1972	I	-3272.
	II	-3871.		II	-2385.
	III	-2279.		III	-4678.
	IV	420.		IV	-4028.
1970	I	-1471.	1973	I	-6661.
	II	-1085.		II	-1607.
	III	-842.		III	+1498.
	IV	-1240.		IV	-1126.

Source: "U.S. Balance of Payments," Federal Reserve Bulletin (Washington, D.C.: Federal Reserve System, 1955-1973)

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BIOGRAPHICAL SKETCH

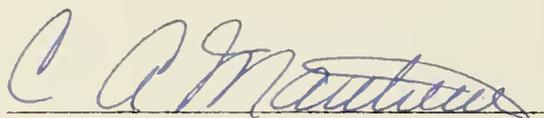
of

Gary Eugene Kunday

June, 1975

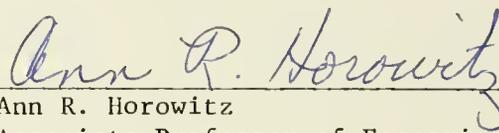
Gary Kunday was born in Monroe, Louisiana in March 1947 and grew up in Dallas, Texas. He entered North Texas State University in 1965 and graduated in 1967 with a Bachelor of Business Administration. In the fall of 1967 he entered the master of business administration program at Texas Technological University. His master's coursework was completed in 1968 although the degree was not conferred until 1970. After finishing the master's coursework, one year of employment at the Texas Pacific Oil Company was completed before entering the doctoral program in business administration at the University of Florida in the fall of 1969. He accepted in 1972 an assistant professorship at the University of New Brunswick, Canada. In the spring of 1974 he left the University of New Brunswick to accept an assistant professorship at Columbus College in Columbus, Georgia. In the winter of 1974 his dissertation for the Doctor of Philosophy was completed and the degree was conferred by the University of Florida in 1975.

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This dissertation was submitted to the Graduate Faculty of the Department of Economics in the College of Business Administration and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

June, 1975

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