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**DISCRIMINATORY OCEAN FREIGHT RATES
AND
THE BALANCE OF PAYMENTS**

HEARINGS
BEFORE THE
SUBCOMMITTEE ON FEDERAL PROCUREMENT
AND REGULATION
OF THE
JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES
EIGHTY-NINTH CONGRESS
FIRST SESSION

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DISCRIMINATORY OCEAN FREIGHT RATES AND THE BALANCE OF PAYMENTS

WEDNESDAY, JUNE 30, 1965

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON FEDERAL PROCUREMENT AND
REGULATION OF THE JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to call, in room 1202, New Senate Office Building, Hon. Paul H. Douglas (chairman of the subcommittee) presiding.

Present: Senator Douglas.

Also present: Thomas H. Boggs, Jr., consultant; James W. Knowles, executive director; John R. Stark, deputy director; and Hamilton D. Gewehr, administrative clerk.

Chairman DOUGLAS. The committee will come to order.

As we resume hearings on the subject of discriminatory ocean freight rates and the balance of payments, it may be well to summarize one of the basic findings of this committee; namely, that U.S. businessmen have to pay higher outbound ocean freight rates on their exports than do their European and Japanese counterparts who ship goods to this country.

We have established that these unfavorable differences in freight rates are not based on economic considerations. From testimony received we know that the reverse is true. While in some cases the higher tonnage coming from Europe, under the workings of normal economic process, might justify higher rates than those from the United States to Europe, in reality, incoming rates are considerably lower than outgoing.

These findings logically lead to the key question of how adverse ocean freight rate differentials affect our U.S. balance of trade. Two years ago, we asked the Department of Commerce to conduct an investigation to ascertain the true dimensions of the impact of these differentials on our international trade.

On March 25, 1964, we received a brief progress report from Mr. Frank L. Barton, Deputy Under Secretary for Transportation, indicating that the studies were underway and that they would be ready sometime early in 1965. For those of you who wish to look up this reference it is at page 629 of the March 25, 1964, hearings.¹

¹ "Discriminatory Ocean Freight Rates and the Balance of Payments," pt. 4, hearings; Joint Economic Committee, 88th Cong., 2d sess., 1964.

In a few moments, we shall be privileged to hear from Dr. Andrew F. Brimmer, the Assistant Secretary of Commerce for Economic Affairs, on this subject. Dr. Brimmer is eminently qualified for this and for his many other responsibilities. He is a Harvard Ph. D., a distinguished scholar, and former professor at the Wharton School of Finance, University of Pennsylvania. We are delighted to have you here, Dr. Brimmer.

Mr. BRIMMER. Thank you, Mr. Chairman.

Chairman DOUGLAS. Our hearings have also brought to light the powerful role of the international shipping conferences as rate-fixing cartels, and have raised questions about their procedures and policies, as well as their impact upon the commerce of the United States.

At our request, the Department of Commerce has undertaken to develop additional information about shipping conferences and their mode of operation. We expect to hear something about the progress of these inquiries this morning.

A third, rather basic, factor in the freight rate complex is that of cost. What is the relation of shipping costs to freight rates, inbound and outbound? We have long suspected that this represents a fertile field for inquiry and, in consequence, have asked the Department of Commerce to enlighten us about this aspect of the question as well.

I understand that Mr. Lowell K. Bridwell, Deputy Under Secretary of Commerce for Transportation, will testify on the studies of international shipping and the cost factors.

Before asking Dr. Brimmer to begin his testimony, let me revert for a moment to an issue that arose at our hearing on May 27, when we heard from Adm. John Harlee, Chairman of the Federal Maritime Commission. At that time, Admiral Harlee publicly presented certain general conclusions based on inquiries made of foreign and domestic carriers.

When more specific questions arose, Admiral Harlee requested that the subcommittee hear him in executive session because of a commitment to hold prior discussions with the foreign-flag governments involved before divulging these data publicly.

At that time, this subcommittee gave Admiral Harlee and the Department of State a 30-day period in which to conduct whatever discussions with other countries were necessary. This period has now expired.

In my view, it is imperative that the exporters of this Nation have access to this information. Within the next 2 weeks, we shall announce the time and place of a meeting of the subcommittee to hear further testimony from the Federal Maritime Commission on these data, and to make public the studies that have been developed by them and there will be no further delays or postponements.²

Dr. Brimmer, you may proceed.

² Proceedings of the May 27 hearings, both the open session held in the morning and the executive session immediately following have been printed as pt. 2 of these hearings.

TESTIMONY OF ANDREW F. BRIMMER, ASSISTANT SECRETARY FOR ECONOMIC AFFAIRS, DEPARTMENT OF COMMERCE; ACCOMPANIED BY LOWELL K. BRIDWELL, DEPUTY UNDER SECRETARY FOR TRANSPORTATION; PHILIP E. FRANKLIN, TRANSPORTATION ECONOMIST IN THE OFFICE OF THE UNDER SECRETARY FOR TRANSPORTATION; ROBERT O'MAHONEY, DEPUTY ASSISTANT GENERAL COUNSEL FOR TRANSPORTATION, OF THE DEPARTMENT OF COMMERCE; AND DR. MORDECHAI KREININ, PROFESSOR OF ECONOMICS, MICHIGAN STATE UNIVERSITY

Mr. BRIMMER. Thank you, Mr. Chairman.

With your permission, sir, I would like to introduce my colleagues who will participate with me in the testimony today.

Chairman DOUGLAS. Yes; please do.

Mr. BRIMMER. To my immediate left is Mr. Lowell K. Bridwell, the Deputy Under Secretary for Transportation of the Department of Commerce.

Mr. Philip E. Franklin, transportation economist, in the Office of the Under Secretary for Transportation.

Mr. Robert O'Mahoney, Deputy Assistant General Counsel for Transportation, U.S. Department of Commerce.

And to my immediate right is Dr. Mordechai Kreinin, professor of economics, Michigan State University, East Lansing. As I indicate in my prepared statement, Dr. Kreinin worked with me on the preparation of the basic study on which I will report today.

The Department of Commerce appreciates this opportunity to present testimony on several studies we have made of problems associated with ocean freight rate differentials. These studies are:

First: The Effect of Ocean Freight Rate Differentials on the U.S. Balance of Trade—A Report on a Pilot Study.

Second: Ratemaking by International Shipping Conferences.

Third: Cost Factors in Ocean Shipping.

I will report on the first study, and the second and third studies will be reported on by Mr. Lowell K. Bridwell, Deputy Under Secretary of Commerce for Transportation.

My association with the question of ocean freight rates in relation to the balance of payments began in the spring of 1963. As a matter of fact, this was my first assignment after I was appointed Deputy Assistant Secretary for Economic Policy Review in May of 1963. This assignment arose because the principal analytical work in the Department of Commerce on the balance of payments is the responsibility of the Assistant Secretary of Commerce for Economic Affairs. The key organizational unit in the Department on which this function rests is the Balance of Payments Division of the Office of Business Economics which reports to the Assistant Secretary for Economic Affairs.

Moreover, my office provides the principal staff support for the Secretary of Commerce in his role as a member of the Cabinet Committee on the Balance of Payments. As you know, this Committee is under the chairmanship of the Secretary of the Treasury and it has overall

responsibility for the President's program to reduce the deficit in our balance of payments.

The studies on which we shall report today have been mentioned a number of times before the Joint Economic Committee or other committees of Congress. In addition, material has been provided for the record in connection with several specific inquiries. With the chairman's permission and the permission of the committee I would like to offer for the record a list summarizing this participation.

Chairman DOUGLAS. That will be done.

Mr. BRIMMER. Thank you, Mr. Chairman.

(The list subsequently furnished follows:)

Department of Commerce participation in the congressional investigation of ocean freight rate problems

Date	Item	Citation
May 2, 1963	Testimony by Walther Lederer, Chief, Balance of Payments Division, Office of Business Economics, U.S. Department of Commerce.	"Steel Prices, Unit Costs, Profits and Foreign Competition," hearings before the Joint Economic Committee, Congress of the United States, pp. 325-508 and 577-579, 88th Cong., 1st sess.
June 21, 1963	Testimony by J. W. Gulick, Deputy Administrator, Maritime Administration.	"Discriminatory Ocean Freight Rates and the Balance of Payments," hearings before the Joint Economic Committee of Congress of the U.S., 88th Cong., 1st sess., pp. 123-179.
June 21, 1963	"Commerce Department Activities Relating to Ocean Freight Rates."	Ibid. pp. 179-187.
July 12, 1963	Letter from the Secretary of Commerce to Hon. Paul H. Douglas, Chairman, Joint Economic Committee, concerning the policies of the Federal Maritime Commission with respect to the adherence of subsidized lines to conference-established steamship rates.	Ibid. pp. 196-197.
Mar. 25, 1964	Statement of Frank L. Barton, Deputy Under Secretary of Commerce for Transportation, Department of Commerce.	Ibid., pp. 605-639.
Apr. 28, 1964	Letter from the Under Secretary of Commerce for Transportation, Clarence D. Martin, Jr., in response to questions addressed to the Department of Commerce by Senator Douglas, by letter of Mar. 31, 1964.	Ibid., pp. 639-644.
Aug. 7, 1964	Statement by Richard H. Holton, Assistant Secretary of Commerce; including summary of ocean freight rate complaints, summary industry meeting comments on freight rate disparities, and detailed rate data for steam generating boiler industry.	"Review of Dual-Rate Legislation, 1961-64," hearings before the Subcommittee on Merchant Marine of the Committee on Merchant Marine and Fisheries, House of Representatives, pp. 471-504, 88th Cong., 2d sess., on the activities of the Federal Maritime Commission and its administration of the Shipping Act of 1916 and other laws under its jurisdiction.
Apr. 8, 1965	Statement of Nicholas Johnson, Maritime Administrator, before the Subcommittee on Federal Procurement and Regulation of the Joint Economic Committee.	"Discriminatory Ocean Freight Rates and the Balance of Payments," pt. 1, hearings before the Subcommittee on Federal Procurement and Regulation of the Joint Economic Committee, 89th Cong., 1st sess., p. 93.

Chairman DOUGLAS. Please continue.

Mr. BRIMMER. During the summer of 1963, the Department of Commerce completed a preliminary study of the interrelations between ocean freight rates and the balance of payments. This investigation in 1963 laid the foundation for our program of research and analysis which was designed primarily to assist this committee and the Federal Maritime Commission.

This research program got underway in February 1964, with the launching of a study of conference ratemaking practices and policies. In March of last year, Ernst & Ernst, an internationally recognized public accounting firm, was awarded a contract to do a pioneering study of ocean transportation costs.

Early in the fall of 1964, a pilot project was initiated to ascertain the feasibility of relating ocean freight rates to actual shipment as the key step in estimating the effect of ocean freight rate differentials on the balance of trade of the United States. This study undertaken in the fall of 1964 has been my principal responsibility and I will report on it in a few minutes.

While these studies were underway, the Department has also carried out research on some international aspects of the problem; this has included comprehensive statements on flag discrimination and shippers' councils which have already been presented to the Federal Maritime Commission. Also in connection with this Federal Maritime Commission inquiry, the Department has discussed with the Commission the preparation and publication of a handbook for shippers dealing with ocean freight rates and the functions of shipping conferences. This proposal has been described in testimony before the Federal Maritime Commission. Testimony has also been presented before the Commission on functions of the Maritime Administration in regard to cargo preference.

I would like to begin my own testimony with an analysis of the pilot study of the possible effects of freight disparities on the balance of trade of the United States.

Mr. Chairman, if it is permissible and convenient to the committee I would like to offer the study itself for the record and then I will talk from my notes which I have prepared in outline form highlighting the study itself and I will point up the main features of the study, the principal conclusions, and then I would go back into details if you want me to do that.

Chairman DOUGLAS. That is satisfactory. You may proceed.

Mr. BRIMMER. This study was prepared under my supervision although it involved participation by staff members in a number of areas in the Commerce Department. It was designed by Dr. Mordechai Kreinin, professor of economics, Michigan State University, as I mentioned earlier, who wrote the report.

But most of the statistical and preliminary analytical work was done in the Department of Commerce under the immediate supervision of Mr. Philip E. Franklin in the Office of the Under Secretary for Transportation. Mr. Gordon P. Smith, of the Office of the Under Secretary for Transportation, served as the freight rate specialist. Mr. Leonard R. Jackson, of the Bureau of the Census, handled selection of the sample. A fairly large number of other people in the Department also worked on the study. I particularly want to mention Mrs. Doris Groff and Mrs. Georgia Hunt who actually performed many of the computations in the Commerce Department. Finally, the staff of the Federal Maritime Commission was quite helpful in making rate data available to us.

Chairman DOUGLAS. We appreciate the services of your colleagues.

Mr. BRIMMER. With the chairman's permission, I would like to proceed with the study itself.

Chairman DOUGLAS. Proceed.

Mr. BRIMMER. We appreciate this opportunity to present this study which for the most part focuses exclusively on manufactured commodities. Now, in preparation for this we selected commodities as described in the standard international trade classification prepared by the United Nations.

This also has its parallel in the standard industrial classification prepared by the United States. In the study I indicate where these differences occur.

Basically, however, we are concerned with chemical manufactures, manufactured items classified chiefly by material, machinery and transportation equipment, and other manufactured commodities.

These represent different commodity groups. They are described in my study as appendix II. This lists in detail the types of commodities included in this study.

Now in table I of my study I show the share of manufactured items in the total U.S. trade and it will be noted from that table that manufactures account for somewhat under half of our imports and almost two-thirds of our exports, based on data for 1962.

The study then concentrates on manufactures.

Moreover, we want to look at international trade between the United States and advanced industrial countries. For all practical purposes this means Western Europe and Japan. Now, there is a reason for doing this.

In looking at the effect of ocean freight rate differentials on trade we would like to look upon these differentials as differences in prices on shipping. In other words, we use freight rates as prices.

We feel that the price mechanism applies far more in trade in manufactures than it does in semiprocessed goods or raw material. We exclude agricultural goods specifically because we feel that the role of the Government in agriculture reduces the effectiveness of the price system in this area.

In pursuing this analysis by focusing on manufactures and on trade with industrialized countries, we selected three trade routes. These show the direction of trade with industrialized countries and these trade routes are shown in the study. We deal with trade routes 5, 7, 8, and 9 as one route. These were separate trade routes but they were recently combined into one and when I refer to them, although there are four digits there, I really mean one trade route.

This is the trade route from the North Atlantic of the United States to the United Kingdom and the Continent. The routes themselves are described in a map which is appendix III of my study. There are three separate maps, each one showing a separate trade route.

The second trade route, trade route 6, is the U.S. North Atlantic coast to Scandinavia and the Baltic, and the third route is the trade route 12—the North Atlantic to Japan.

Chairman DOUGLAS. These are not the rates from the Pacific coast to Japan.

Mr. BRIMMER. Mr. Chairman, we had originally intended to do the trade route from the Pacific coast of the United States to Japan but it is not in our pilot study.

Chairman DOUGLAS. Do you intend to consider that later?

MR. BRIMMER. Mr. Chairman, as I mentioned toward the end of my statement, a more comprehensive study would include that trade route plus four others.

Chairman DOUGLAS. I see.

MR. BRIMMER. In proceeding with the study we asked the Bureau of the Census to select a small sample of commodities for the pilot project. Let me explain what we wanted. We wanted to be able to match actual shipping documents with freight rates. We did not want to select the freight rates and then see what we could find about movements along the route. We wanted to do it in reverse. We wanted to select the documents and then attach to it freight rates.

Chairman DOUGLAS. This is a very accurate example. I congratulate you.

MR. BRIMMER. Thank you. The Census Bureau selected the sample for this pilot study and I would like to stress, Mr. Chairman, that this is a pilot study. I have some reservations about it myself, but we proceeded on a pilot study basis and the Census Bureau selected 1,093 shipping declarations. These are broken down roughly as follows, in terms of the total number and routes, 632 for trade routes 5, 7, 8, and 9; 184 for trade route 6; and 277 for trade route 12. In terms of the type of shipment—that is type of declarations—we had a total of 689 import shipments broken down according to 331 along trade routes 5, 7, 8, and 9; 119 on trade route 6; and 239 on trade route 12.

Chairman DOUGLAS. I assume that your taking the actual shipping declarations was an attempt to get at the rates actually paid and go behind any published rates, is that correct?

MR. BRIMMER. Mr. Chairman. First of all, we wanted to get a good description of the commodities actually moving.

Chairman DOUGLAS. Yes.

MR. BRIMMER. We also wanted to get a feeling for the value of the commodities moving. And the third thing is that we wanted to obtain an accurate description of the commodity. Then—relying on the knowledge of our rate experts and the expert knowledge of the Federal Maritime Commission—we wanted to get a published rate which would fit this commodity description.

You see the declarations we have from the Census Bureau do not show the rates actually paid. So we had to look at the rates published by the conferences and listed in the tariff library of the Federal Maritime Commission. Now this is one of the reservations I have about this study because the rates assigned depend on our knowledge and the expertise of the Federal Maritime Commission using the description in the conference tariff.

We do think this has an advantage, Mr. Chairman, because in the past it has not always been possible to match up the description of the commodity in the tariff with the commodity in the Census declaration on which you have the value data shown.

The export declarations, numbering 404, are distributed among the three trade routes roughly as follows: 301 on routes 5, 7, 8, and 9; 65 on trade route 6; and 38 on trade route 12.

Having gotten the declarations, we then tried to assign three kinds of freight rates to each of the documents. We assigned these rates for inbound traffic and outbound traffic; that is, for imports and for exports.

We identified conference contract rates. These are principally the published rates with a discount for people who sign the long-term contracts with the conferences. These are roughly 15 percent below the conference noncontract rates. I will not go into the contracts.

The conference noncontract rates are those applicable to shippers who use the services of the conference but do not sign the contract.

Then we have nonconference rates.

Thus, for each shipment we have six freight rates assigned. Let me repeat again that, having collected this raw material, we wanted to look at the sample to see to what extent we could identify any sort of systematic variation in rate differentials.

Second, we wanted to test the data to see to what extent we could estimate the effects on the balance of trade of the United States of the removal of the rate differentials. In order to do that we had to make some rather clear assumptions. They are spelled out in detail, and I will come back to them.

Now, what do these data show? First of all for each declaration we had to obtain the free on board value of each shipment. This value was converted to a cost, insurance, and freight value by adding insurance and freight. We assigned, as I said, six freight rates for each shipment.

Then we made a number of arithmetic calculations. The first of these involved a calculation of freights as a percentage of the cost, insurance, and freight value. For this we used six different rates. Mr. Chairman, the result of these calculations are spelled out in detail in table 3 of the study.

Second, we calculated the freight differential as a percent of out-bound freight where seven types of differentials were presented, and you can see these spelled out in the table. And we calculated freight differentials as a percent of inbound freight.

I will not go into the calculations now. I will summarize them.

And finally, we calculated the freight differential as a percent of cost, insurance, and freight value of the shipment. I will make some use later of both of these results.

In these calculations, a positive differential means that the out-bound rates exceed the inbound rates.

Chairman DOUGLAS. Would you repeat that?

Mr. BRIMMER. I said in these calculations we define a positive differential as one in which the outbound rates—the export rates—are higher than the inbound rates—the import rates. These data relating to individual shipments were aggregated by use of weighted means. I would like to repeat that. The data related to individual shipments, 1,093 documents—the results relating to individual shipments were then aggregated by the use of weighted means, where the value of each shipment constituted the weight.

We wanted to make certain that these average rates reflected the quantities, or values, moving behind them. This was an attempt to avoid taking the paper rates as being representative. So the value of the shipment constituted the weight and then we got an aggregation of weighted means.

Chairman DOUGLAS. In other words, you wished to avoid the famous error of the Aldrich committee on weighted prices in the Civil War.

Each jackknife was treated as an independent item without giving any proportion to the value of the jackknives sold, whereas other commodities with much greater value were also considered as one unit.

Mr. BRIMMER. Well, Mr. Chairman, I was unaware of that historical reference, but our purpose was to avoid that.

Chairman DOUGLAS. I think this was done by Dr. Faulkner who is a professor at the Wharton School of Finance in the University of Pennsylvania where you taught before.

You avoided the mistakes of your predecessor.

Mr. BRIMMER. Thank you, Mr. Chairman. Perhaps you might send a letter up to my dean mentioning that. [Laughter.]

Mr. BRIMMER. Mr. Chairman, I would not want to wade through the maze of all of the rates. As I have said, they are shown in table 3 which presents the freight rates as percentages of the cost, insurance, and freight value. I would, however, like to mention the highlights of the table.

In that table, the last row gives these weighted averages I mentioned earlier. Ranking these results, from the highest to the lowest, for all of the routes, the following picture emerged.

First, the highest percentage is the conference noncontract outbound freight charge which was 4.97 percent of cost, insurance, and freight value. Let me repeat—the highest rate was conference noncontract outbound rate, which was 4.9 percent of cost, insurance, and freight value.

The second highest percentage was the conference contract outbound, 4.44 percent of cost, insurance, and freight value.

The third highest average rate was conference contract inbound, 3.7 percent; followed by conference contract outbound, 3.7 percent; nonconference outbound, 3.10 percent; and nonconference inbound, the lowest of the rates, 2.63 percent.

Chairman DOUGLAS. Can you summarize these?

Mr. BRIMMER. Yes. I summarize these by noting, first, Mr. Chairman, that the freight constituted between 3 and 5 percent of the landed value.

Second, in all of these averages the outbound rates exceeded the inbound rates. This tends to confirm some of the earlier conclusions reached in the investigation of this committee.

Chairman DOUGLAS. For the sake of emphasis would you repeat that?

Mr. BRIMMER. Yes. I made two observations on these data. First, taking the weighted average rate based on 1,093 observations and looking at the three trade routes together, these data indicated that freight costs constitute between 3 and 5 percent of the landed value.

Second, in all of these averages the outbound rates exceeded the inbound rates. These were the conclusions I reached from these figures.

Chairman DOUGLAS. Very significant.

Mr. BRIMMER. Now, in table 4—

Chairman DOUGLAS. These are high-priced goods, aren't they?

Mr. BRIMMER. Looking at the description of them, Mr. Chairman, one would have to conclude that these are basically the high-value manufactured items.

Chairman DOUGLAS. On the low value bulk commodities shipping rates would be a much larger percentage of price, would they not?

Mr. BRIMMER. One would think so, Mr. Chairman, but—I would think so, Mr. Chairman, but we did not examine that category of commodities.

Chairman DOUGLAS. You are probably taking the commodities where freight rates have the least influence on price; is that true?

Mr. BRIMMER. One would think so—one could infer, Mr. Chairman—

Chairman DOUGLAS. I believe that commonsense has a place in life as well as statistics. Is it true that in the bulk commodities the shipping cost is a higher percentage of price, than in the commodities which have high volume and small bulk?

Mr. BRIMMER. It—

Chairman DOUGLAS. I know you are very cautious.

Mr. Brimmer. This certainly could be true, Mr. Chairman. I was not trying to evade the question, I was only trying to be judicious.

Chairman DOUGLAS. You are very cautious and extremely scientific.

Mr. BRIMMER. Mr. Chairman, while I concentrated on manufactured items as the list of commodities shows, we do have some heavy items in here because steel is in here, steel mill parts are included—they are bulky.

Now, I spell out in somewhat greater detail in table 4, the same conclusion reached on the basis of the summary table 3 in the report. I will simply say again that the conclusions are similar: Outbound rates tend to be higher than inbound rates.

Chairman DOUGLAS. I think you might make another generalization that nonconference rates would be lower than conference rates.

Mr. BRIMMER. That is correct and I also said that the nonconference rates both inbound and outbound were the lowest in the group. If I were to make an attempt to explain this I would suggest that the nonconference rates are more likely to reflect competitive forces than the conference rates. However, I would not want to anticipate too much the description of the behavior of conferences which my colleagues will set before you.

Chairman DOUGLAS. Thank you.

Mr. BRIMMER. Our next calculation—freight rate differential as a percentage of freight. The first set of calculations I described dealt with freight as a percentage of value of shipments.

Now, I wish to deal with freight differentials as a percentage of freight. The results of those calculations are shown in tables 5, and 6. Those two tables are back to back and the results are spelled out in some detail. However, I can summarize briefly as follows:

The differential as a percent of inbound freight can be calculated using a number of references. First, the conference contract outbound can be compared with the contract inbound, contract inbound, and nonconference inbound.

In other words, the first calculations dealt with the conference non-contract outbound rates compared with three other rates. These data show that as a percentage of freight the conference contract outbound rate was about 39 percent higher than the contract inbound rate.

In other words, taking the two conference rates together, contract rates, the outbound and the inbound, how did the contract outbound compare with the contract inbound? Conclusion—it was about 39 percent higher.

Chairman DOUGLAS. Let the record emphasize that 39 percent higher on outbound than on inbound.

Mr. BRIMMER. The same comparison shows that the conference contract outbound rate essentially showed the same percentage—say 40 percent higher than the noncontract inbound. Now let me repeat that—the conference contract outbound rate was about 40 percent higher than the noncontract inbound rate. In other words, the noncontract inbound and contract inbound compared to the contract outbound were about the same.

Chairman DOUGLAS. In other words, there was no difference.

Mr. BRIMMER. Essentially no difference. However, the conference contract outbound rate was about 59 percent higher than the nonconference inbound rate.

I will repeat that—the conference contract outbound rate—

Chairman DOUGLAS. That is a puzzle.

Mr. BRIMMER (continuing). Was about 59 percent higher than the nonconference inbound rate. In other words, this reflects the presumption that the nonconference inbound rates were substantially lower.

And I have done the same thing, Mr. Chairman, for the conference noncontract outbound compared with the same three rates and they are in the records.

Chairman DOUGLAS. We will ask Mr. Boggs to question on this point.

Mr. BOGGS. Dr. Brimmer, the only thing I would like to bring out is that in reference to the noncontract outbound rate, it appears substantially higher than the comparison between the nonconference and the conference rate on the inbound; is that correct?

Mr. BRIMMER. It does.

Mr. BOGGS. That seems to indicate that the outbound shipper used the dual rate contract more than the inbound shippers.

Mr. BRIMMER. This seems to be implied, Mr. Boggs.

Mr. BOGGS. So the discrimination is really greater if the American shipper does not have a contract with the conference.

Mr. BRIMMER. It appears to be the case.

Chairman DOUGLAS. Even those who have special agreements have a 40-percent differential operating against them.

Mr. BRIMMER. Compared with the inbound.

Chairman DOUGLAS. And those who do not have a special arrangement have some 60-percent differential operating against them.

Mr. BRIMMER. Mr. Chairman, let me emphasize further our findings with reference to the conference noncontract outbound rates—that is, looking at the rates listed by the conferences for shippers from the United States to Western Europe and Japan. Taking these conference routes together, on the average, the export rates offered by the conference for noncontract shippers were about 68 percent above the contract inbound rates; it was about 52 percent above the noncontract inbound rates and 88 percent above the nonconference inbound rates.

Chairman DOUGLAS. Dr. Brimmer—those are startling statistics—would you repeat that?

Mr. BRIMMER. I am now looking at the published rates, the rates offered by the conference to noncontract exporters. I compare those rates with the contract inbound rates, or the rate offered by the conference to importers using the contract.

Now, the difference was 68 percent. The noncontract outbound was 68 percent above the contract inbound. Compared with the noncontract inbound, the conference noncontract rate outbound was 52 percent higher, and the conference noncontract outbound rate was 88 percent above the nonconference inbound rate.

Chairman DOUGLAS. So whatever comparison you make—

Mr. BRIMMER. The general tendency is there.

Chairman DOUGLAS. The outbound rates are appreciably higher than the inbound.

Mr. BRIMMER. That is correct.

Chairman DOUGLAS. Ranging from 40 to 88 percent.

Mr. BRIMMER. That is the range so far.

Chairman DOUGLAS. Thank you.

Mr. BRIMMER. The nonconference outbound rate was also compared with the nonconference inbound rate. In other words, these are the rates outside of the conference system. The nonconference outbound rate was 37 percent higher than the nonconference inbound rate.

Chairman DOUGLAS. It was still higher but the differential was not as great as in the case of the conference rate.

Mr. BRIMMER. That is correct, Mr. Chairman, and the rate I have just cited, 37 percent, is the lowest we have seen in this array by a few percentage points.

Now, we could not in this pilot study make all the other weights and other kinds of calculations we wanted, so we took an average of the rates we have mentioned so far. I have described some six rates, seven differentials, and I took an average of them. This showed that the outbound rates were, on the average, 56 percent higher than inbound rates.

Chairman DOUGLAS. Let us repeat that again for the record. I only wish the Government printers would let us use italics or red ink!

The outbound rates on the average are 56 percent higher than the inbound rates.

Mr. BRIMMER. Now, Mr. Chairman, we also made the same kind of calculations for outbound rates compared with the array of inbound rates which I described earlier. And the average there was 14 percent. On the average, inbound rates were about 14 percent—I am sorry, on the average the outbound rates were about 14 percent below.

I can go through these in some detail in table 6 if you want to follow these. There is quite an array and I would not want to—I am sorry, in table 5—if you will look at table 5, Mr. Chairman—what I have done is turn it around.

Mr. Chairman, I am sorry to have misled you. I do not have all the details behind table 5, and I will supply that to you.

Chairman DOUGLAS. Will you submit that for the record?

Mr. BRIMMER. I will submit that for the record. Thank you, sir. (The following was subsequently received:)

Certain changes have been made in the report on the effect of ocean freight rate differentials on the United States balance of trade which follows this testimony. These changes, which are designed to clarify the report, should make table 5 easier to understand.

Mr. BRIMMER. Mr. Chairman, the other thing we tried to do was to see to what extent the freight differential came as a percentage of c.i.f. value.

Chairman DOUGLAS. You took these percentage differentials and applied them to—

Mr. BRIMMER. To c.i.f. values rather than to freight rates.

Chairman DOUGLAS. For the record would you state the meaning of c.i.f.?

Mr. BRIMMER. This is cost, insurance, and freight.

Chairman DOUGLAS. That is it?

Mr. BRIMMER. This is the wholesale value of the commodity to which you add the charges for the insurance and the charges for freight.

With your permission, Mr. Chairman, I would not go through the step-by-step details. Let me say that we followed the same procedure I described earlier.

Chairman DOUGLAS. You have checked your figures?

Mr. BRIMMER. We calculated the differentials as a percentage of the value of the shipment and then aggregated these differentials and took an average. The results showed that the differential as a percentage of value—the inbound differential, was about two and a half percent of the value. And that is they key number I want to stress here because I would want to make some use of it subsequently.

Let me repeat—that the inbound differential was about two and a half percent of value.

Chairman DOUGLAS. A lot of people would say that is merely two and a half percent. Why pay any attention to it?

Mr. BRIMMER. Mr. Chairman, if you permit me to forecast the next step—I was going to translate the two and a half percent into a dollar amount.

Chairman DOUGLAS. We had a debate on the floor of the Senate yesterday where some people dismissed a hundred million dollars as being just a matter of indifference. My Scotch blood rebels at that.

Mr. BRIMMER. Using the same procedure, we took the outbound differential as a percentage of value and this yielded a percentage of 0.7. In other words, just under 1 percent, seven-tenths of 1 percent.

Mr. Chairman, I then took these two percentages which I have mentioned last and asked this question: What if we assume that freight rate differentials constituted about two and a half percent of the value of imports?

And what if we assume that such differentials constituted about seven-tenths of 1 percent of the value of exports? We could use those two percentages along with some assumptions about the responsiveness of consumers in this country and abroad to changes in the price of imported commodities to an estimate of the effects of ocean freight rate differentials on the balance of trade of the United States.

I would like to stress that this is a focus on balance of trade and not on balance of payments. We did not use the transportation accounts.

Chairman DOUGLAS. But the balance of trade is one very important item in the balance of payments—perhaps the most important.

Mr. BRIMMER. It is the most important.

I asked three questions, Mr. Chairman, concerning the way we might proceed in wiping out the differential. To highlight the estimating procedure, Mr. Chairman, I have a table which is not in the paper, but it is a good summary of the procedures employed.

(The table referred to appears below:)

Procedure for estimating the effects of ocean freight rate differentials on the U.S. balance of trade

[Freight rate differentials as percent of c.i.f. value, imports, 2.5 percent; exports, 0.7 percent]

Means of closing differential	Assumed percentage changes in—		Elasticity coefficient		Effect on volume of trade		Effect on value of trade	
	Freight rates	Landed prices	Demand	Supply	Imports	Exports	Imports	Exports
Case I: Raise inbound rates to equal outbound; no absorption of price.	<i>Percent</i> +56	+2.5 percent (U.S. imports)	-3.17 percent (U.S. imports)	Zero (Europe and Japan)	<i>Percent</i> -3.17×2.5 = -7.9	<i>Percent</i> -----	-7.9 percent \times \$4,800,000,000 = -\$380,000,000	
Case II: Raise inbound rates to equal outbound; exporters absorb 50 percent of price increase.	+56	+1.25 percent (U.S. imports); -1.25 percent (exports, foreign)	-3.17 percent (U.S. imports)	Above zero (Europe and Japan)	$-3.17 \times 1.25 =$ -3.9625	-----	(103.9625 \times 101.25) -100 = 5.262 percent \times \$4,800,000,000 = -\$253,000,000	
Case III: Reduce outbound rate to equal inbound.	-14	-0.7 percent (U.S. exports)	-2 percent (foreign demand for U.S. exports)	Infinite (United States)	-----	$2.0 \times 0.7 =$ +1.4	-----	+1.4 percent \times \$4,200,000,000 = \$60,000,000

¹ U.S. import statistics are reported at f.o.b. prices, and foreign export prices would decline by 1.25 percent.

Mr. BRIMMER. I believe Mr. Boggs has a copy of that summary table and with your permission I would like to spell out rather quickly how we got the estimates. The effect on the balance of trade depends on the assumptions we made about the way we remove the differentials. Of course, I am not getting into the advisability of doing this. I am simply describing the procedure we used.

First, if we assume that we remove these differentials by raising inbound rates to equal outbound rates—in other words, we know that inbound rates on the average are about 56 percent—I am sorry, that outbound rates were about 56 percent above inbound rates—raise them, raise the inbound rate then by 56 percent.

What did we expect to happen? Well, as I mentioned earlier, this would be equivalent to raising the landed price by two and a half percent. The way American consumers of imported goods would respond is a vital question. We have assumed that this response would depend on two things—first, how will the foreign exporters, those who are shipping goods to the United States, respond? We have assumed that they would not absorb any of the price increase; they would pass it on.

The reasons for that roughly are as follows: We might assume initially that foreign producers of manufactured items have little excess capacity. They could not expand output readily, so they pass on the higher cost to the American buyer.

Mr. Chairman, this is the equivalent of saying in technical terms that the elasticity of supply in Europe and Japan is zero. We also assume that the demand for imports in this country is responsive to price changes. We have tried to give a numerical estimate of this response.

We have looked at the literature at some length and we think that an estimate of minus 3.17 percent is a fairly good index of the responsiveness of American buyers of imports to a change in the price of imported commodities.

Chairman DOUGLAS. On manufactured goods.

Mr. BRIMMER. On manufactured goods.

Chairman DOUGLAS. I think this is the first time that I have ever seen a coefficient of elasticity of demand for manufactured goods.

Mr. BRIMMER. Mr. Chairman, it is one that has been deduced, as I mentioned in the paper itself, by looking at the literature rather extensively and I have a paper which is not quite ready for submission. When it is finished I would be glad to put it into the record.

Chairman DOUGLAS. I wish you would.

(Dr. Brimmer subsequently supplied the following material:)

To: Dr. Andrew F. Brimmer, Assistant Secretary for Economic Affairs.

From: Professor M. E. Kreinen, Department of Economics, Michigan State University.

Subject: Review of the literature of elasticities of import demand.

In previous contributions, two general approaches have been used for deriving elasticities of import demand—a direct and an indirect procedure. The former relies on the statistical estimation of import demand elasticities from data on imports, incomes, and prices; or alternatively, utilizes information provided by commodity experts. By contrast, the latter derives an estimate of import demand elasticities on the basis of information on elasticities of domestic demand and supply and the share of imports in domestic consumption and production.¹

¹ The formula employed is $N_m = (O_d/O_m)e_d + (O_s/O_m)e_s$, where O_d refers to domestic consumption, O_s to domestic supply, and O_m to imports, while e_d and e_s are the price elasticity of demand and supply, and N_m the import demand elasticity.

The second method has been employed by Stern in estimating possible changes in American imports following an elimination of tariffs, and by J. E. Floyd in appraising the effects of a devaluation of the dollar on trade flows.² For various reasons, we have decided against the application of this method. To begin with, while estimates on domestic demand elasticities are available for various categories of consumer goods and a few intermediate products in the United States and the United Kingdom, little is known of the elasticity of demand for investment goods which account for an important part of international trade. In other industrial countries, estimates for consumer goods are also scarce. At the same time, there are but few estimates of domestic supply elasticities of nonagricultural commodities. Also, the comparability of trade and production (consumption) statistics can be established only in the case of the United States.

In addition, the indirect method is open to objections by reason of its implicit assumptions regarding product homogeneity and transportation costs. If we take account of product differentiation and the distance factor, there is no presumption that the percentage increase in trade following a reduction of duties will be proportional to the ratio of domestic consumption to imports as this method postulates. The small share of imports in consumption may be due to national product differentiation or high transportation costs rather than to protection; correspondingly, a large increase in imports indicated by the method cannot be expected.

However, the direct estimation of import demand elasticities has deficiencies of its own. The difficulties and error possibilities of estimation have been discussed in some detail elsewhere and need not to be taken up here.³ It may be sufficient to note that the estimates obtained by the use of least-squares method generally have a downward bias, while no way has been devised to measure the size of this bias.

As to actual estimates, in the case of the United States the recent calculation of Ball and Maywah appear to be the most reliable. These authors applied regression analysis to quarterly data covering 11 postwar years and estimated import demand elasticities for five commodity groups, three of which are relevant for our discussion: -0.26 for crude materials, -1.38 for semimanufactures, and -3.50 for finished manufactures. But, as the authors note, these estimates provide lower limits. As "upper bounds" they suggest the use of: -0.53 or -0.65 for crude materials, -1.89 or -2.15 for semimanufactures, and -4.74 or -5.28 for finished manufactures—obtained by adding two and three standard errors, respectively, to the last square estimates.⁴

Ball and Maywah's estimates relate to the effects of changes in relative prices on imports over time. Measured changes in prices, however, in part reflect changes in quality since import price indices are calculated by dividing an index of import values by an index of import volumes. Quality changes, then, contribute to the errors of observation, when errors in the independent variable are known to cause a downward bias in the estimated coefficients. This source of bias can be avoided if we consider the relationship between changes in tariffs and in imports, while further sources of bias can be removed if cross section comparisons are made.

The latter procedure has been applied by M. E. Kreinin and L. B. Krause. Kreinin compared data for two groups of commodities, classified according to whether or not they have been subject to tariff reductions. The elasticities implicit in his results are -5 for commodities excluding textiles⁵ in the period 1954-56 and -6 for finished manufactures in the period 1955-59. In turn, a cross section analysis of 91 categories of manufactured goods, Krause obtained "tariff" elasticity estimates of -5.6 for the period 1947-54, and -4.5 for 1947-58, while the elasticity of -0.5 , estimated for 1954-58, was not statistically sig-

² Robert M. Stern, "The U.S. Tariff and the Efficiency of the U.S. Economy," *American Economic Review*, Papers and Proceedings, May 1964, pp. 459-470. J. E. Floyd, "The Overvaluation of the Dollar," *The American Economic Review*, March 1965, pp. 95-106.

³ E.g., Guy H. Orcutt, "Measurement of Price Elasticities in International Trade," *Review of Economics and Statistics*, May 1950, pp. 117-132, and Arnold C. Harberger, "A Structural Approach to the Problem of Import Demand," *American Economic Review*, May 1953, pp. 148-159.

⁴ R. J. Ball and K. Maywah, "The U.S. Demand for Imports, 1948-58," *Review of Economics and Statistics*, November 1962, pp. 395-401.

⁵ Textiles have been excluded because imports from Japan had been subject to voluntary export quotas.

nificant.⁶ At the same time, with the exception of the latter period, the elasticity of demand for imports calculated with respect to the tariff change was considerably higher than the elasticities calculated with respect to price.⁷

Kreinin's and Krause's results point to the conclusion that a reduction in tariffs is likely to have a larger effect on imports than an equivalent change in export prices—a phenomenon which requires explanation. Aside from the downward bias in least-squares estimates of price elasticities, it may be that importers regard tariff changes as permanent and reallocate their purchases accordingly, while changes in export prices are often considered transitory. Also, a ratchet-effect could be operative in the second case: once purchases are accommodated to a lower import price, habit formation or simply the acquired knowledge of foreign goods may limit the shift back to domestic commodities. On the other hand, we have but few instances of raising tariffs in the postwar period.

Further evidence on the responsiveness of imports to changes in tariffs is provided in a study by A. B. deVries. DeVries calculated implicit "tariff" elasticities for 176 products on the basis of information provided by commodity experts regarding the possible long-term effects on U.S. imports of an assumed reduction—or increase—of the 1939 U.S. tariffs by one-half. For all commodities, taken together, the weighted average of elasticities is -2.2 for a reduction, and -2.7 for an increase in duties. At the same time, for the three product groups of the Ball-Mavwah study, the following elasticities have been obtained: crude materials, -1.3 ; semimanufactures -3.1 ; and finished manufactures -3.9 .⁸

These results, taken together, suggest that Ball and Mavwah are likely to be correct in arguing that their estimates represent a lower limit of possible values. Although available information does not provide a precise indication for selecting appropriate values within the range indicated, the addition of one standard deviation to Ball and Mavwah's estimates may provide a reasonable compromise that is also in conformity with deVries' results for the commodity group that has primary importance for the present study—finished manufactures. The corresponding elasticities are: crude materials -0.39 , semimanufactures -1.63 , and finished manufactures -4.12 .⁹ In making calculations on the possible expansion of imports following reductions in tariffs, we have assigned an elasticity value to each three-digit SITC commodity group depending on whether it contained crude materials, semimanufactures, or finished manufactures. For groups which consisted of two or three categories, an average elasticity was estimated, using U.S. imports of each category as weights.

Estimates on import demand elasticities for Western Europe and Japan are few and far between. Calculations prepared in the postwar period showed elasticities around unity in regard to total imports, while higher values obtain if agricultural products are excluded.¹⁰ These estimates are subject to a substantial downward bias, however, and for present purposes more reliance can be placed in the results of recent studies that have examined the effects of changes in duties on imports. With regard to the United Kingdom, M. F.G. Scott found that in the 1931-32 period, a 1. percentage point rise in tariffs was accompanied by a fall in the imports of manufactured goods of 4.3 percent.¹¹ In turn, in a study of the

⁶ Aside from the question of statistical significance, for purposes of the present study the result for the periods 1947-54 and 1947-58 are of primary interest since tariff reductions were concentrated in the 1947-54 period.

⁷ The price and tariff elasticities, with their standard errors in parenthesis, are as follows:

	Price elasticity	Tariff elasticity
1947-58.....	-1.77 (0.32)	-5.64 (2.11)
1947-54.....	-1.54 (0.31)	-4.49 (1.83)
1954-58.....	-1.32 (0.21)	-0.52 (0.28)

Cf. B. Krause, "United States Imports, 1947-58," *Econometrica*, April 1962, pp. 221-238.

⁸ B. A. deVries, "Price Elasticities of Demand for Individual Commodities Imported into the United States," International Monetary Fund Staff Papers, April 1951, pp. 397-419.

⁹ For purposes of comparison, we have also made calculations by using the "lower limit" elasticities.

¹⁰ Cf. e.g., A. C. Harberger, "Some Evidence on the International Price Mechanism," *Journal of Political Economy*, December 1957, pp. 506-521.

¹¹ M. F.G. Scott, "A Study of United Kingdom Imports," Cambridge, at the University Press, 1962, pp. 168-169.

effects of unilateral tariff reductions undertaken by Germany in 1956 and 1957, J. Wemelsfelder derived an import demand elasticity of -9 .¹²

Although the estimates of Scott and Wemelsfelder indicate the responsiveness of imports to the lowering of tariffs in European countries, they are of limited usefulness for selecting appropriate values of import demand elasticities for the purpose at hand. For one thing, the results are sensitive to conditions of capacity utilization existing in the periods under consideration; for another, estimates are not available for all the major countries in Western Europe and for Japan. Also, the existing estimates do not provide an appropriate commodity breakdown. Consequently, we have derived the elasticity coefficients used in this study by way of analogy.

Various considerations indicate that import demand elasticities are likely to be lower in European countries and Japan than in the United States. To begin with, under the assumption of identical domestic demand elasticities in all areas, the import demand elasticity would be negatively correlated with the share of imports in domestic consumption. This priori relationship, mentioned above, is indicated empirically by deVries' results. His study shows that U.S. import demand elasticities average about -2 for commodities in which the ratio of imports to domestic consumption exceeds 27 percent (the average for all 176 products), while the corresponding figure is -3.4 for products where the import-consumption ratio is below the average.¹³ Since the share of imports in domestic consumption is considerably smaller in the United States than elsewhere, import demand elasticities are expected to be lower abroad than in the United States.

Further, a comparison of capacity utilization and unemployment rates indicates that domestic supply elasticities are higher in the United States than elsewhere, contributing, thereby, to relatively higher U.S. import demand elasticities. Finally, although domestic demand elasticities for consumer goods may not differ much among countries, it may be suggested that demand for the technologically advanced American goods, which lack foreign substitutes, is likely to be rather inelastic in the other industrial economies.

Chairman DOUGLAS. Isn't it true that this is the first published study of elasticity of demand for manufactured goods as a whole?

Mr. BRIMMER. Mr. Chairman, there have been several studies to my knowledge and I do not wish to overreach here—

Chairman DOUGLAS. I have fallen behind.

Mr. BRIMMER. I think to my knowledge it is the first time that it has been introduced into a discussion of this question before this committee.

Chairman DOUGLAS. You feel quite certain that you have a pretty good estimate?

Mr. BRIMMER. I feel certain that we have a pretty good estimate. It is one used in a number of other kinds of studies.

Chairman DOUGLAS. The significance of this is that you estimate that each increase of 1 percent in price will be a decrease of $3\frac{1}{6}$ percent in quantity demanded.

Mr. BRIMMER. That is correct.

Chairman DOUGLAS. And, therefore, since you estimate that the increase of price because of freight differentials will be two and a half percent, the decline in total demanded will be $3\frac{1}{6}$ multiplied by $2\frac{1}{2}$ which equals 7.9 percent.

Mr. BRIMMER. That is correct, Mr. Chairman, a 7.9-percent decrease in the volume of trade.

Chairman DOUGLAS. In manufactured goods.

Mr. BRIMMER. In manufactured goods, that is correct, Mr. Chairman.

¹² J. Wemelsfelder, "The Short-Run Effects of the Lowering of Import Duties in Germany," *Economic Journal*, March 1960, pp. 94-105.

¹³ B. A. deVries, "Price Elasticities of Demand for Individual Commodities Imported into the United States," *op. cit.*, p. 413.

Chairman DOUGLAS. How much does this come to in dollar terms?

Mr. BRIMMER. In dollar terms, you might recall that manufactured imports in the year shown in our table amounted to \$4.8 billion. So we take 7.9 percent of \$4.8 billion and get \$380 million.

Chairman DOUGLAS. In other words, there would be a diminution of imports of approximately \$380 million, on these assumptions.

Mr. BRIMMER. On these assumptions.

Chairman DOUGLAS. Thus, we are subsidizing imports to that extent.

Mr. BRIMMER. It certainly does appear that there is an advantage to imports of that amount.

Chairman DOUGLAS. You use scientific terminology—we are subsidizing imports to the extent of \$380 million.

Mr. BRIMMER. Thank you, Mr. Chairman.

Now Mr. Chairman, that appeared to be a strong assumption so we asked—how would it look if we made a reasonable assumption which is somewhat weaker. Why not assume that the foreign shippers would share that increase in price? They would absorb some and pass some on. This seemed somewhat weaker, but somewhat more reasonable as an assumption.

In this case, we made the assumption that they would split the difference. There would be a 2½-percent increase in price, and they would absorb 1.25 percent and pass on 1.25 percent.

Using that calculation—this works out to be a decrease in imports of \$253 million, smaller than the \$380 million, but a sizable figure.

Finally, Mr. Chairman, we asked what would happen if we did not work on raising inbound to equate with outbound rates but followed the opposite procedure of reducing the outbound rates to equal the inbound rates.

In other words, we are now working on the side of exports. We had seen earlier that this step would be the equivalent of reducing export rates by 14 percent. Translated into the approximate value of landed goods, export prices would go down by seven-tenths of 1 percent.

Chairman DOUGLAS. I am a little puzzled here, Dr. Brimmer. Wouldn't the reduction be greater than this?

Mr. BRIMMER. Greater than \$253 million?

Chairman DOUGLAS. Reduced by 14 percent.

Mr. BRIMMER. I am sorry—I believe not, Mr. Chairman, I think that is the right number which I had given earlier.

Chairman DOUGLAS. It is the last table in your special appendix.

Mr. BRIMMER. Table 5, Mr. Chairman. If you look at the bottom part of that table, part B, you will see the freight differential as a percentage of freight. That is the title of the table—and aggregating those 7 differentials—2 minus and 4 positive, you get an average of 14.

Chairman DOUGLAS. Fourteen is the average.

Mr. BRIMMER. That is correct. Thus, the rates would go down by 14 percent, and U.S. export prices would decline by about seven-tenths of 1 percent.

Here we made two assumptions about elasticity. The first one is that the foreign demand for U.S. exports is less than the U.S. demand for foreign exports. This says that foreigners are much more dependent on U.S.-manufactured goods than we are on foreign-manu-

factured goods, so there is a lower elasticity of foreign demand for U.S. exports than there is of U.S. demand for foreign exports.

And we estimated about 2 percent and that, too, is in the same memorandum I will submit for the record.

Chairman DOUGLAS. You assumed a much greater elasticity of supply for American goods than for foreign goods.

Mr. BRIMMER. That is true.

Chairman DOUGLAS. Does this take into consideration the existence of surplus capacity in this country?

Mr. BRIMMER. It does. And also the second reason is that exports represent such a small share of our total production.

Chairman DOUGLAS. Some people would argue that a large high capital capacity and an increase in output would lower unit costs and therefore do even better than have an elasticity at a constant price but actually have negative elasticity.

Mr. BRIMMER. The logic certainly seems clear.

Chairman DOUGLAS. You don't go as far as that.

Mr. BRIMMER. I would not go that far—but I would go in that direction.

Chairman DOUGLAS. There is a very good chance that it would result in decrease in unit cost.

Mr. BRIMMER. I would think so, Mr. Chairman. Thank you.

The results again, sir, are spelled out. This would mean an increase in the volume of U.S. exports by about 1.4 percent. The result is multiplied by the elasticity coefficient of 2.0, showing the elasticity of foreign demand for U.S. exports, compared with an elasticity of 3.17 for U.S. demand for imports from abroad.

In terms of the volume and value of the trade involved—

Chairman DOUGLAS. Just a minute—you introduced a new element—elasticity of demand for American goods abroad.

Mr. BRIMMER. Yes, I did.

Chairman DOUGLAS. And you have a coefficient of 2 compared with a coefficient of 3.16 for elasticity of demand for European goods in the United States.

Do you have confidence in this figure of 2.0?

Mr. BRIMMER. I have confidence, Mr. Chairman. I will include a discussion of how we got that figure and why I am confident in more detail in the paper I will submit for record. In the meantime I do have a brief description of it in the paper before you.

Chairman DOUGLAS. Thank you, very much.

Mr. BRIMMER. The result of this calculation, using 2.0 elasticity of demand for U.S. exports and a price decrease of seven-tenths of 1 percent, is an increase in the value of exports of \$60 million.

The value of manufactured exports in the year considered in the table is \$4.2 billion. Mr. Chairman, I would like to stress again that the estimates we have given of the dollar pay-out, in freight rates, are simply an order of magnitude.

This sample is not as representative as we would like. We have not covered all the trade routes and we have not gone into detail with all of the commodity groups. It is a broadbrush attempt.

We feel that a much more comprehensive study could be done based on eight trade routes, and I spell this out in my report, but it would

require a much broader coverage of at least—say roughly 9,000 observations along the trade routes.

Mr. Chairman, with your permission I would like to conclude this part of my statement and I stand ready to answer any additional questions you might have.

Chairman DOUGLAS. You made a very fine statement, Dr. Brimmer. I want to congratulate you and your associates for the work that you have done.

I have been out of touch with this field for some years but I think it is a truly extraordinary contribution to science as well as to public policy.

Mr. BRIMMER. Thank you, Mr. Chairman.

Chairman DOUGLAS. I want to thank each and every one of you who worked on the study and I hope the staff will send to the Department of Commerce a letter indicating our appreciation.

Mr. BRIMMER. Thank you.

Mr. BOGGS. Just let me clarify one point on your last statement. Am I right in assuming that we had a balance of trade deficit on those routes of approximately \$600 million?

Mr. BRIMMER. A balance of trade deficit on manufactured items?

Mr. BOGGS. On those routes—of \$600 million.

Mr. BRIMMER. Yes, we imported \$600 million more along those routes for these commodities—however it does not follow, Mr. Boggs that we had a deficit in all our trade along these routes.

Mr. BOGGS. But on the commodities, the manufactured commodities, we had a trade deficit of approximately \$600 million.

Mr. BRIMMER. Yes.

Mr. BOGGS. If you eliminate what the Senator referred to as the rate subsidy, you eliminate over 50 percent of that deficit, is that right?

Mr. BRIMMER. If these were representative, that would be true.

Mr. BOGGS. Would you estimate that if you included more than manufactured commodities in the \$380 million figure this would be substantially higher?

Mr. BRIMMER. I don't think so, Mr. Boggs, because the responsiveness of these other kinds of items to price changes would be substantially less. Compared with our elasticities of 3.17 and 2.0, we think that the elasticity—and notice how I put this—we think that the elasticity figure for non-manufactured items would be substantially less.

It may be even less than 1. For the same change in price we would get less of a decrease.

Mr. BOGGS. But it would appear to be considerably higher in terms of value—you have an offsetting—

Mr. BRIMMER. You have an offsetting effect and what the exact trade-off would be I cannot tell.

Chairman DOUGLAS. Suppose the rates were to meet halfway—that the inbound rates be raised one-half the distance between their present rates and the outbound rates, and the outbound rates be reduced by one-half.

Mr. BRIMMER. If that were done, Mr. Chairman, the result would depend on the distribution of commodities by value behind these rates. If we simply cut each rate but the commodity to which it applied was small, then we might not end up dividing the difference in half.

Chairman DOUGLAS. You have not run this study through the computers?

Mr. BRIMMER. We have not done this.

Chairman DOUGLAS. This was not done with computers.

Mr. BRIMMER. Actually, Mr. Chairman, this one was not. You will recall that at the beginning of my testimony I mentioned in some detail the names of the people who worked on this.

These names among my colleagues are the people who sat at their desks with their calculators and this was done by the old-fashioned method and I thought they ought to be acknowledged for this.

Chairman DOUGLAS. It is all the more remarkable.

Mr. BRIMMER. This partly accounts for the long time—we undertook it in the fall of 1964 and we are just getting the results. There are reasons for this, Mr. Chairman. We talked it over very thoroughly about putting this on the computers and we decided that we had not matched the rates and the commodities sufficiently so that we knew enough about it and we did not want to run into a situation of having the computer tell us something which we knew was nonsense.

So we wanted to work out the pilot program by hand. If we undertake the big study with some 8,000 to 10,000 observations we would certainly go on the computer.

Chairman DOUGLAS. How long did this take? How many man-hours?

Mr. BRIMMER. Excuse me—I just have a quick calculation—just roughly there were say about three—say four people who have worked since last October on it full time on the calculations.

Chairman DOUGLAS. Roughly 6,000 man-hours?

Mr. BRIMMER. Not quite 6,000 man-hours. We estimate the project required 20 man-months, or approximately 4,000 man-hours, and cost about \$15,000.

Chairman DOUGLAS. Plus the work of a supervisor and the work of the economists.

Mr. BRIMMER. Plus the work of the economists, Mr. Franklin and Dr. Kreinin—a rough estimate is that we must have done at least 60,000 hand calculations here and the underlying calculations behind them.

Chairman DOUGLAS. How much time do you think it would take to do the study of the 8,000 observations on computers?

Mr. BRIMMER. This would get a little—doing the actual calculations on the computers would be very, very little. The bottleneck in all of this is the fact that a knowledgeable person would still have to look through the freight rate tariffs to match them.

Chairman DOUGLAS. Have you presented this study to the Balance-of-Payments Committee?

Mr. BRIMMER. It has not gone forward yet, but it will go forward to them. This is the first presentation today.

Chairman DOUGLAS. Can you say whether or not the Committee will have any recommendations based on this study?

Mr. BRIMMER. I cannot. We have not discussed this since Mr. Fowler became Chairman but Mr. Dillon knew about it and expressed a considerable amount of interest in it. And in the Technical Committee—which is staffed at the Assistant Secretary level and I am a

member of that Committee—we have talked about this study but we have not made any recommendations about the next steps.

Chairman DOUGLAS. Will you make recommendations when you submit it to the full committee?

Mr. BRIMMER. I will.

Chairman DOUGLAS. This is a splendid piece of work. Again I want to thank those who have taken part in it. It throws a great shaft of light. Do you have an estimate of how much it would cost for the full study and how long it would take?

Mr. BRIMMER. We have not been able to do that, Mr. Chairman.

(The outline and report of Mr. Andrew Brimmer in its entirety follows:)

OUTLINE OF PILOT STUDY OF THE EFFECT OF OCEAN FREIGHT RATE DIFFERENTIALS ON THE BALANCE OF TRADE, JUNE 30, 1965

1. Study is confined to manufactured commodities (secs. 5-8 of first digit SITC of U.N.).

	Description	Number of groups
Sec. 5.....	Chemicals.....	6
Sec. 6.....	Manufactured items classified chiefly by materials.....	15
Sec. 7.....	Machinery and transport equipment.....	15
Sec. 8.....	Other manufactured commodities.....	16
Total commodity groups.....		52

NOTE.—See table 1, p. 467, for table showing relative importance of manufactured commodities in total U.S. foreign trade.

2. Study is confined to U.S. trade with industrialized countries—Western Europe and Japan. (See table 2, p. 468.)

3. Three trade routes were selected, see p. 469.

Distribution of shipping declarations, by trade route and direction of movement

Trade route	Import declarations	Export declarations	Total number
5-7-8-9.....	331	301	632
6.....	119	65	184
12.....	239	38	277
Total.....	689	404	1,093

4. Census Bureau was asked to select a small subsample of commodities for pilot study. Results are shown above.

5. Three kinds of freight rates were assigned in each direction, inbound and outbound: (a) conference contract rates; (b) conference noncontract rates; (c) nonconference rates; thus, each shipment was assigned six freight rates.

6. Sample data were analyzed as if data constituted a representative sample.

ANALYSIS OF DIFFERENTIALS

1. From each declaration was obtained f.o.b. or f.a.s. value of each shipment; this was converted to c.i.f. value by adding insurance and freight.

2. Six freight rates were assigned to each shipment.

3. The following calculations were made:

(a) Freight rate, as percent of c.i.f. value— (R/V) , using six different rates.

(b) Freight rate differential, as percent of outbound freight, where seven types of differentials were presented.

(c) Freight rate differentials (seven types) as percent of inbound freight.

(d) Freight rate differentials as percent of c.i.f. value of shipments.

NOTE.—A positive differential denotes the case where the outbound rate exceeds the inbound rate.

(e) The data relating to individual shipments were then aggregated by the use of weighted means, where the value of each shipment constituted the weight.

4. Table 3, page 470, presents freight rates as percent of c.i.f. value: The results are ranked from highest to lowest (all routes):

	Percent
Conference noncontract, outbound.....	4.97
Conference contract, outbound.....	4.44
Conference contract, inbound.....	3.70
Conference contract, outbound.....	3.70
Nonconference, outbound.....	3.10
Nonconference, inbound.....	2.68

NOTE.—Freight cost constitutes 3 to 5 percent of land value. In overall averages, outbound rates exceed inbound rates.

5. Table 4, page 472, shows similar results: Outbound rates tend to be higher than inbound rates.

6. Freight rate differentials as a percent of freight, table 5, page 473, and table 6, page 473.

Inbound

	Percent of—			
	Freight		Cost, insurance, and freight value	
	Inbound	Outbound	Inbound	Outbound
1. Conference contract outbound—				
versus contract inbound.....	39	-10	1.6	-0.1
versus noncontract inbound.....	40	-4	1.7	.0
versus nonconference inbound.....	59	26	2.6	.8
2. Conference noncontract outbound—				
versus contract inbound.....	68	18	2.6	1.0
versus noncontract inbound.....	62	14	2.5	.8
versus nonconference inbound.....	88	46	3.6	1.8
3. Nonconference outbound versus nonconference in-				
bound.....	37	5	1.1	.2
Simple average.....	56	14	2.5	.7

EFFECT OF OCEAN FREIGHT RATE DIFFERENTIALS ON THE U.S. BALANCE OF TRADE:
A REPORT ON A PILOT STUDY

I. SCOPE OF THE STUDY

It is widely alleged that ocean freight rates applicable to commerce touching U.S. shores are higher on outbound than on inbound traffic. That is, it costs more to ship a piece of merchandise from, say New York to London, than from London to New York. Likewise, it is often argued that freight rates from the United States to countries in Asia or Latin America are higher per ton-mile than rates charged on identical commodities from other industrial countries to the same destinations. Such freight rate "differentials" favor the foreign exporters at the expense of their American counterparts, and are detrimental to the U.S. balance of payments.

As part of a wider study of freight rate differentials, we have been asked to determine their effect on the U.S. balance of trade. In accordance with earlier testimony by the secretarial staff, we have undertaken to prepare and present such estimates to this committee. Excluded from our terms of reference are such questions as whether or not the differentials are justified on economic grounds; for example, by reference to supply and demand conditions on inbound and outbound traffic. Also excluded is the effect of the differentials on the transportation account of the balance of payments. This effect would depend, among other things, on the distribution of U.S. oceanborne foreign commerce between American- and foreign-flag ships. Our concern is with the balance of trade and not the balance of payments on current account.

One other exclusion was made. The study is confined to manufactured commodities; namely, sections 5 to 8 of the standard international trade classification (SITC) of the United Nations.¹ It includes chemicals (sec. 5), machinery and transport equipments (sec. 7), manufactured goods classified chiefly by materials (sec. 6), and other manufacturers (sec. 8). The rationale for the exclusion of nonmanufactured goods is that the price mechanism is allowed to play a decisive role only in the manufacturing sector, and the freight differentials operate essentially through their effect on relative prices. The role of governmental bodies in the agricultural and other sectors reduces the significance of freight rates and other price factors. It is recognized that in doing so we are excluding bulk commodities, in which transportation costs often constitute an important element of the final landed price. Nevertheless, price variations do not affect the trade volume significantly when the governments involved use quotas and other measures which either limits the price mechanism or distorts it to a point where it cannot function.² The quantitative implications of this exclusion are shown in table 1 below:

TABLE 1.—U.S. trade in 1962

[Dollars in billions]

	Imports	Exports
Total trade.....	\$16.2	\$21.4
Trade in manufactures (secs. 5 to 8).....	\$7.3	\$13.8
Percent of manufactures in total trade.....	45.1	64.5

Source: U.S. Bureau of the Census, FT-110 and FT-120 supplement, 1962; FT-410 and FT-420 supplement, 1962.

¹ Roughly speaking, this definition corresponds to divisions 22 to 28 and 30 to 39 of the standard industrial classification (SIC). But some items in divisions 24, 26, and 33 are excluded, since they are regarded as crude materials by the SITC. An example is the commodity "pulpmill products" (SIC No. 2611), which is classified under SITC No. 251 ("wood pulp"). App. I presents a description of these industry divisions.

² Additionally, it should be noted that whereas almost all imported manufactures compete directly with locally produced substitutes, most of which are also exported from the United States, this is not the case in other sectors. For example, some two-thirds of U.S. agricultural imports consist of "complementary" commodities; namely, products for which there are no locally produced substitutes. (See U.S. Bureau of the Census, "U.S. Commodity Exports and Imports as Related to Output, 1962 and 1961," Washington, 1964, p. 3.)

International competition in the manufacturing sector dictates division of the study into two broad but distinct parts: (1) American trade with other industrialized countries; and (2) American trade with developing countries. The first category refers to competition of industrial countries in the markets of each other, and must consider commerce moving in both directions. Specifically, it includes American trade with Western Europe and Japan. (Canada is excluded from the study because we saw little evidence, in the published material, of differential rate practices on goods moving in and out of United States and Canadian ports.) Discussion in the second category would revolve around competition between United States industrial products and those of Europe and Japan in the markets of nonindustrial countries.³ Only outbound traffic (U.S. exports) is affected, and inbound traffic would be excluded from the analysis. The foreign markets considered are primarily those of Latin America, the Far East, and Africa.

It is easy to see that there are great difficulties in ascertaining freight rate differentials for trade in the second category. This is so first because rates from Europe and Japan to foreign countries are not as readily available to the American maritime authorities as rates on trade touching U.S. shores. And second, even if all rates were known, it is difficult to estimate the degree of discrimination when the distances involved are vastly different. Consequently, it was decided to limit the study to trade touching U.S. shores. Table 2 shows that our concern is thereby narrowed to \$4.2 billion worth of American exports and \$4.8 billion of imports. The bulk of this commerce moves through trade routes 5-9, U.S. North Atlantic coast to Europe; 12, U.S. Atlantic coast to the Far East; and 29, U.S. Pacific coast to the Far East.⁴ However, within the latter two routes our interest is confined to trade with Japan.

TABLE 2.—U.S. trade in manufactured commodities, 1963

(In billions of dollars)

Exports to—		Imports from—	
Canada.....	3.0	Canada.....	1.9
Japan.....	.6	Japan.....	1.3
Western Europe.....	3.6	Western Europe.....	3.5
All other.....	7.3	All other.....	1.2
Total.....	14.5	Total.....	7.9

Source: U.S. Department of Commerce, Bureau of the Census.

II. THE PILOT STUDY

Because of differences in the statistical classification of commodity trade on the one hand, and freight rates on the other, it is impossible to match the two on any level of commodity aggregation. Consequently, in order to relate freight rates to commodity prices, it is necessary to go back to the original export and import declarations which contain commodity prices, and assign the freight rates to each item. Since it was not clear that the products' description included in the declarations would suffice for the determination of freight rates, it was decided to embark first on a pilot study, which would determine the availability of the data, and the feasibility of the project.

The Bureau of the Census has been asked to select a small subsample of commodities for the pilot study.⁵ Of the 900 five-digit commodity groups included in section 5-8 of the SITC, they chose 52 groups as a matter of convenience. The description of these groups is shown in appendix II. From the 52 groups, the Census Bureau selected 1,093 trade declarations, of which 689 were inbound and 404 outbound shipments. The declarations were selected in a way which represented adequately the following three trade routes:

³ In terms of the analysis we would be concerned here with what economists call elasticity of substitution. That elasticity tells us by what percentage would U.S. exports to third markets rise for every percentage point increase in the prices of competitive suppliers, holding U.S. prices constant.

⁴ For details see the Maritime Administration, "Essential U.S. Foreign Trade Routes," May 1963.

⁵ We appreciate the help of Mr. Leonard B. Jackson of the Census Bureau in handling the selection.

(a) Trade route 5-7-8-9 (5, 7, 8, and 9 were formally individual trade routes but were consolidated into one during April 1963.) (North Atlantic-United Kingdom and Continent).

(b) Trade route 6 (North Atlantic-Scandinavia and Baltic).

(c) Trade route 12 (North Atlantic-Japan).

In appendix III we present maps depicting these routes.

In other words, the selected declarations represent 52 commodity groups, and 3 trade routes within each group.

As a second step, Mr. Gordon Smith of the Commerce Department assigned inbound and outbound freight rates to each declaration. Three kinds of freight rates were assigned in each direction: Conference-contract, conference-noncontract and nonconference.

Conference contract rates are rates set by the shipping conferences, which apply to members of the conference. The members must move all their foreign cargo by carriers participating in the conference. In return, they get a discount of approximately 10-15 percent; e.g., they may be charged 10 percent less than nonmembers who use the conference ships and who pay the conference noncontract rates.

Conference noncontract rates apply to nonmember shippers. These shippers are free to use nonconference carriers if they so desire. The arrangement permits them to place cargoes with the independent carriers, thereby lowering their transportation charges. On the other hand, they must pay a premium when using the conference carriers. This is known in the trade as the dual rate system. It might be noted that some conferences have only a single-rate system, enabling all shippers to enjoy the same rates regardless of loyalty to the conference.

Nonconference rates are those charged by independent carriers. They are normally lower than the conference rates, reflecting the effect of competition. But shippers using this category may suffer from irregular or infrequent service.

Before we proceed further, it should be stressed again that the analysis is undertaken as if the data constituted a representative sample; in actual fact they do not. The study was designed as a test of our ability to get the necessary information. Consequently, the analytical results of the present effort should not be regarded as answers to the problem posed in the first section. In the final section I shall outline what would be required for carrying out the full study.

III. FREIGHT DIFFERENTIALS

As the "raw material" for this study we used the 1,093 export declarations (exports) and consumption entry permits (imports) provided by the Census Bureau. From each we ascertained the f.o.b. value of each individual shipment and converted it to c.i.f. value by adding insurance and transportation charges. Three inbound and three outbound freight rates were then assigned to each shipment, as indicated above, for a total of six rates. The following computations were then performed: (a) freight as a percent of c.i.f. value, using six different rates; (b) freight "differential" as a percent of outbound freight, where seven types of differentials were presented; (c) freight "differential" (seven types) as a percent of inbound freight and (d) freight "differential" (seven types) as a percent of c.i.f. value of shipment. A positive "differential" denotes the cases where the outbound rate exceeds the inbound rate, while a negative "differential" denotes the reverse.

The data relating to individual shipments were then aggregated by the use of weighted means, where the value of each shipment constituted the weight. (Weighted frequency distributions were also planned, but because of time pressure they were not computed.)

Table 3 presents the weighted averages of freight as a percent of c.i.f. value. The rows in the table indicate the actual shipments selected. For example, in the first row, exports, we included the 65 export declarations of trade route 6, totaling \$480,118 in value. Each declaration was assigned six freight rates—three inbound and three outbound—as explained in the previous section. Similarly, in the second row, imports, 119 consumption entry permits had a value of \$440,175. These rates are reflected in the headings of the six columns. We

TABLE 3.—*Freight as a percent of c.i.f. value*

[Averages weighted by value of shipments]

Trade route	Exports or Imports	Freight as a percent of c.i.f. value						Value of shipments
		Conference-contract		Conference-noncontract		Nonconference		
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	
6.....	Exports.....	3.78	4.08	4.42	4.08	3.28	1.50	\$480,118
6.....	Imports.....	6.33	4.36	7.44	4.36	5.48	3.72	440,175
6.....	Combined exports and imports.....	5.00	4.21	5.86	4.21	4.33	2.57	920,293
5 to 9.....	Exports.....	3.27	3.71	4.43	3.71	2.67	2.60	1,840,902
5 to 9.....	Imports.....	3.97	3.25	2.52	3.25	3.00	2.99	1,289,657
5 to 9.....	Combined exports and imports.....	3.56	3.52	3.64	3.52	2.81	2.76	3,130,559
12 partial.....	Exports.....	2.85	2.12	3.27	2.12	1.55	1.60	684,084
12 partial.....	Imports.....	9.51	5.53	10.96	5.53	4.39	3.56	662,340
12 partial.....	Combined exports and imports.....	6.10	3.79	7.05	3.79	2.94	2.56	1,346,424
5 to 9, 12 partial.....	Exports.....	3.26	3.40	4.16	3.40	2.51	2.20	3,005,104
5 to 9, 12 partial.....	Imports.....	5.94	4.09	5.98	4.09	3.84	3.28	2,392,172
5 to 9, 12 partial.....	Combined exports and imports.....	4.44	3.70	4.97	3.70	3.10	2.68	5,397,276

then computed the ratio of the freight to c.i.f. value for each type. And the average ratios (using value of shipments as weight) are shown in the table.

Although some variations exist, inspection of the table suggests that in most cases the freight or transportation charge constitutes 3 to 5 percent of landed value. Almost without an exception, the nonconference rates appear lower than the conference rates, suggesting the impact of competition on nonconference carriers. These lower rates should presumably be balanced against the higher quality service provided by the conference carriers. Within the conference, contract rates are lower than noncontract rates on outbound traffic. Finally, almost invariably the outbound rates exceed the inbound rates. In the case of the overall averages (last line), this differential appears lowest for nonconference rates and highest for conference rates.

This point is further verified in table 4 with regard to conference rates. The table compares the average inbound and outbound rates for each trade route and direction of traffic, with the last two rows showing the overall results. We start with the (71+48=) 119 consumption entry permits of trade route 6. Of these, on 71 cases, constituting 48 percent of the value of shipments, the outbound rates are higher than the inbound rates. In 48 cases, comprising 52 percent of the value of shipment in this category, outbound rates are lower than inbound rates. We then show this relationship for the export declarations in route 6, and for the export and import declarations combined. The same procedure is followed in the case of trade routes 5 to 9 as well as that part of trade route 12 relating to Japan.

The last row shows the relationship for all the 1,093 declarations. It appears that on 69 percent of the total value of shipments contained in them, the outbound rate exceeds its inbound counterpart, while the reverse is the case for only 31 percent of the value. This relationship occurs in virtually all the four trade routes. Again, the data confirm the allegation that inbound rates are lower than outbound rates.

Of the nine permutations possible with the three freight rates, our transportation specialist selected seven "differentials" for close study: Conference contract and noncontract outbound are each compared with the three inbound "differentials"; and the nonconference outbound differential is compared with its inbound counterpart. These are listed in the headings of tables 5 and 6 in the following order:

Case 1: Conference contract outbound versus conference contract inbound.

Case 2: Conference contract outbound versus conference noncontract inbound.

Case 3: Conference contract outbound versus nonconference inbound.

Case 4: Conference noncontract outbound versus conference contract inbound.

Case 5: Conference noncontract outbound versus conference noncontract inbound.

Case 6: Conference noncontract outbound versus nonconference inbound.

Case 7: Nonconference outbound versus nonconference inbound.

These differentials "vary greatly in size by comparison to total freight, with the average percentages ranging all the way from -30 to 134. Table 5 shows the overall averages for inbound and outbound traffic. Taking a simple average of these figures, they show that the "differential" exceeds one-half of total freight on inbound traffic, and amounts to 14 percent of freight on outbound traffic.

What concerns us most in this study is the proportion the differentials form of total landed value. These are presented in table 6 for outbound and inbound traffic separately. Inspection of the table shows that the "differentials" are, by and large, positive, confirming again the allegation that outbound rates tend to exceed the inbound ones. Second, the differentials are considerably larger on imports than on exports, although this may simply be a result of the nonrepresentativeness of our sample. Within imports, the nonconference differential (last column) appears to be the smallest one, reflecting perhaps the impact of competition on ratesetting. The two lines pertaining to all routes show the overall averages. Each of them should be aggregated to obtain one overall differential for import and another for export traffic. But to aggregate them properly, one must know the importance of each type of "differential" in total traffic. Since such information is not available, a weighted average cannot be computed. As an approximation, I shall use the two medians, which turn out close to the unweighted averages. The differential on inbound traffic is estimated at +2.5 and on outbound traffic at +0.7 percent of landed price.

TABLE 4.—*Relation of outbound to inbound rates*

Trade route	Exports or imports traffic	Relationship between inbound and outbound rates	Conference rates	
			Number of cases	Percent of value of shipments
6.....	Exports.....	Outbound higher than inbound.....	53	81
		Outbound smaller than inbound.....	12	19
6.....	Imports.....	Outbound higher than inbound.....	71	48
		Outbound smaller than inbound.....	48	52
6.....	Combined exports and imports.....	Outbound higher than inbound.....	124	65
		Outbound smaller than inbound.....	60	35
5 to 9.....	Exports.....	Outbound higher than inbound.....	113	41
		Outbound smaller than inbound.....	188	59
5 to 9.....	Imports.....	Outbound higher than inbound.....	220	81
		Outbound smaller than inbound.....	111	19
5 to 9.....	Combined exports and imports.....	Outbound higher than inbound.....	333	58
		Outbound smaller than inbound.....	299	42
12 partial.....	Exports.....	Outbound higher than inbound.....	33	98
		Outbound smaller than inbound.....	5	2
12 partial.....	Imports.....	Outbound higher than inbound.....	234	96
		Outbound smaller than inbound.....	5	4
12 partial.....	Combined exports and imports.....	Outbound higher than inbound.....	267	97
		Outbound smaller than inbound.....	10	3
5 to 9, 12 partial.....	Exports.....	Outbound higher than inbound.....	199	44
		Outbound smaller than inbound.....	205	56
5 to 9, 12 partial.....	Imports.....	Outbound higher than inbound.....	525	79
		Outbound smaller than inbound.....	164	21
5 to 9, 12 partial.....	Combined exports and imports.....	Outbound higher than inbound.....	724	69
		Outbound smaller than inbound.....	369	31

TABLE 5.—Freight differentials as a percent of freight

A—IMPORTS

Trade route	Conference contract outbound—			Conference noncontract outbound—			Non-conference outbound versus non-conference inbound
	Versus contract inbound	Versus non-contract inbound	Versus non-conference inbound	Versus contract inbound	Versus non-contract inbound	Versus non-conference inbound	
5, 6, 7, 8, 9 and 12 (partial): Inbound.....	39	40	59	68	62	88	37

B—EXPORTS

6, 7, 8, 9 and 12 (partial): Outbound.....	-10	-4	26	18	14	46	5
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TABLE 6.—Freight differentials as a percent of c.i.f. value

A—IMPORTS

Trade route	Conference contract outbound—			Conference noncontract outbound—			Non-conference outbound versus non-conference inbound
	Versus contract inbound	Versus non-contract inbound	Versus non-conference inbound	Versus contract inbound	Versus non-contract inbound	Versus non-conference inbound	
6.....	1.9	1.9	2.6	2.9	2.9	3.8	1.8
5, 7, 8, 9.....	.3	.4	.9	1.1	.9	1.5	.9
12 (partial).....	4.0	4.0	5.9	5.4	5.4	7.4	1.2
5, 6, 7, 8, 9, and 12 (partial).....	1.6	1.7	2.6	2.6	2.5	3.6	1.1

B—EXPORTS

6.....	-0.3	-0.3	1.4	0.2	0.2	1.6	0.9
7, 5, 8, 9.....	-.3	-.2	.5	1.1	.9	1.9	.1
12 (partial).....	.7	.7	1.2	1.1	1.1	1.6	-.1
5, 6, 7, 8, 9, 12 (partial).....	-.1	0	.8	1.0	.8	1.8	.2

IV. EFFECT ON THE BALANCE OF TRADE

Two procedures can be followed in estimating the effect of freight rate "differentials" on the U.S. trade balance. First, one may ask by how much would imports decline should the inbound rates be raised to the outbound level. This approach would call for the use of the inbound data. Secondly, using the outbound data, it may be asked: By how much would U.S. exports increase if outbound rates were reduced to the inbound level? These two approaches would yield different answers, with the "correct" estimate depending on which of the two policies is pursued to eliminate the "differential." If it is assumed that both policies are employed—namely, reduction of some outbound rates and increase in some inbound rates—a midpoint of the two estimates can be taken as an approximation of the trade effect.

(A) Increasing the inbound rates: What would happen to U.S. imports if inbound freight rates were raised by 56 percent to their outbound level, constituting an increase of 2.5 percent of landed price? Since the European and Japanese economies are operating at capacity, and are expected to experience "excess demand" in the foreseeable future,⁹ their supply elasticities are very low. Under

⁹ See Walter Salant, et al., "The U.S. Balance of Payments in 1968" (known as the Brookings Study), Joint Economic Committee, U.S. Congress, Washington 1963, pp. 50-53.

such circumstances it can be assumed that no portion of the rate increase would be absorbed by the exporters, and that their f.o.b. export prices would remain unaffected. That implies a 2.5-percent increase in the landed U.S. import prices.

If we were dealing with strictly homogenous products, than under the high supply elasticities prevailing in the United States, such a price increase would have eliminated all imports. But international trade in manufactures consists mainly of highly differentiated commodities. The imported product and its domestically produced substitute often vary in quality, description, specifications, service adequacy, and availability. And beyond that, even the brand names are very important in themselves. Even similar domestic and imported products cannot be considered perfect substitutes. Consequently, one can only expect a decline in imports, the extent of which depends on the U.S. elasticity of import demand. There are many estimates of this elasticity,⁷ the most recent ones being those of Ball and Maywah.⁸ These are based on quarterly data for 11 postwar years (44 observations), and were derived by means of a multiple regression using relative prices and real income as independent variables, and the quantity of imports as the dependent variable. The price elasticity of U.S. demand for manufacturing imports is estimated at -3.5^9 and for semimanufacturers at -1.38^9 . Since the SITC sections 5 to 8 contain products classified as semimanufactured as well as finished manufactures by the Commerce Department, I have weighed the two figures by their share in total U.S. imports of SITC 5 to 8 products, and obtained an overall elasticity of -3.17 .

Using this figure, we obtain a decrease in the volume of imports of $3.17 \times 2.25 = 7.9$ percent. Since free on board import prices¹⁰ are assumed to remain unchanged, the value of imports would decrease in the same proportion. Applying this percent to the 1963 imports of manufactures from Western Europe and Japan of \$4.8 billion, we obtain an estimated decrease of \$380 million.

Suppose that as an alternative we postulate a higher than zero supply elasticity in Western Europe and Japan, and assume that exporters absorb half of the increase in freight rates. Then, as inbound rates increase by 2.5 percent of price, free on board export prices would decline by 1.25 percent and cost, insurance, and freight U.S. import prices would rise by 1.25 percent. The volume of U.S. imports would then decrease by

$$3.17 \times 1.25 = 3.9625 \text{ percent.}$$

But U.S. import statistics are reported at free on board prices, and foreign export prices would decline by 1.25. Consequently, the value of U.S. imports would decline by

$$103.9625 \times 101.25 - 100 = 5.262 \text{ percent.}$$

When applied to total imports of \$4.8 billion, we obtain a decrease of \$253 million.

(B) Lowering the outbound rates: What would happen to U.S. exports if outbound rates were lowered by 14 percent, to their inbound level, constituting an 0.7 percent of landed price? Because of the existence of unused productive capacity in the United States, and because of the small share of exports in the total production of most industries, its export supply elasticity can be considered infinite. American exports can be expanded without an increase in freight on board price. Consequently, the landed price of U.S. exports would decline by 0.7 percent. Export volume and value would rise by 0.7 times the elasticity of demand for U.S. exports.

On the basis of various studies, Arnold Harberger¹¹ estimated the elasticity of demand for U.S. manufacturing exports at about minus 2. This is also the figure used in the Brookings report to estimate the impact of the European Economic Community on American exports.¹²

⁷ For a summary see H. S. Cheng, "A Collection of Statistical Estimates of Elasticities in International Trade" (mimeographed), International Monetary Fund, Sept. 17, 1957.

⁸ R. J. Ball and K. Maywah, "The U.S. Demand for Imports, 1948-58," "Review of Economics and Statistics," November 1962, pp. 395-401.

⁹ If anything, these err in being on the low side.

¹⁰ By which the Commerce Department reports U.S. trade.

¹¹ A. Harberger, "Some Evidence on the International Price Mechanism," *Journal of Political Economy*, December 1957, pp. 506-521.

¹² Walter S. Salant et al., "The United States Balance of Payments in 1968," U.S. Government Printing Office, Washington, 1963, p. 104. In another context, however, the Brookings report employed an elasticity estimated for U.S. exports of -2.5 (p. 82).

V. OUTLINE OF THE FULL PROJECT

This pilot study, while not yielding a definite answer to the problem at hand, does demonstrate the means of getting the information as well as the computational procedures involved. For the full project we would need a sample which represents U.S. trade with Western Europe and Japan at a tolerable level of confidence.

Such a sample would have to be stratified first by the following eight trade routes:

Evidently U.S. import demand is substantially more elastic than foreign demand for American exports. One possible reason for the difference is the fact that we produce close substitutes for virtually all industrial imports, and that imports occupy a small proportion in the consumption of each product.¹³ This relationship is corroborated in De Vries' study¹⁴ of American imports of individual products. He found that "commodities whose imports supply a relatively large share of the U.S. market tend to have relatively low elasticity of import demand; while commodities whose imports supply a relatively small share of the market have relatively high elasticity." For commodities in which the import-consumption ratio was above the average for all the 176 commodities studied, his elasticity was 2.05. For those in which the import-consumption ratio was below the average, the elasticity was 3.39—a difference of 65 percent.

Applying the elasticity figures of minus 2, we obtain an estimated increase of 2×0.7 percent = 1.4 percent in the value of U.S. exports as a result of the reduction in outbound rates. This implies a rise of \$4.2 billion \times 1.4 percent = \$60 million. It would appear that an increase in the inbound rates is likely to have a more favorable effect on the trade balance than a reduction in the outbound rates. But this result is in part due to the lower differential obtained on outbound traffic, which might have resulted from improper selection of the export and import declarations. This point can serve as a reminder that the results are not based on a representative sample.

Trade route	U.S. coastal area	Foreign area
6.....	North Atlantic.....	Scandinavia and Baltic.
5, 7, 8, 9.....	do.....	United Kingdom and the Continent.
11.....	South Atlantic.....	United Kingdom and Europe.
12 partial.....	Atlantic and Great Lakes.....	Japan.
21.....	Gulf.....	United Kingdom and the Continent.
26.....	Pacific.....	Western Europe.
29 partial.....	do.....	Japan.
32.....	Great Lakes.....	Western Europe.

Secondly, within each trade route we may wish to have adequate commodity representation. Since elasticity estimates for commodity groups (say, the three-digit SITC) are nonexistent, such a stratification would not add much accuracy to the estimates. We must rely on an aggregative approach. Still, it is desirable to represent adequately the broad categories of commodities, and consequently I suggest stratification by the first digit SITC, forming three groups: 5 (chemicals), 7 (machinery); and 6, 8 (other manufactures). This yields 24 cells (8 trade routes \times 3 commodity groups) which are necessary for tariff moving in each direction (exports and imports), yielding a total of 48 cells. A tolerable level of confidence would require 200 cases per cell, making a total of 9,600 observations. Half of these would be export declarations and half import declarations. As a measure of economy, all the European trade routes (5-9) may be combined, reducing the number of cells to 44 and the number of required observations to 8,800.

Preferably the sample should be drawn so as to cover a full calendar year.

¹³ See U.S. Bureau of the Census, "U.S. Commodity Exports and Imports as Related to Output, 1962 and 1961," Washington, 1964.

¹⁴ B. A. De Vries, "Price Elasticities of Demand for Individual Commodities Imported Into the United States," International Monetary Fund staff papers, I (1951), pp. 397-419.

APPENDIXES

APPENDIX I

Description of the standard industrial classification (SIC) divisions included (approximately) in secs. 5-8 SITC

<i>SIC number</i>	<i>Description</i>
22-----	Textile mill products.
23-----	Apparel and other finished products made from fabrics and similar materials.
24 ¹ -----	Lumber and wood products, except furniture.
25-----	Furniture and fixtures.
26 ¹ -----	Paper and allied products.
27-----	Printing, publishing, and allied industries.
28-----	Chemicals and allied products.
30-----	Rubber and miscellaneous plastics products.
31-----	Leather and leather products.
32-----	Stone, clay, and glass products.
33 ¹ -----	Primary metal industries.
34-----	Fabricated metal products, except ordnance, machinery, and transportation equipment.
35-----	Machinery, except electrical.
36-----	Electrical machinery, equipment, and supplies.
37-----	Transportation equipment.
38-----	Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks.
39-----	Miscellaneous manufacturing industries.

¹ Some items in these divisions (e.g., No. 2611, "wood-mill products") are excluded.

APPENDIX II

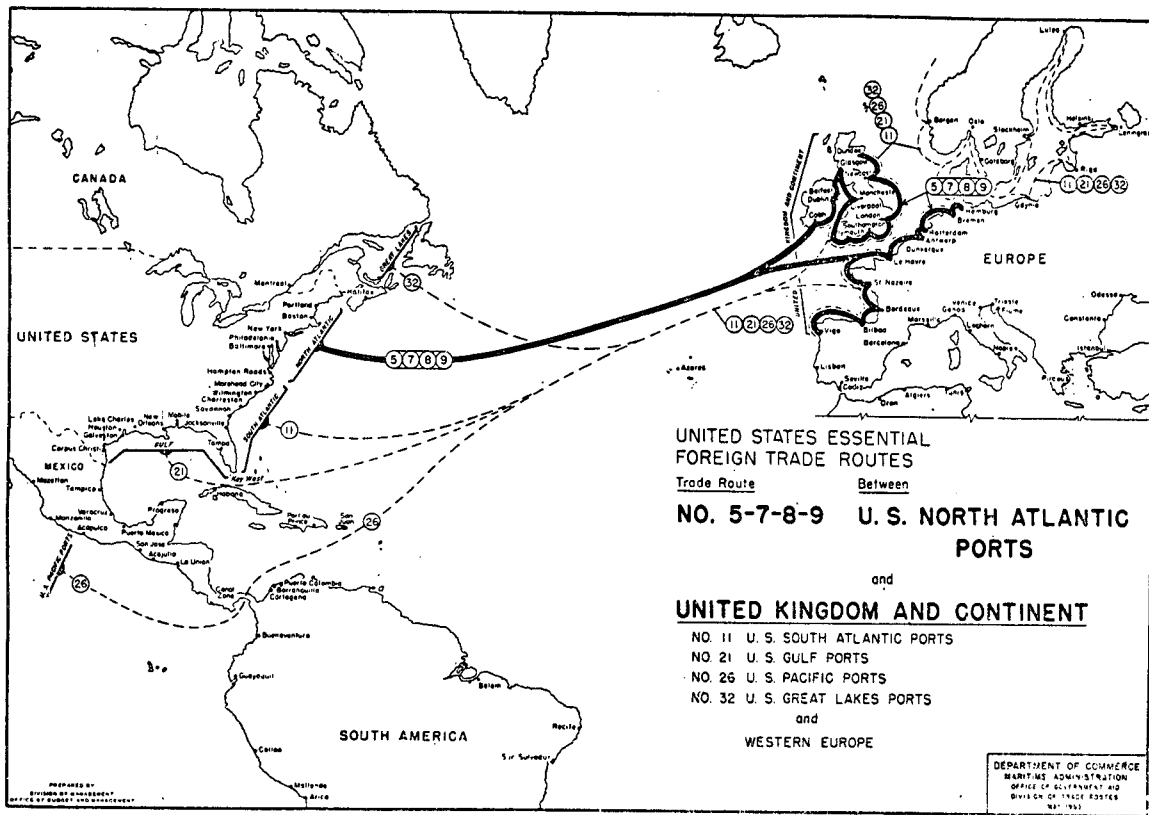
List of commodities represented in document sample drawn for the prepilot study of inbound-outbound freight rate differentials

<i>SITC Code</i>	<i>Commodity description</i>
513.25-----	Mercury.
513.33-----	Sulphuric acid (including oleum).
513.61-----	Ammonia, anhydrous or in aqueous solution.
571.11-----	Propellant powders.
599.51-----	Starches (not prepared) and Inulin.
599.57-----	Dextrins, soluble or roasted starches, and starch glues.
611.91-----	Leather, n.e.s. of sheep and lambskins.
641.21-----	Uncoated printing and writing paper (machine made), in rolls or sheets.
641.97-----	Wallpaper and Linerusta.
656.61-----	Blankets and traveling rugs, of wool.
664.92-----	Glass envelopes (including bulbs and tubes) for electric lamps, electronic valves, and the like.
673.23-----	Bars and rods (excluding wire rod) and hollow mining drill steel, of alloy steel.
657.03-----	Hoop and strip, of alloy steel.
682.22-----	Wrought plates, sheets and strip, of copper (including copper alloys).
682.25-----	Tubes, pipes, and blanks therefor and hollow bars, of copper (including copper alloys).
689.33-----	Beryllium, unwrought or wrought, and articles of beryllium.
693.11-----	Wire cables, ropes, plaited bands, slings and similar articles (excluding electric), not insulated, of iron or steel.
695.22-----	Hand tools as follows: pliers (including cutting pliers), pinchers, tweezers, metal cutting shears, bolt croppers and the like; perforating punches; pipe cutters; spanners and wrenches (except tap wrenches); files and rasps.

- 695.24----- Interchangeable tools for hand tools, or for machine tools or power-operated hand tools.
- 695.26----- Tool tips and plates, sticks and the like for tool tips, unmounted, of sintered metal carbides.
- 698.11----- Locks, padlocks, and keys therefor of base metal.
- 711.41----- Internal combustion (piston) engines for aircraft.
- 715.22----- Rolling mills (metalworking machinery) and rolls therefor.
- 718.21----- Bookbinding machinery.
- 718.29----- Printing machinery, n.e.s. (excluding typemaking and setting machinery and the like).
- 718.39----- Food-processing machines (other than domestic), n.e.s. (excluding machinery for milling grain, working cereals, etc.).
- 719.15----- Refrigerators (other than domestic) and other refrigerating equipment, whether or not electrical.
- 719.31----- Lifting, handling, and loading machinery (such as lifts, hoists, winches, cranes, jacks, pulley tackle, belt conveyors and the like).
- 719.42----- Domestic refrigerators, nonelectrical.
- 719.54----- Parts and accessories of machine-tools, n.e.s., for working metals, mineral materials, wood, bone, hard plastics or other hard carving materials.
- 719.63----- Weighing machinery, n.e.s. (including weight-operated counting and checking machines); and weighing machine weights of all kinds.
- 725.01----- Domestic refrigerators, electrical.
- 725.03----- Electromechanical domestic appliances, n.e.s., with self-contained electric motor.
- 729.11----- Primary batteries and cells.
- 729.92----- Industrial and laboratory electric furnaces and ovens, electric induction and dielectric heating equipment, and electric welding and cutting apparatus.
- 733.12----- Parts of bicycles and other cycles, not motorized; and parts of invalid carriages, fitted with means of mechanical propulsion.
- 812.41----- Illuminating and signaling glassware.
- 812.43----- Portable electric battery and magneto lamps (excluding those for cycles and motor vehicles).
- 841.13----- Men's and boys' under garments, not knitted or crocheted.
- 841.21----- Handkerchiefs.
- 841.26----- Gloves, mittens, stockings, and socks, not knitted or crocheted.
- 841.44----- Outer garments and other articles, knitted or crocheted, not elastic nor rubberized.
- 861.71----- Medical, dental, surgical, and veterinary instruments and appliances (excluding electromedical apparatus).
- 891.81----- Pipe and reed organs, including harmoniums and the like.
- 892.13----- Maps and hydrographic and similar charts of all kinds (including atlases, printed topographical plans, etc.), and printed globes.
- 895.23----- Pencils, n.e.s., pencil leads, crayons and pastels, drawing charcoals, writing and drawing chalks, and tailors' and billiards chalk.
- 897.11----- Jewelry and parts thereof, of precious metal or rolled precious metal.
- 899.22----- Basketwork, wickerwork, and other articles of plaiting materials, n.e.s.
- 899.32----- Matches (excluding Bengal matches).
- 899.41----- Umbrellas and sunshades (including walking-stick umbrellas, umbrella tents, and garden and similar umbrellas).
- 899.62----- Orthopedic appliances, artificial parts of the body and fracture appliances.
- 899.97----- Vacuum flasks and other vacuum vessels, complete with cases; and parts thereof other than glass liners.

 APPENDIX III

Maps showing trade routes 5-7-8-9, 6, and 12.



UNITED STATES ESSENTIAL FOREIGN TRADE ROUTES

Trade Route Between
NO. 5-7-8-9 U. S. NORTH ATLANTIC PORTS

and

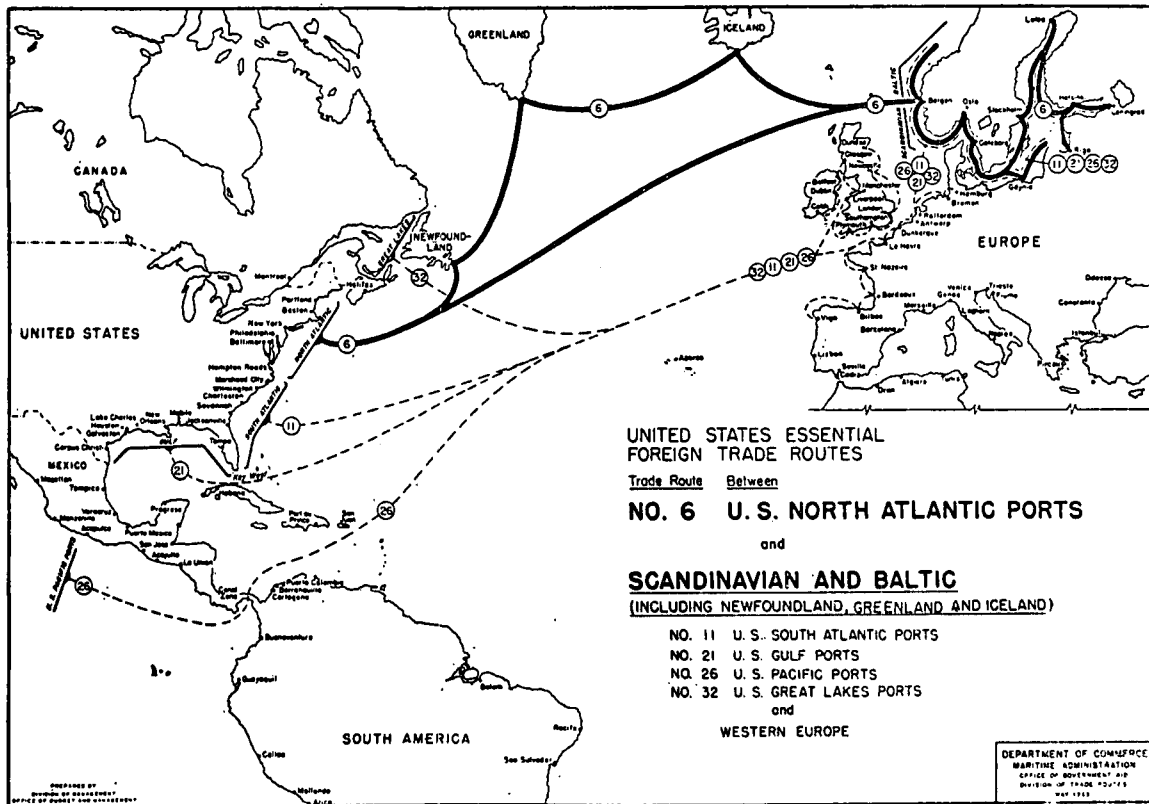
UNITED KINGDOM AND CONTINENT

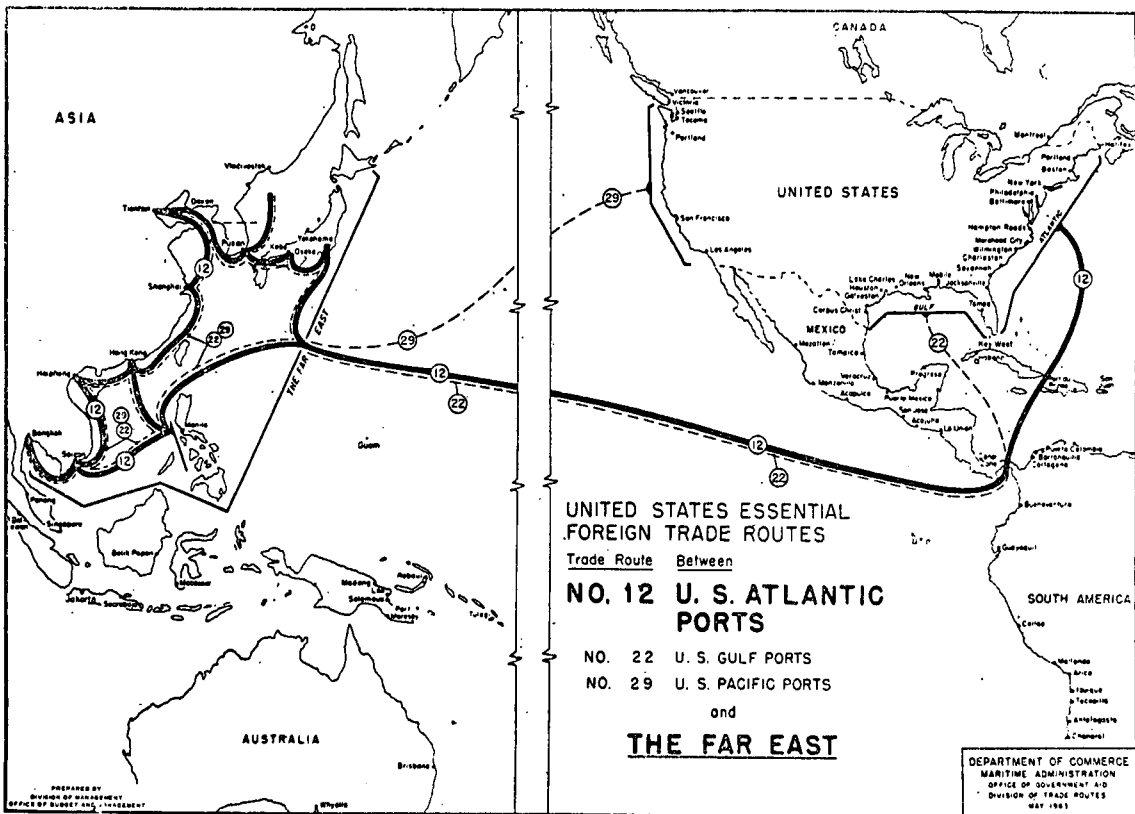
- NO. 11 U. S. SOUTH ATLANTIC PORTS
- NO. 21 U. S. GULF PORTS
- NO. 26 U. S. PACIFIC PORTS
- NO. 32 U. S. GREAT LAKES PORTS

and
 WESTERN EUROPE

DEPARTMENT OF COMMERCE
 MARITIME ADMINISTRATION
 OFFICE OF SUPPLY AND LOGISTICS
 DIVISION OF TRADE ESTIMES
 MAR-1953

PREPARED BY
 DIVISION OF MANAGEMENT
 OFFICE OF SUPPLY AND LOGISTICS





Chairman DOUGLAS. Mr. Bridwell, we are very happy to have you here.

You are going to discuss two subjects—one in regard to conference ratemaking policy and the other in regard to ocean transportation costs.

Mr. BRIDWELL. Yes, sir.

Chairman DOUGLAS. I apologize for pronouncing your name Bride-well—instead of Bridwell. Bridewell is a house of correction, a jail.

Mr. BRIDWELL. That is perfectly all right. My name gets pronounced many ways, Mr. Chairman.

TESTIMONY OF LOWELL K. BRIDWELL, DEPUTY UNDER SECRETARY OF COMMERCE FOR TRANSPORTATION, DEPARTMENT OF COMMERCE

Mr. BRIDWELL. I would like, if I may, to discuss first the study that we undertook regarding conference policies and practices and this is quite different from the study that has just been outlined to you by Dr. Brimmer.

The first of the Department's studies in the area of conference ratemaking policy began in February 1964 when William R. Greiner, an associate professor of business administration at the University of Washington, was retained as a part-time consultant in the Office of the Under Secretary for Transportation, to conduct a study of shipping conferences. The purpose of this study was to gather and analyze information about the structure, organization, practices, and policy of conferences having their headquarters in the United States.

The information gathered in the study came primarily from interviews with persons experienced in the ocean freight industry and the operation of ocean freight conferences. Mr. Greiner conducted 40 or more interviews during the spring and summer of 1964. Among those interviewed were conference chairmen and other conference employees, representatives of several American-flag lines, and, in several instances with representatives of shippers. Additional information was collected through examination of the files of the Transatlantic Associated Freight Conference in New York City, and from his participation as an observer at two regular ratemaking meetings of conferences in that association. Attached to this statement is a listing of the officials interviewed by Mr. Greiner. These officials are responsible for administration of approximately 45 of the shipping conferences regulated by the Federal Maritime Commission.

When Mr. Greiner began his interviews, he was apprehensive about the reliability of the information he was gathering since he expected that conference personnel and line employees might limit themselves to self-serving declarations about their operations. After completing the interviews Mr. Greiner was more confident that the information provided was reasonably reliable and accurate. His reasons for reaching that conclusion are several. First, he made it clear in his opening remarks in each interview that he was not engaged in an investigation of malpractices of conferences, but that he wished to develop information on the regular and routine aspects of conference ratemaking. Second, he conducted the interviews at the regular place of busi-

ness of the people interviewed, at their convenience, and with a minimum of formality. Third, the large number of interviews which he conducted provided a means to cross check information for consistency. Fourth, it was his impression that the investigation was accepted as an objective research effort and that candid responses were made to his inquiries on that basis.

There were a total of possibly 40 interviews involved. I am including a list of conference officials interviewed.

(List referred to follows:)

LIST OF CONFERENCE OFFICIALS INTERVIEWED DURING INVESTIGATION BY WILLIAM GREINER

A. J. Pasch, formerly chairman, Transatlantic Associated Freight Conferences (prior to coming to this association Mr. Pasch chaired the Associated Latin American Freight Conferences) ;

V. G. Barnett, administrator, Transatlantic Associated Freight Conferences ;

C. D. Marshall, chairman, Associated Latin American Freight Conferences ;

W. Van Emburgh, Jr., chairman, River Plate and Brazil Conferences ;

J. A. Dennean, Chairman, Far East Conference ;

J. C. Pendleton, general secretary, Calcutta, East Coast of India and East Pakistan/U.S.A. Conference ;

J. K. Cunningham, chairman, West African Freight Conference ;

P. J. Warmstein, chairman, North Atlantic Portugal Eastbound Conference (Mr. Warmstein is employed in the traffic department of American/Export-Isbrandtsen Lines as conference specialist for that company) ;

L. M. Paine, Jr., secretary, Gulf Associated Conferences ;

W. C. Galloway, chairman, Pacific Westbound Conference ;

R. F. Burley, chairman, Latin America/Pacific Coast Steamship Conference ;

D. Lindstedt, chairman, Pacific Coast European Conference.

In addition, Mr. Greiner was given access to the files of the Transatlantic Associated Freight Conference in New York and he also sat in as an observer during two regular ratemaking meetings of conferences of that conference.

Chairman DOUGLAS. Did he have access to the minutes of the meetings of the conference at which decisions on rates were made?

Mr. BRIDWELL. I cannot answer, Mr. Chairman, as to the detail or the degree with which he had access to the files. Your specific question on the minutes of the meetings—the answer is “No.”

Chairman DOUGLAS. And these are purely outbound conferences—they are not inbound conferences?

Mr. BRIDWELL. They are primarily outbound. I believe in the 40 interviews, he also called on either conference chairman or employees who participated in inbound conferences.

Chairman DOUGLAS. He did not go to the headquarters of the inbound conferences?

Mr. BRIDWELL. No, sir.

Chairman DOUGLAS. Those are located outside of the country.

Mr. BRIDWELL. Yes, sir.

Chairman DOUGLAS. And they refuse to permit minutes to be studied by outsiders, isn't that true? By Americans?

Mr. BRIDWELL. I think it would be fair to say that Mr. Greiner was given limited access to the files, but of course he had complete freedom of the type of the interview, of the questions that he asked and his remarks to me were that he received complete cooperation in one sense.

But in the sense of your question of a detailed examination of the files, including the minutes, that was not done.

Chairman DOUGLAS. These were primarily outbound conferences, not inbound.

Mr. BRIDWELL. Yes, sir—that is correct.

Chairman DOUGLAS. Proceed.

Mr. BRIDWELL. Mr. Greiner in his report presented his findings which I will now discuss in summary form and then in detail to the extent that the committee is interested.

The conferences rarely articulate policy positions as such. The policies that they have are discernible primarily in a set of common attitudes and organizational behavior. This is particularly true with regard to ratemaking which is conducted in accordance with principles to which the conferences are committed by habit and custom. Some of the more salient principles may be summarized as follows:

1. The conferences are committed to a system of differential pricing based on demand for services.

2. They place primary reliance on shippers and receivers of cargoes to provide the impetus for rate reductions.

3. A general disposition to set rates according to the "needs" of customers for particular rates; and to impose upon customers the burden of demonstrating such a need.

4. In general, acceptance of the necessity to reduce rates to meet competition in order to attract and hold business for the conference lines.

5. General acceptance of the notion that "ratemaking is an art and not a science."

The last point is the principal one to be made here. On the basis of Mr. Greiner's study and his evaluation, the conference pricing policy is not a systematic analysis of any of the factors of cost or such other factors in the pricing system but rather it is a system based upon the judgment and experience of the persons participating in the conference ratemaking meetings.

On the point that ratemaking is an art and not a science, Mr. Greiner stated to us that he could recall of no other attitude which was more consistently advanced by the conference personnel who were interviewed. Implicit in this is a rejection of attempts at too precise a formulation of standards for ratemaking, perhaps due to a reluctance to be committed in advance to general rules which might obstruct reaching a decision in an individual case since, for each rate decision there may be a different set of relevant factors to be considered and balanced, and general rules may not prove helpful in such situations. At the same time the statement expresses recognition of certain established patterns of behavior, procedures and practices, which have been accorded the statute of custom and tradition.

There is no precise theoretical rationale for these practices, but rather an intuitive justification in the system that this approach works well for the conferences and, in their view, it seems to work well enough for the customers of the conference lines.

The handling of customer requests for rate adjustments is one of the major administrative functions of ocean freight rate conferences. These applications provide the impetus for most rate reductions and they are the source of much of the information used in conference ratemaking decisions. It is usually the responsibility of the shipper to

produce the data, the information that is necessary to justify his request for a lower rate.

All of the conferences Mr. Greiner examined in this study have evolved standard methods of processing these applications. However, these procedures are regularly used and have at least some air of formality about them. It should be noted that these procedures have evolved to simplify the administration of the conferences' ratemaking function. However, they do not partake of the formality and adjudicatory nature of the processes of domestic conferences and rate bureaus. The following procedures, as detailed in the study, appear to have general applicability:

1. *Receipt of rate requests.*—Rate requests are generally routed through the conference staff to the conference chairman. Occasionally such requests may be made through one of the member lines, but the preference in most conferences is to have requests sent by the applicant to the conference office. There is also a general practice of making requests in the name of the customer controlling the cargo for which the rate adjustment is sought. The request may be prepared with the assistance of a freight forwarder or other customer's agent, and occasionally one of the member lines may provide such assistance, but the request itself is normally expected to come from the principal party.

2. *Methods of presenting requests.*—The conferences do not have rigid requirements as to the method of presenting requests. All normal methods of communication appear acceptable and mail and cable are perhaps the most common. The one universal requirement is that the communication present information sufficient to allow evaluation of the request. This falls into three general categories: characteristics of the cargo, rate data relevant to the current cost of transporting the cargo, and reasons for the reduction. The conferences provide standard forms specifying in detail the various items on which information should be supplied if available; however, use of these forms is not always required.

3. *Preliminary evaluation of requests.*—Requests received by the chairman are examined by him or a member of his staff to check on the adequacy and accuracy of the information presented. If there are errors or ambiguities in the request, or if there is an apparent lack of pertinent information, a request for clarification or additional information is normally addressed to the applicant. Where the matter is deemed sufficiently important, the chairman and his staff may attempt to verify information in the request, or to gather information not provided by the applicant, by utilizing the various sources of commercial intelligence available to the conference and its member lines. For example, information on foreign to foreign ocean rates is sometimes gathered by the conference office. When the application is deemed to be in satisfactory condition, an analysis of the request is undertaken. The chairman and his staff may perform their own analysis of the application and then prepare an evaluation and recommendation for submission to the membership.

4. *Rate committee action.*—Many conferences utilize standing rate committees made up of representatives from some of the

member lines since assignments to this committee are generally rotated among the member lines, applications are submitted to such a committee by the conference chairman. A docket with supporting information regarding the requests is generally distributed to the committee prior to its meetings. The rate committee prepares recommendations for action on the docket items which are usually presented to a ratemaking meeting attended by representatives of all the lines.

5. *Conference ratemaking meetings.*—Meetings for the representatives of all member lines are held to consider rate proposals. Depending upon the size of the conference and the volume of its business, such meetings may be held on a regular basis as the need arises. If there does not appear to be general acceptance for a proposed rate, the members of the conference may express their views by voting. Often on rate matters a unanimous vote is not needed.

6. *Expedited action.*—The preceding list of procedures covers the most formal part of the conference process for considering rate requests. This kind of treatment can only be afforded items where time is not a critical factor in adjusting the rate. There are, however, many requests made for a rapid adjustment in rates. A general practice for handling such requests is the so-called telephone poll. The chairman usually handles the calling of his members to inform them of a request, to solicit their opinions and then to share information. It is used until a consensus is reached. A common requirement for taking affirmative action through telephone poll is that there be unanimous approval. Items not approved are referred to a regular ratemaking meeting or to an emergency meeting.

The submission of a request for rate reduction and subsequent communication between the conference and the applicant is a form of negotiation. More direct negotiation of rates is conducted most commonly as the result of contact between the conference chairman and the applicant. This may take place through telephone conversations or informal meetings. Conference chairmen may also schedule more formal meetings to discuss rates with customers, especially where the customers' views may be presented by an association or other organization. Individual shippers also may make formal presentations, although this is less common. The conference chairmen interviewed expressed some preference for such personal presentations being made by an association. The feeling is that they are a valuable exposition of a group's position which avoids repetitive presentations.

In concluding this summary of the Greiner study, I would like to observe that the prevalence of a large number of complex factors makes generalization about conference ratemaking quite difficult. There are, however, some salient features of the process which may be delineated.

1. Conference pricing is primarily demand pricing. The basic question in every rate decision is: "What rate must be made in order to induce the movement of cargo in reasonable volume on conference vessels?" When competition from other modes or non-conference op-

erators is strong, the outcome is heavily influenced by the next best alternatives available to shippers. When such competition is not so strong, the issue will be approached in terms of demonstrated "needs" of shippers. The common factor in both approaches is that they represent attempts to measure the demand for service and to price accordingly.

2. The volume of movement, both current and potential, is a prime consideration in ratemaking. The revenue yielded by any given rate is a function of the volume in which cargo moves at that rate. A high rate at which no cargo moves is a bad rate for both conferences and shippers.

Chairman DOUGLAS. Mr. Bridwell, in our hearings last year representatives of the lines said that we could not take published rates because they were paper rates and in practice the actual rates were much lower and that, therefore, we should not use the published rates.

Now, you say that the high rate at which the cargo moves was the best that the lines put out. Many of these high rates were on commodities where there was no movement. This is a bad rate. Why do the conferences maintain these paper rates, these high paper rates, on commodities which do not move and which are breached in individual instances by the clients?

Mr. BRIDWELL. I can only answer that, Mr. Chairman, in terms of my observations and in terms of the observations of similar situations in land transportation rates—this means domestic land transportation, rail or truck. There are many rates on the books which are not applicable for any one of a number of reasons and under which no traffic moves. So the fact that there are paper rates is not in and of itself significant unless there is the desire of a shipper to move a commodity. Then if he is blocked by what is alleged to be a paper rate it becomes of substantial significance.

Chairman DOUGLAS. Exactly so.

Mr. BRIDWELL. Well, on the basis of my conversations with Mr. Greiner I think that the principal point that I can make here in relation to your question is that the conferences apparently respond by and large to the request of the individual shippers for a rate which is needed to move any specific commodity. Thus, the conferences to a very great extent are not self-policing in their rates, in the sense of keeping them up to date, but rather rely upon the request of shippers for initialing changes in their rates.

Chairman DOUGLAS. Well, the big companies such as United States Steel, or General Motors, or DuPont will have specialized transportation requirements and they have a good deal of muscle behind any request which they make, but the relatively small businessman who doesn't have a specialized agency to deal with these matters—in the matter of foreign trade and what may be experienced in domestic transportation—is at a tremendous disadvantage. He doesn't know what the situation is. It is hard for him to find out. He gets caught in the tangle of conference procedure. Even if he makes a protest he doesn't carry much weight in the protest. Dependence upon the complaints of individuals to recognize the inequities in ratemaking is a very slender reed. It was for this purpose that we have set up a public utilities commission to deal with gas, electricity, and phone rates and the rest.

So I would suggest that Mr. Greiner places too much reliance on individual protests to effect adjustments to a degree that will be effective. I think you will find that they tend to be effective for the large shippers who can deal with the conference on substantially equal terms, but this resource is not available to the small shipper.

Mr. BRIDWELL. Your point is well taken, Mr. Chairman, and from my observations and from reading Mr. Greiner's study this would be a point on which I would be most critical of conference practices. Even though, theoretically, the opportunity to request a rate or protest a rate is open to any individual, as a practical matter the small shipper without reasonable resources or a shipper far removed geographically from the conference office is at a disadvantage in seeking a rate which will move whatever commodity he is interested in.

Chairman DOUGLAS. Well, I talked with steel companies with capital values of hundreds of millions of dollars—they are relatively small companies—and they were bewildered by this ratemaking process and they never used it.

Mr. BRIDWELL. This is one of the reasons, Mr. Chairman, that we are considering, quite actively considering, in effect, a handbook, a practice or procedure handbook, which the Department of Commerce can publish and make available.

Chairman DOUGLAS. Are you going to include in that the fact that they can always appeal to the Federal Maritime Commission.

Mr. BRIDWELL. Yes. But I think this is partly a matter of providing the assistance to a small shipper about how he actually goes about seeking a rate reduction.

Mr. BOGGS. Mr. Bridwell, did Mr. Greiner take into account the number of requests which came from freight forwarders to the conferences?

Mr. BRIDWELL. I am sorry, Mr. Boggs, please repeat that?

Mr. BOGGS. Did Mr. Greiner take into account the number of requests which came from freight forwarders representing shippers to the conference rather than the shipper, itself, to the conference?

Mr. BRIDWELL. I cannot answer that. I will check that for the record, if you would like.

(The following statement was subsequently supplied by the Department:)

Mr. Greiner advised the Department that he did see requests for rate adjustments prepared by freight forwarders; however, they were relatively rare and conference officials apparently did not encourage requests from this source, preferring to receive rate requests from individual shippers or trade associations.

Chairman DOUGLAS. I notice that the people who were interviewed on the listing you have submitted were almost exclusively members of the conference, not representatives of the shippers.

Mr. BRIDWELL. That is correct. But, Mr. Chairman, he primarily relied upon interviews of the conferences in terms of checking their practices and their procedures. The shippers that he interviewed were largely big shippers. In addition—if you will recall the Federal Maritime Commission held hearings in a number of cities in the United States and public hearings at which the shippers had the opportunity to come in and tell the Commission—to testify before the Commission—their problems with rate conferences. Mr. Greiner sat

in on part of those hearings and had the record available to him on all of them.

So there were additional shippers which are not on our list here which we can make available to the committee.

(Information following was later received from Department:)

Mr. Greiner advised the Department that he interviewed about 10 shippers and that among these were Mr. Harris Baer, Kraemer Merchantile Co., New York, N.Y.; Messrs. Hegyi and Senzel, Hegyi and Senzel, Export Managers, New York, N.Y.; Mr. Donald Bolger, E. I. du Pont de Nemours & Co., New York, N.Y.; Mr. N. Colin Smith, National Electrical Manufacturers Association, New York, N.Y.; Mr. Paul Parfrey, American Machine & Foundry Co., New York, N.Y.; and Mr. Edward Hilton, American Plywood Association, Tacoma, Wash.

Chairman DOUGLAS. Proceed.

Mr. BRIDWELL. I departed from my prepared testimony at the point at which the question was raised regarding a rate being too high so that no cargo moved and this was judged as a bad rate for both the conferences and the shipper. I will resume: A low rate at which cargo moves in no appreciably greater volume than would move at a higher rate is a bad rate for the conference.

Chairman DOUGLAS. In other words, the conference will charge what the traffic will bear, is that correct? If they can get a higher rate it doesn't add anything to the volume of traffic. It is good for the conference?

Mr. BRIDWELL. That is correct.

Chairman DOUGLAS. Is it good for the company?

Mr. BRIDWELL. The difficulty for the conference is to find the right combination.

Chairman DOUGLAS. You still say it is good for the conference.

Mr. BRIDWELL. Certainly.

Chairman DOUGLAS. Why?

Mr. BRIDWELL. From their standpoint, Mr. Chairman.

Chairman DOUGLAS. Because the elasticity of supply is zero and increases in rates do not diminish shipments, or low rates do not increase shipments. What Greiner says as it is being paraphrased by Bridwell is that it is a bad rate if the conference doesn't get the maximum amount out of it.

Mr. BRIDWELL. From the standpoint of the conference.

Chairman DOUGLAS. Yes, from the standpoint of the conference. You represent the United States of America and it is not merely a soviet of the conferences.

Mr. BRIDWELL. Well I hope not, Mr. Chairman. The point, of course, is that in terms of the way a conference representative would look at it, it would be a bad rate; quite obviously this is not in the public interest viewpoint.

Chairman DOUGLAS. If you raise rates and get away with it without much reduction in volume—go ahead and do it. That is the thing to do. Don't you think the Maritime Commission should adopt this as its standard?

Mr. BRIDWELL. No, sir.

Chairman DOUGLAS. All right, proceed.

Mr. BRIDWELL. The conferences then, of course, go through a procedure—no matter how inexact in terms of any sort of statistical analysis—in which they, in effect, estimate the elasticity of demand.

It is the theoretical problem of estimating the elasticity of demand, and this is no small feat in practice. Apparently, largely by intuition, conference people constantly make such estimates. This is done largely on the basis of their experience and it is a judgment decision.

The experienced shipping line representatives have a sense for the relationship between rates, volume, and revenue but no precise means to take measurements. This tends to make them conservative in a sense that errors on the high side will normally result in complaints from shippers, and errors on the low side may go unnoticed.

Chairman DOUGLAS. Just a minute. You say that complaints from shippers will tend to make the conferences conservative as far as an increase in rates is concerned but that errors on the low side will go unnoticed and that therefore there is a tendency to make errors on the low side rather than on the high side.

Mr. BRIDWELL. No, sir—that is not my interpretation. Let's try to translate that. My judgment would be that the error is on the high side in terms of rates.

Chairman DOUGLAS. What meaning do you attach to the word "conservative"? You are not now speaking of political opinions but simply of rate judgments.

Mr. BRIDWELL. Again, in the context of the conference the word "conservative" is used in the sense of what is best for the conference and that is the reason that I translated that to mean that their error is on the high side in terms of the rate and the controlling factor is the complaint of the shipper.

If there is no shipper of sufficient size or as you earlier said, of sufficient muscle, then the high rate is likely to go unnoticed.

Chairman DOUGLAS. Well, you say it is the low rate which goes unnoticed—errors on the low side may go unnoticed.

Mr. BRIDWELL. Errors on the low side—meaning errors as far as the conference is concerned—errors which to them would make the rate too low.

Chairman DOUGLAS. All right. I submit to the inexact use of the language in the printed statement. I think that the record will clarify this.

Mr. BRIDWELL. I would be glad to clarify it to any extent necessary, Mr. Chairman. I can understand the confusion over the words as they are prepared here.

Chairman DOUGLAS. Proceed.

Mr. BRIDWELL. I want to come back to the item of cost elements at the time we discuss the cost study which we will present in a few minutes.

3. The cost of operation is a consideration in ratemaking. Some believe that most of the cost elements in the operation of steamship lines are irrelevant to individual rate decisions. Such observers believe that once a ship is committed to a berth, most of the costs of operating the ship are fixed and there is no meaningful basis for allocating these costs against specific items in the cargo. Recognition of this is often cited as the prime reason for the development of the existing pricing system. There is, of course, one cost element upon which all agree is relevant to ratemaking, the cost of loading and discharging cargo. This cost varies more or less directly with the kind

and quantity of cargo moved, thus it serves as a floor below which individual rates normally do not fall. In addition to this cost factor, there are cost elements which are directly a function of the characteristics of cargo, for example, susceptibility to loss or damage, which also influence rate determinations.

Thank you, Mr. Chairman.

Chairman DOUGLAS. Mr. Bridwell, I want to thank you for your statement but I must say very frankly I do not think it satisfies the committee's request for information on the operation of the conferences. In my judgment it should be an analysis of the number of lines, the specific lines which are members of these conferences, and the voting procedure, which as I understand it, is for each line to cast one vote. We ought to work into the number of votes held by foreign lines in the outlying conferences and the number of votes held by American lines classified by company. And the big subject of pooling is completely ignored. To what degree are the pools operating in these conferences under which earnings are redistributed on some basis other than the receipts from a particular line? And to what degree is there a relationship between the outbound pools and the inbound pools? To what degree are services paid by lines in the inbound pools transferred to American lines whose chief business is in the outbound service?

There are a whole lot of questions and while I know that you didn't have much time to do it—you can do it. You can make a study of the operations of the conferences; and I want to suggest that in a future study you include these and other items.

This is not said in any way to rebuke you but merely to indicate that what you have presented is merely a surface study.

I would like to make some preliminary statements. I think the testimony reveals first that there is rate discrimination by the conferences against U.S. exporters.

Second, that this discrimination has a very substantial effect on our balance of trade.

Third, the highest rates are the conference rates.

Fourth, The conference does not set rates by rational economic methods.

And finally, I want to raise a question—Should the Department of Commerce allow the lines it subsidizes to participate in these monopolistic bodies which set discriminatory rates against American exporters without regard to economic factors?

I think the whole Government can ponder that last question.

Now then, you have another study?

Mr. BRIDWELL. Yes, sir.

Chairman DOUGLAS. We don't have too much time. I wonder if you would be willing to summarize that statement.

Mr. BRIDWELL. Yes, sir. The statement, which is quite lengthy and detailed, I would like to submit for the record, Mr. Chairman.

Chairman DOUGLAS. Yes.

Mr. BRIDWELL. It describes in considerable depth the methodology that was followed in this study because it is a little bit unusual. I would like to comment that in the process of this study the cooperation of the Committee for American Steamship Lines was sought and

obtained and that a considerable amount of data used in the study by our contractor, Ernst & Ernst, was proprietary information from two principal sources.

One—the shipping lines themselves, and

Secondly—from reports that are legally restricted, reports to the Maritime Administration which have certain legal restrictions.

Chairman DOUGLAS. As I see it you discuss methodology more or less for the first 21 pages of your study.

Mr. BRIDWELL. I believe methodology is woven into it.

Chairman DOUGLAS. I wonder if you would start with the part on findings of the report.

Mr. BRIDWELL. Yes, sir. I think if I may just take 1 minute to describe first the general method and I will try to make it as brief as possible.

The attempt was made here to develop costs on a basis of a ship-space-rental system. In other words, both inbound and outbound, each vessel has a certain amount of space theoretically for rent, not theoretically it is actually for rent in the sense of cargo and freight. So that the whole system is based upon a space rental system.

Included in this are the cost of both loading and unloading or discharging the cargo and the direct operating costs of the vessel, plus the various administrative and overhead charges so that—

Chairman DOUGLAS. This is just simply the operating cost of the transportation—for the loading and unloading costs?

Mr. BRIDWELL. Yes, sir; it was separated so that we have a breakdown of what the loading and unloading costs are in each of the ports studied. This also was developed on the basis of selected trade route and then—because the cost varied by vessel type—the predominant vessel on each trade route was identified and the costs were developed on that particular vessel. In addition specific ports were selected for loading and unloading costs.

Chairman DOUGLAS. We have to conserve our amount of time.

Mr. BRIDWELL. All right, I will proceed with the report findings.

Some of the more important observations made from data showing vessel operating and port costs are:

1. The U.S.-flag vessel operating costs per measurement ton before subsidy (operating differential subsidy plus cost effect of construction subsidies) range from 53 percent to 81 percent higher than the same costs after subsidy.

2. The vessel operating cost unit rates for U.S.-flag operators after subsidy are extremely close to those of foreign-flag competitors.

3. The port cost per measurement ton varies widely ranging from 15 cents at one foreign port to \$2.29 at one U.S. port. Part of the variance is due to application of port costs, which are largely unrelated to quantity of cargo loaded or discharged and to a smaller quantity of cargo handled at a particular port on some typical voyages.

Chairman DOUGLAS. What is meant by port costs as distinguished from loading and unloading?

Mr. BRIDWELL. Port costs include pilot fees, wharfage charges—there are certain dock—

Chairman DOUGLAS. Clearance of papers?

Mr. BRIDWELL. That is right. Dock fees that are unrelated to any specific amount of cargo.

Chairman DOUGLAS. Would you identify some of the ports in question?

Mr. BRIDWELL. The ports studied were New York, Philadelphia, and Baltimore, domestically.

Chairman DOUGLAS. And foreign?

Mr. BRIDWELL. Antwerp, Rotterdam, Hamburg, and Bremen, in northern Europe, and Yokohama, Manila, and Hong Kong in the Far East.

Chairman DOUGLAS. Liverpool?

Mr. BRIDWELL. No, sir. Buenos Aires, Santos, and Montevideo, in Latin America.

Chairman DOUGLAS. No British ports?

Mr. BRIDWELL. No, sir.

Chairman DOUGLAS. No French ports? Not Le Havre?

Mr. BRIDWELL. No, sir—northern Europe.

Chairman DOUGLAS. I wonder if you would put the port costs of these specific ports into the record?

Mr. BRIDWELL. No, sir. That information is confidential and could not be put in the record. We will, however, make it available to the committee on a confidential basis.

Chairman DOUGLAS. Proceed.

Mr. BRIDWELL. This is point No. 4: generally, the port costs per measurement ton are significantly lower in foreign ports than in U.S. ports.

Some findings of the Ernst & Ernst report in regard to relatively high levels of space utilization on U.S.-flag vessels are:

1. While the U.S.-flag vessels have essentially the same unit cost levels under the actual conditions of the typical voyage, they would face a substantial cost disadvantage if the foreign-flag vessels were able to improve space utilization and reduce voyage hours to the levels of U.S.-flag vessels.

Chairman DOUGLAS. I take it this is an indirect way of stating that U.S.-flag vessels utilize space more fully than foreign-flag vessels and they have higher cruising speeds.

Mr. BRIDWELL. Yes, sir—this is one of the significant factors that comes out in the Ernst & Ernst report.

Chairman DOUGLAS. Would you put the figures on that in the record?

Mr. BRIDWELL. Excuse me, just one moment. (Mr. Bridwell confers with Mr. O'Mahoney.)

I am afraid we are going to run into a problem, Mr. Chairman. I believe that the space utilization figures which you have requested come under the provisions of the Criminal Code relevant to the related provisions of the Federal Reports Act—I would ask Mr. O'Mahoney, who is the attorney for our office, to direct himself to this point.

Mr. O'MAHONEY. As you probably know under 18 U.S.C. 1905, certain information which comes to an employee of the Federal Government in the course of his official duties, which information concerns or relates to trade secrets, processes, operation, style of work,

or apparatus, or to the identity, confidential statistical data, and so forth, may not be revealed.

This study was restricted to a rather narrow group of carriers so the information would be in that category.

Chairman DOUGLAS. Continue.

Mr. BRIDWELL. Point No. 2 is really the reverse of point number 1, so I will not read that.

3. The largest single factor contributing to this cost reduction potential is space utilization. Generally, the U.S.-flag vessel operator's voyages included in the sample demonstrated an ability to attain a fuller load with fewer port calls and less times in port. This voyage time advantage was partially attributable to generally higher vessel speed.

Chairman DOUGLAS. The U.S.-flag vessels are superior to foreign-flag vessels in space utilization and speed?

Mr. BRIDWELL. Yes, sir. I think the three significant factors here would be the space utilization, the vessel speed and the faster turn-around time for U.S.-flag vessels.

Chairman DOUGLAS. Well, this seems to indicate that, comparatively speaking, the U.S.-flag vessels are not so obsolete as they are sometimes claimed. And we do have advantages in methods of shipping. I understand we are increasing the use of the container system for freight shipments and the Europeans are not using it.

Mr. BRIDWELL. Yes. We are not yet at the place where we have in our foreign commerce what are described as container ships. However, there is considerable tonnage that moves in containers. The Europeans or the foreign competition also use containers. From a standpoint of maritime promotional programs one of the things that we are currently looking at is whether it is possible to reap a sizable advantage by constructing container ships as such.

Chairman DOUGLAS. The higher operating costs primarily result from wage scales, do they not? And then these are at least partially offset by the advantages in speed and space utilization.

Mr. BRIDWELL. Yes, sir; that is correct.

Chairman DOUGLAS. Can you tell the degree to which these two factors serve to cancel each other out?

Mr. BRIDWELL. The Ernst & Ernst report doesn't quantify these factors but we will attempt to develop something along this line.

Chairman DOUGLAS. The statement of operating costs does not refer to space utilization. In your study you discuss vessel operating costs and port costs.

Then, following that, you discuss space utilization as a part of vessel operating costs, or is it a separate factor?

Mr. BRIDWELL. It is a separate factor.

Chairman DOUGLAS. Proceed.

Mr. BRIDWELL. Continuing, Mr. Chairman, with the cost for individual commodities the five cost elements for shipping a commodity between two ports were narrowed to three major elements (1) cargo loading cost, (2) cost of ship space occupied, and (3) cargo unloading cost in the major cost analysis by Ernst & Ernst. While the costs of ship space occupied vary by flag of registry, ship type, trade route, and port, the cargo handling costs were computed at the same rate for all ships, differing only by commodity and port.

The cargo handling costs, loading plus unloading, are a significant factor in the total unit cost of shipping the commodities studied. For example, with canned foods and cotton manufactures, Ernst & Ernst made the following observations:

1. Cargo handling costs—in other words, loading and unloading—account for 25 percent to 67 percent of the total unit cost among the items listed, illustrating both the magnitude of these costs and the divergence among commodities as well as the difference in prevailing cost levels among ports.

2. The cargo handling costs are generally substantially higher at U.S. ports than at foreign ports, ranging from 138 percent to 1,224 percent higher for loading and from 135 percent to 1,200 percent higher for unloading among the given examples.

3. Cargo loading costs generally exceed cargo unloading costs for a particular commodity within a given port, ranging from 14 to 36 percent higher among the given examples. Since overall cargo handling costs are generally lower at foreign ports than at U.S. ports, this disparity between loading versus unloading causes imports generally to have lower total unit costs than exports, ranging from 2 to 15 percent lower among the items shown between any two particular ports.

Chairman DOUGLAS. Now, the third part of your statement is very important. Let us amplify it a bit more fully. The higher loading and unloading costs in the United States are sometimes used as justification for the higher shipping rates attached to outbound freight than to inbound, but now every ton that moves out has an American loading cost and European unloading cost.

Every time a ton moves in there is a European loading cost and an American unloading cost.

Now, what is the relationship between loading and unloading costs in the United States and loading and unloading in Europe?

Mr. BRIDWELL. I believe it is a significant factor, Mr. Chairman, and I believe this would be the flow of cargo in and out. In other words, to take an extreme example—if 100 percent of cargo was outbound then it would be, of course, significant that the loading cost would be a domestic cost and would be higher than the unloading cost. If, for example, the reverse were true and 100 percent were inbound then the precise opposite situation would occur. So it really depends upon the flow of trade on any given trade route.

Chairman DOUGLAS. That is a very inconclusive answer. If the disparity is no greater on loading costs than on unloading costs then it does not make any difference because each shipper would bear the same costs. But you say there is a slight difference, but how much of a difference?

Mr. BRIDWELL. Ernst & Ernst identifies the difference between loading and unloading costs as being in the range of 14 to 36 percent higher to load than to unload.

Chairman DOUGLAS. Two to fifteen percent—what proportion—

Mr. BRIDWELL. Excuse me—I gave the wrong figures—2 to 15 percent, you are correct, sir.

Chairman DOUGLAS. And what proportion of the total shipping cost is related to loading and unloading cost?

Mr. BRIDWELL. Mr. Chairman, I would be glad to have Dr. Brimmer comment on that but again I am afraid that it would vary by specific commodity because of its relationship between loading and/or unloading charge and the total rate.

Chairman DOUGLAS. Dr. Brimmer would you care to comment on this?

Mr. BRIMMER. Mr. Chairman, I have just a brief comment on that. The data would probably show that the differential between loading and unloading in the United States is higher here than in Europe, but the difference between loading and unloading here appears to be greater than the difference between loading and unloading in Europe.

The net effect of that difference would appear to be an aggregation of the differential we observed earlier between outbound rates and inbound rates. This follows because it would be higher if loading and unloading costs in the United States are both higher than they are abroad. The loading cost here is much higher comparatively than it is in Europe.

Chairman DOUGLAS. As compared to unloading.

Mr. BRIMMER. Yes. And this would appear to put—

Chairman DOUGLAS. You say much higher?

Mr. BRIMMER. No; higher.

Chairman DOUGLAS. You are a very careful statistician but I do not know that statistical value of "much."

Mr. BRIMMER. I am bound, Mr. Chairman, by the counsel's advice on what we can say about the numbers. As I recall the relationship of the underlying numbers behind this statement—the spread between loading and unloading costs in the United States—loading being higher—is bigger than the spread percentagewise between loading and unloading in Western Europe.

Chairman DOUGLAS. You made a very careful statistical study but you cannot tell what moderating effect this will have unless you know the quantitative value.

Mr. BRIMMER. I agree, Mr. Chairman.

Chairman DOUGLAS. What we have is a fraction of a fraction of a fraction. If I remember my differential calculus, we are speaking of the second differential. I would like to ask Mr. O'Mahoney if there is any statutory barrier to making this information available to the staff so it can be published.

This is not a question of individual companies. It may strengthen the case of the shippers.

Mr. O'MAHONEY. Senator, that information can be made available to the staff on a confidential basis.

Chairman DOUGLAS. Could it be published?

Mr. O'MAHONEY. I didn't think it could be published. However, I don't think I ought to make a judgement as to what the committee would want to publish. We would supply it on the basis that it was being given to you as confidential, and you would have to make your own judgment.

Chairman DOUGLAS. As a matter of fact it may be distinctly to the advantage of the conferences if this material were published because if the differential is greater here than abroad—then this obviously would justify a higher outbound rate than inbound rate.

I notice Dr. Kreinin you are shaking your head on this. I would like to have your opinion.

Mr. KREINEN. I am just toying with the figures and it seems to me that what they imply would accentuate the rate differential, the rate discrimination against the United States.

Chairman DOUGLAS. Well, your rates include loading costs and unloading costs.

Mr. KREINEN. The rates do include them.

Mr. BRIMMER. Yes, the rates cover all these.

Mr. BRIDWELL. Mr. Chairman, may I try this from another standpoint?

Chairman DOUGLAS. Yes.

Mr. BRIDWELL. With the lower loading and unloading charges in foreign ports, I think it is reasonable and easy to see that in a foreign-to-foreign government there is definitely a cost advantage to a foreign shipper or to a foreign steamship line.

The problem then becomes what really is the difference between a foreign-flag operator and a U.S.-flag operator in a movement inbound or outbound in which one of the ports is a U.S. port.

Chairman DOUGLAS. Well, I think that is the question—not whether it is foreign flag or American flag.

Mr. BRIDWELL. I was citing that only to develop the idea that it is a fairly easy thing for me to see in terms of a foreign-to-foreign movement. It is more difficult to see in terms of a movement in or out involving a domestic port, a U.S. port.

This leads me back then to my earlier comment that it seems to me that the real difference depends upon the flow of cargo in and out.

Chairman DOUGLAS. I would say that every inbound here is an outbound from some place else, and in a foreign port every inbound is an outbound from some place else.

Mr. BRIDWELL. And to the——

Chairman DOUGLAS. If there is no differential in either place—let's see—if loading costs are higher than unloading costs by the same amount in the waters at home there is no advantage, but if outbound loading costs are greater in the United States than inbound loading costs and if the differential is much greater than in Europe, then there is a handicap which our shipping lines have to bear on outbound traffic.

Mr. BRIMMER. This is what I meant by aggregative differential; but on some of these commodities, Mr. Chairman, in our study, it may be as much as a third of some of the rates that are lower outbound than inbound. So whether it is just the impact of those costs would be in the reverse, how would it work out if you would depend upon the difference in the commodities which we have not done?

Chairman DOUGLAS. Not everybody has that fine rationality of statistical analysis but you are trying to produce a greater degree of rationality in the process.

I think we have raised some very fundamental issues this morning. I am going to let Mr. Boggs raise a question.

Mr. Boggs. Mr. Knowles just pointed out, as the study is presented, it doesn't provide any relationship between actual costs and the rates in effect on particular commodities. Is there any study that you have or you could prepare which would provide some comparison of the

canned goods versus the actual rate charged by cargo handling costs on the canned goods?

Mr. BRIDWELL. Mr. Boggs, one of the earlier points that is made in the prepared testimony is that the Ernst & Ernst study does not have any consideration of rates whatsoever. It also is important to note that there are no volume figures at any point in the Ernst & Ernst report. It is all on the basis of the volume of one—usually a measurement of ton.

The answer to your question is that we have undertaken some analysis so far of the relationship which you are mentioning. It is completely inconclusive and we would like to continue that and see what we can come up with. I would hesitate to promise anything at this stage except that it is under analysis.

Mr. BRIMMER. May I suggest at this point that we already have some notion—at least about the direction of the analysis. We hesitated to prepare a paper on this, Mr. Boggs, because we have a print-out from the computer and this time, Mr. Chairman, we did try a computer run on a study which we have not yet examined and digested ourselves.

I could describe the kind of test which is to be prepared—and if you will forgive me for a moment I have to become a little bit technical. On the assumption that freight rates are prices we can ask the question—to what extent would prices vary with respect to costs, the value of shipments and the quantity of shipments?

This kind of question lends itself to examination on the basis of statistical technique, or multiple regression, in which we would write down the equation and by which we would try to make price a function of cost, value, and quantity.

We would then try to identify commodities by using the Ernst & Ernst cost data at the beginning. We would then try to match these with underlying shipping documents, the quantity of shipments, and the value of shipments, and then from the Federal Maritime Commission we could get the applicable freight rates.

Then we would have a series of four variables and observations on each.

From the Ernst & Ernst study so far it looks as though if we take the 21 commodities involved and the number of trade routes involved—I forget the exact number right now—we might end up with some 600 or 700 observations, that is the maximum. Of course, we know in advance that we could not hope to match freight rates, cost, value, and quantity on all of these. You would have to lose some. But we would still end up with a fairly large number of observations—300 to 400 at least.

We could put these data on the computer and we could program them on the computer in such a way that we could end up with coefficient describing the general variation in rates with cost, value, and quantity taken collectively and separately.

This would be built into the program. It is simply the normal equation used in the multiple regression method. Now, that would be the strategy.

There are several basic policy questions at issue. First of all, there is the question about the advisability of pushing the Ernst & Ernst

data this far. At some point you will undoubtedly continue to run into restrictions on the use of the data.

The second policy question is about the resources and where they would fit into the array of other things to be done.

Chairman DOUGLAS. May I say on this last point, I think it would be extremely useful; without anticipating the efforts that the European countries are going to make in the forthcoming Paris conference. I understand by the grapevine that one of their arguments is that the value of shipments from Europe to the United States is greater than the value of our exports to Europe, and they are going to try to prepare rates in conjunction with value. Apparently this is going to be their defense.

Now when do you go to Paris?

Mr. BRIMMER. Next week, sir.

Chairman DOUGLAS. Can you run your computers sometime between now and next week so we can get some preliminary figures?

Mr. BRIMMER. Let me leave aside the first two questions. We are faced with a basic technical problem. Now we will have to match the cost category with actual commodities. That is a job the Census Bureau would have to do and it will have to be done by hand.

The most serious obstacle is the matching of the freight rates to the commodity description. As I mentioned earlier for 1,000 observations we have here it took our freight rate experts somewhere in the neighborhood of 3 or 4 months. These are the technical obstacles. The conceptual problems can be mastered and the calculation problems can be mastered.

Chairman DOUGLAS. Why can't you use the commodities you have already done?

Mr. BRIMMER. There would be some overlapping in these but it is our hunch that there is not very much.

Mr. BOGGS. Overlapping between yours and Ernst & Ernst?

Mr. BRIMMER. Yes. You see the Ernst & Ernst study has representative commodity categories. We have actual shipments.

Mr. BRIDWELL. The Ernst & Ernst commodities were selected primarily on the basis of their cost characteristics, mainly cargo handling and stowage characteristics, so it was not a precise matching of the commodities selected by Dr. Kreinin.

Mr. BOGGS. Can I just ask—are you identifying inbound and outbound in foreign commodities in your cost value?

Mr. BRIMMER. This could be done, Mr. Boggs. We were going to have that classification.

Let me repeat, we have been toying with this notion. There is a basic policy decision—in other words the Secretary has not said go ahead yet, and I would not like to give the impression here that this is a settled matter and we will come forward with this study. We are still exploring the notion.

Chairman DOUGLAS. May I ask this: Does the Department of Commerce have any findings on the effects of Government rates on commercial rates?

Mr. BRIDWELL. No, sir. We have not. There has been some preliminary work done on it but we have not progressed this analysis to the point where we would attempt any findings.

Chairman DOUGLAS. It is stated that Government rates are higher than commercial rates. The Government is charged more than the private shippers. Now in April we heard testimony from the Department of Agriculture and from AID indicating that they desire to transfer their cargo functions to the Commerce Department. What is your opinion on that?

Mr. BRIDWELL. Mr. Chairman, I believe in a letter—and I have forgotten the date—you asked the Secretary of Commerce to respond to this question and I believe his response to you by letter was that it was under consideration in the Department and he was not yet ready to make a statement on it.

Chairman DOUGLAS. Now, that was approximately 2¼ months ago.

Mr. BRIDWELL. Yes, sir. As a matter of information to you Mr. Chairman, this is one of the factors that is being considered in the development of a new maritime policy. I believe you are aware that the Secretary is working closely with the Maritime Advisory Committee and that an interagency task force has been created to develop a new maritime policy and program. This is one of the factors that is being considered in that work.

Chairman DOUGLAS. When do you expect to reach a decision?

You know in England when they want to postpone a decision they appoint a Royal commission. The Royal commission takes evidence for 2 or 3 years and by that time everybody has forgotten about the subject. I think the Royal commission's contribution so far as deciding issues by positive action is concerned—they decide issues by not deciding them.

Mr. BRIDWELL. Without in any way attempting to be facetious, Mr. Chairman, I believe the best guarantee is the fact that President Johnson has said that he will come up with a new maritime policy.

Chairman DOUGLAS. President Johnson is a very busy man. He has a number of things on his hands. I would not expect him to go through all these minute computations. The phrase—this is the judgment of the President—generally means that it is the judgment of the bureaucrat and he brings the awesome power of the Presidency behind his own judgment.

So when do you expect to furnish the material to the President so he can say yes or no on it?

Mr. BRIDWELL. By this fall.

Chairman DOUGLAS. Fall consists of the months of September, October, and November—from the 20th of September to the 20th of December—sometime in that period?

At the beginning of the period or toward the end of the period?

Mr. BRIDWELL. I would hope toward the beginning of the fall.

Chairman DOUGLAS. How substantial is your hope? Is it pale and attenuated or is it vigorous?

Mr. BRIDWELL. I would categorize it as vigorous.

Chairman DOUGLAS. Well, let it not wither under the heat of summer.

Mr. BRIMMER. Mr. Chairman, I hesitate to mention this since Allen Boyd is Mr. Bridwell's immediate superior and he reports to Allen Boyd rather than to me, but Allen Boyd has just come into the Commerce Department as Under Secretary of Transportation and one of his principal interests is chairman of that task force which Mr. Bridwell mentioned to design a new maritime policy.

We have every reason to believe that the Secretary has made it known that he did not want it to be moved on to the staff people but that he wanted the policy officers in the Department to work on it. This apparently will get done in the time that Mr. Bridwell mentioned.

Chairman DOUGLAS. This report was supposed to be ready in 60 days. Sixty days from now is the 1st of September. Do you interpret that as fall? Do you move fall forward to the 1st of September.

Mr. BRIDWELL. That is basically my comment when I said that I hoped that it would be the early part of the fall period, Mr. Chairman.

Chairman DOUGLAS. Well, thank you very much.

Mr. BRIMMER. Thank you.

Chairman DOUGLAS. We will recess subject to call and I want to say that there will be no more delays beyond the 20th of July on the report from Admiral Harlee. I want to make it clear that it is not his fault. We have given him a 3-week postponement.

(The statement of Lowell K. Bridwell, in regard to transportation costs, follows in its entirety:)

PREPARED STATEMENT OF LOWELL K. BRIDWELL IN REGARD TO OCEAN
TRANSPORTATION COSTS

In March 1964, the Department of Commerce made a contract with the public accounting firm of Ernst & Ernst for a study of selected unit costs for ocean-borne shipments via common carriers. The basic data used in the development of unit costs required, inter alia, the use of confidential sources both within and outside of the United States. Under the provisions of the Criminal Code (18 U.S.C. 1905) and related provisions of the Federal Reports Act of 1942 (5 U.S.C. 139), the confidentiality of material emanating from a number of U.S. sources must be protected. For this reason my testimony on this report is limited to summary type reporting by which no individual firm may be identified.

The data received from various sources were analyzed and reviewed to develop the total unit cost of shipping selected commodities in liners over selected ocean trade routes on the predominant U.S. and foreign-flag ships providing service over each route. While U.S. and foreign-flag costs were compared, the study of freight rates was not within the scope of this contract. By a careful selection of a limited number of commodities, routes, flags of registry, and ports for intensive examination as to transportation cost, Ernst & Ernst aimed to provide representative costs of broad applicability. In this respect, the report presents in detail the cost of moving representative commodities:

1. Over three principal trade routes;
2. Between major U.S. and foreign ports along those routes;
3. In the predominant ship types used by U.S. and selected foreign-flag operators over those routes; and
4. On a voyage representing the most typical actual pattern in terms of ports of call, hours at sea and in port, port-to-port cargo movement, and overall vessel utilization.

The initial task for Ernst & Ernst was to determine the individual cost elements constituting this cost and to gather the data necessary for computing the cost. The cost elements may be broadly categorized as follows:

1. Vessel operating costs, namely, the full cost of operating a particular type of vessel in a specific service area.
2. Port costs applicable to the ship, that is, charges assessed against the ship at a port by virtue of the vessel entering the port, such as tug hire and dockage. These costs are related primarily to the vessel size and duration of port visit rather than to the cargo handled.
3. Cargo handling costs, for example, charges incurred for loading and unloading cargo, some of which are assignable to the cargo handling task as a whole while others are related to specific commodities.

Many of the costs are not available in a manner relating them directly to units of commodities carried. For example, the standard practice in accounting

for vessel operating costs is to accumulate direct expenses, such as crew wages and fuel consumed, as a total amount for each voyage. Other expenses, such as depreciation expense, are annual amounts charged to a vessel but not ordinarily charged to a voyage. General, administrative, and interest expenses are examples of expenses not usually identified as to a specific ship or even a fleet serving a trade area but which are charged to overall operations. Similarly, port charges on a ship, although charged to a specific voyage, are incurred because the ship made a call at a port and are not necessarily related to the volume of cargo loaded and discharged. Even in the area of cargo handling costs, certain cost elements, such as overtime pay are not directly related to the specific commodities handled but apply to the cargo lifted as a whole.

Accordingly, having determined which cost elements were pertinent and having identified the form in which they were reported, the next step was to develop practical methods for allocating such costs to specific commodities delivered from one port to another. Upon considering several methods, the approach selected was to develop a ship space rental cost from those cost elements relating to the ship (vessel operating costs and port charges on the ship) and to develop rates per unit of commodity from those cost elements relating to cargo (cargo loading cost and cargo discharge cost).

The unit of measurement selected for the allocation of space rental cost was a measurement ton (40 cubic feet). This unit was selected because it was found that cargo liners generally achieve substantially higher utilization of available space capacity than of cargo deadweight capacity. Since 1 measurement ton of cargo on the dock occupies more than 40 cubic feet of ship space (due to dunnage, space between cargo, etc.), an additional factor was developed to relate cargo cubic measurement to space utilized by the cargo in the ship.

The cargo handling costs were developed on both a measurement ton and a long ton basis (2,240 pounds). By using this technique, the total cost of shipping 1 long ton of a commodity between ports would consist of the cargo loading cost at the port of origin plus the ship space rental cost between the ports, plus the cost of unloading at the port of destination. If the commodity stowage factor is 120 (stowage factor represents cubic feet per long ton), and if 3 measurement tons on the dock occupy 160 cubic feet of ship space, 1 long ton would, therefore, require 4 measurement tons of ship space, and consequently cost four times the basic rent charge computed per measurement ton.

Accomplishing the allocation just described required development in considerable detail of the most representative voyage pattern of each predominant ship type studied. The more important statistics required were: (1) ports of call in order of call, (2) voyage hours in each port and at sea between ports, (3) utilization of deadweight and cubic space available for cargo, and (4) port-to-port flow of cargo movement. Techniques for the allocation of costs from the form in which they were originally reported to a unit cost basis also were required. In summary, the approach outlined required data gathering and analyses in the following areas:

1. Voyage pattern statistics:

(a) Identification of the principal carriers by flag of registry and predominant ship type.

(b) Determination of the major ports along the selected routes.

(c) Selection of commodities with varying stowage characteristics (bags, boxes, drums, etc.).

(d) Determination of the most common voyage pattern for each predominant ship type.

2. Vessel operating costs: The total costs of operating ships of the predominant type and flag of registry were compiled in the form the data were available. From such data, daily cost rates were developed.

3. Port charges on the ship: The costs incurred by virtue of the ship having called at a port, such a tug hire and port dues, were determined on the basis of the average dollar amount per call for each predominant ship type.

4. Cargo handling costs: The direct costs of loading and of discharge were determined for the specific commodities studied and indirect costs compiled and allocated to these specific rates. Also the relationship between cargo cubic measure on the dock and ship space utilized was developed as an average for each commodity so that the space used for dunnage and empty spaces between containers, such as drums, and cargoes could be allocated.

5. Development of ship space rent data: Vessel operating costs and port charges on the ship were allocated to the ship space utilized based on the voyage pattern statistics.

The first step was to determine the principal operators under foreign flag of registry competing with the U.S. operators over each trade route. This was determined on the basis of the tonnage moved and of the frequency of vessel activity.

After the principal foreign-flag competition had been established for each trade route, the analysis to determine the predominant ship type and the typical voyage followed basically the same pattern for each flag of registry and each trade route.

The predominant ship type was determined by an examination of four characteristics of the ships in operation which basically affect the utilization of each ship and the unit cost of carrying cargo. These characteristics were the deadweight tonnage, the cargo carrying capacity, the normal speed, and the age of the ship. The competitive foreign-flag vessels operating on a trade route do not conform as closely to an established type as do the U.S.-flag vessels. However, the same vessel characteristics for foreign-flag ships were studied, and a selection was made of the largest group with similar, although not identical, characteristics, each having characteristics which fall within a relatively small range.

The typical vessel movement was developed through an analysis of the activity of vessels of the predominant type. The movements of these vessels were analyzed to determine (a) the number of ports of call in the United States, (b) the number of ports of call overseas, (c) the identity of these ports, and (d) the order in which the calls were made. The typical number, ports, and order of calls was defined as those occurring most frequently. The model itinerary thus developed does not coincide with each historical itinerary of ships of the predominant type. This is due to the variance in vessel movements over a given trade route.

Typical cargo movements, overall utilization of the vessel, and in-port and at-sea times were developed by selecting a sample from the voyages made by the predominant type ships. Since vessel movements are variable, the selection was made of those voyages which tended to follow the model itinerary in terms of ports of call and their sequence.

Average hours in port and at sea were calculated from the voyages contained within the sample used to develop typical cargo movements and utilization statistics as the elapsed time in port and at sea naturally would be affected by the number of ports, the location of the ports, and the quantity of cargo handled at each port.

In determining the typical ship, its utilization, the voyage pattern, and the cargo movements associated with that ship, the emphasis was on the development of representative rather than average data, so that application of vessel costs to the developed voyage pattern would yield unit cost rates with the broadest possible applicability.

VESSEL OPERATING COSTS

The vessel operating costs compiled for this study are intended to include all of the costs incurred by a steamship company operating a fleet of dry cargo ships in liner service. Accordingly, the cost elements included would be each line item found on a steamship company's annual operating statement except: (1) those not pertinent to shipping operations since they are irrelevant and (2) those pertaining to profits (net income and taxes on income) since these are not cost elements in the strict accounting sense. To facilitate analysis, a standardized classification of accounts was developed. Data were gathered from various sources to compute vessel operating cost levels for the predominant ship types studied. The amounts covered vessel operations during the year 1963. Since 1963 did not include extended strikes or other major interruptions to shipping, the costs developed by Ernst & Ernst do not include the cost effect of such occurrences.

To facilitate the comparison of cost levels between ships and flags of registry, a standardized classification of accounts was drawn. Also, each cost element was converted from the reported basis; i.e., voyage annual amount, to a cost rate per operating day. Daily cost rates were developed for days at sea and days in port since the cost of fuel consumed varied significantly. Also, daily cost rates were developed before and after governmental subsidies to the extent that these subsidies were identifiable. Costs customarily computed as annual

amounts, such as depreciation, were converted to daily average costs based on using 355 operating days per year, allowing 10 days of repair time. Indirect costs, such as general and administrative expense were computed on their percentage relationship to other cost elements. Direct expenses, such as crew wages, were converted to daily rates by dividing reported amounts by the time period during which they were incurred. A figure was developed to translate the daily amounts into cost rates per operating hour. Since the statistical data describing voyage itineraries include hours at each port of call, as well as hours between ports, the hourly cost rates can be extended against these time periods to compute total voyage costs.

PORT COSTS

Port costs were estimated for both the United States and appropriate foreign-flag vessels selected for study at several major ports over each of the trade routes covered in this report. Port costs are those charges assessed against the ship as a result of entry, use of facilities, and clearance at a port. Generally, these costs include charges for use of terminal facilities, such as dockage and wharfage, as well as port service charges, dues and taxes, such as port and harbor dues, pilotage, towage, tug hire, and various other services.

The determination of these costs is somewhat complicated by the number of variables making up the port costs at any particular port. The variety of bases used from port to port, and even within a port, for computing charges, and the various leasing, rental or ownership arrangements of terminal facilities by operators may have a significant bearing on the port costs assessed against a particular company or flag vessel.

CARGO HANDLING COSTS

Cargo handling costs were estimated for selected commodities at major ports over the trade routes studied. The costs associated with handling cargo include charges for stevedore labor and equipment required to load and unload cargo as well as all other expenses directly incident to the handling and carriage of cargo such as checking, tallying, dunnage, barge and crane hire, measuring and weighing cargo, etc.

As in the case of port costs, a great many variables enter into the determination of cargo handling costs assignable to a particular commodity at any one port and on any one voyage. For example, the time of arrival in port together with the scheduled time of departure have an important bearing on the need for overtime and extra labor. The amount and type of cargo being loaded or discharged will have an impact on such important cost factors as dunnage requirements, shifting costs, overtime and extra labor. Also, each operator generally has a separate stevedoring arrangement at ports of call and loading and discharge rates may vary for the same commodity at a given port, depending upon the quantity moved by the operator and the type of stevedoring contract he can negotiate.

The consensus of steamship operators was that flag of registry does not importantly influence commodity cargo handling rates in a given port, giving one operator any inherent advantage over another. Rather the rates have as their basis the natural levels of wage, facility, and equipment costs prevailing at each port. Therefore, Ernst & Ernst's approach was based upon developing a representative effective rate for loading and discharging selected commodities at major ports over the trade routes studied. Thus one rate per commodity per port was used for all calculations of commodity handling cost rates regardless of flag of registry or ship type.

This effective rate was estimated by adding to the straight-time stevedoring loading (or discharge) rate for each commodity a factor computed to include all other cargo handling costs. This factor, which is based on average historical experience, provides for overtime, extra labor, equipment hire, shifting cargo, tallying, cleaning, dunnage, and other services directly related to cargo handling. This factor was estimated from the cargo handling cost experience of steamship companies at major ports being studied. First, the total cost of loading (or discharge) was separated into two categories: (1) the cost for straight-time stevedoring services and (2) all other cargo loading (or discharge) costs. Then, the percent of "other costs" to straight-time stevedoring charges was computed. This percentage represented the overall average experience at each port of the amount of additional cost that was incurred above the basic commodity charges for straight-time stevedoring.

Next, the unit commodity rates were compiled for selected commodities, and these were escalated to an effective rate by adding to them the amount indicated by the average experience of the port. For example, if the commodity rate for loading a particular item at a specific port was \$5 per measurement ton, and the "other costs" averaged 200 percent of straight-time stevedoring services at that port, \$10 (200 percent of \$5) was added to the basic commodity rate giving an effective rate of \$15 per measurement ton. This approach includes the assumption that the average experience for all loading (or discharge) operations can be applied to unit rates for specific commodities. Such an assumption may introduce a margin of error to the extent that some elements of the "other costs" may not apply to a particular commodity, such as equipment rental. However, attempting to associate each of the extra charges to individual commodities would require extensive detailed study, if indeed such a determination is in fact possible at all.

The stevedore commodity rate is theoretically a reflection of labor cost required to load or discharge a weight or measurement ton of the particular commodity. An examination of cargo handling costs other than straight-time stevedoring costs indicates that the preponderance of these elements are labor related. Therefore, developing the factor on the basis used appears to be the best available approach.

Another consideration when examining cargo handling costs is the relationship between cargo weight and cargo volume as these apply to commodity rates. Since stevedore commodity loading and discharge rates, like ocean freight rates, often take into account the weight/space relationship of a commodity, two rates are often quoted by stevedores for their services. One rate is based upon weight (such as per long ton) and another rate is based upon space occupied (such as per measurement on which is the equivalent of 40 cubic feet).

In order to determine the weight/space relationship of a commodity, it is necessary to compute its stowage factor which is the figure which expresses the space in cubic feet occupied by a long ton of commodity packed for shipment. That factor is computed by dividing 2,240 pounds (1 long ton) by the weight in pounds of a cubic foot of the commodity. Accordingly, the rate charged by a stevedore will be based on computing the long tons loaded (or discharged) multiplied by the "weight rate" and the measurement tons loaded (or discharged) by the "measure rate" with the higher of the two rates prevailing. For purposes of this study we have determined whether the weight or measurement rate should apply and then have converted that figure into an amount per measurement ton and an amount per weight ton based on the average stowage factor of the commodity derived from authoritative publications.

ALLOCATION OF VESSEL OPERATING COSTS

Vessel operating costs were developed first as daily cost rates. Then, by extending these rates by the vessel time in port and at sea during a typical voyage, the total voyage expense for vessel operations were computed. Since the voyage itinerary was expressed as time in each port, and time at sea from the prior port, the computation of voyage cost identified the contribution of each segment of the trip to the total cost. This enabled Ernst & Ernst to treat the allocation of vessel operating costs in some detail according to the purpose of the segment of the voyage during which the cost was incurred. The voyage segments were classified into three elements and each was examined separately: (a) vessel cost attributable to transoceanic movement between geographic regions, (b) vessel costs for movement between ports within a geographic region, and (c) vessel costs while in port. To establish consistency of analysis, the voyage segments were classified as transoceanic movement between zones (geographic regions) from the hour of departure from the last port of call within one region until the hour of arrival at the first port of call at another. Movement between ports within a zone includes time at sea between each port within the zone. Port time covers from the time of arrival to time of departure at each port.

TRANSOCEANIC MOVEMENT

The method selected for the allocation of transoceanic voyage costs to the cargo transported is based upon an analysis of the nature of the costs incurred and the manner in which the ocean shipping industry functions. The nature of the transportation industry in general, and in this case, the ocean shipping industry in particular, requires considerable emphasis on the utilization of equipment and

cargo carrying capacity. In many respects a planned ocean voyage can be considered as involving a fixed cost commitment for the duration of the round-trip voyage, with some additional costs which will vary according to the number and location of the ports of call and the types of product transported. The pertinent cost factor is the relationship of the number of units transported to the total round-trip voyage cost of the vessel. Or put another way, capacity utilization over the round-trip voyage is the single most important factor in the determination of unit costs for the trans-ocean movement.

A ship may be 100 percent utilized by carrying as much cargo weight as it can hold on each transocean segment of the voyage, or by having the entire cubic space filled. Since cargo liners generally achieve significantly higher utilization of cubic capacity than weight capacity, the unit of measure to which costs were allocated was selected as the measurement ton (40 cubic feet).

The procedure adopted in this report for the allocation of voyage costs to cargo transported was based upon the following principles:

(a) All commodities transported must bear a prorated share of the vessel's ocean voyage costs.

(b) The cost per unit is best expressed in terms of measurement tons (cubic measurement) except for the costing of specific commodities which, on a long-ton weight basis (2,240 pounds), do not utilize a full measurement ton.

(c) The pertinent ocean voyage cost involved in the problem is the round-trip ocean voyage cost. On this basis the outbound and inbound tonnage would be added together in order to develop the unit costs of the voyage. The alternative to this approach would be to allocate each one-way voyage cost to the tonnage carried one way. Illustrating the inappropriateness of this method, if only one ton were to be transported on one of the legs of the voyage it would necessarily bear the entire cost of that leg of the trip. Since the vessel must make both legs of the trip regardless of imbalance of traffic, the position adopted in this study is that both the inbound and outbound tonnage must share the costs of the round-trip voyage equally.

MOVEMENT WITHIN A REGION

Various methods could be used in costing tonnage moved in and out of a particular area involving more than one port of call. The problem to be resolved in this circumstance is how to associate intraport ocean vessel costs to the tonnage unloaded (and loaded) at each of the ports in a given area. For example, in discharging tonnage at a range of ports in the United States, should the tonnage unloaded at the first port cease to bear any of the additional voyage costs incurred when the vessel proceeds to the second, third, and fourth ports in the area? The tonnage unloaded in port #1 did not bear the full costs of the transocean voyage to the range because tonnage destined for ports Nos. 2, 3, and 4 participated in absorbing the transocean vessel costs. If the tonnage destined for subsequent ports is made to bear the intracoast steaming cost of the vessel to the remaining ports, then naturally the tonnage unloaded in the last port would have incurred a higher unit cost of transportation than the tonnage unloaded in the previous ports in the area. If the sequence of ports were reversed, then port No. 4 would have the lower unit costs and port No. 1 the higher transportation costs. Although the sequence of port calls is not completely arbitrary in the sense that inbound tonnage must be unloaded before sizable quantities of outbound tonnage can be loaded, there would be an inequity in assigning different amounts of the between port steaming costs to tonnage which has shared equally in the cost of the transocean voyage.

Since the tonnage bound for each port within a geographic region shared equally in the cost of the transocean voyage, the procedure adopted in this study prorates the intracoast voyage costs to the entire tonnage carried transocean regardless of the sequence of port calls in the area. This approach was adopted for two primary reasons: If the vessel itinerary did not include one of the ports (port No. 4 for example), it is probable that less tonnage would be carried on an average round-trip voyage and the unit cost of the voyage would be higher for the tonnage inbound and outbound from the other ports. Secondly, if the unit costs were developed on the basis of the typical sequence of port calls, with the last port bearing the higher unit costs, the port-to-port costs thus developed could be altered merely by changing the sequence of port calls.

For these reasons the costing procedures used in this report allocate the intraport voyage costs at either end of the voyage to the total tonnage loaded and unloaded in the ports at each end of the voyage. Accordingly, a cost per

measurement ton of ship space occupied was computed for movement between ports within each zone and is assignable equally to all cargo moved into or out of that zone. The rate was computed by multiplying the vessel operating cost per day at sea by the total time spent steaming between ports within a zone, and then dividing by the measurement tons of ship space occupied, inbound plus outbound, within the zone.

VESSEL COSTS IN PORT

Ideally the cargo handled within each port should bear the expense of vessel operating costs incurred while the ship is there. Further refinement would divide the time for loading from the time for unloading so that a separate rate could be developed. However, insufficient data were available to Ernst & Ernst to permit these refined computations. To do so would require identifying the measurement tons of cargo loaded and unloaded in each port on the typical voyage, the measurement tons of ship space occupied by that cargo, and the proportion of port time assignable to loading and to discharge. However, while the long-tons of cargo loaded and discharged were identified on a port-by-port basis, the measure of cubic space occupied was available only for each inbound and outbound leg of the voyage. No reasonable method was found for relating the overall measurement tons of space utilized to each port. Also, time in port is not differentiated as a space cost rate for time in port was necessary. The method selected was to divide the total cost of vessel operations in all the ports for a zone by the measurement tons of ship space occupied by cargo loaded and discharged within the zone, a technique similar to that for allocating the cost of steaming time between ports within a zone.

ALLOCATION OF PORT COSTS

The costs assignable to the ship by virtue of having called at a port, such as tug hire and dockage, were compiled from available data as average cost per call by ships of the predominant type operating in the services studied. The most desirable method for allocating this cost to commodities handled would be to divide the per call cost by measurement tons loaded and discharged on a typical port call. However, as pointed out in the description of the allocation of in-port vessel operating costs, the volume of measurement tons was not available. Since port charges do vary significantly even among ports within a zone, an allocation technique was used which to some extent preserved these differences, rather than developing an overall average for the zone. First, port costs per call were computed as a ratio of vessel operating costs in port for the average call. The resulting ratio was then applied to the cost per measurement ton occupied for in-port vessel operations which was developed as an average for the zone as a whole. While applying the ratio of port costs to in-port vessel operating costs for a specific port to the unit in-port vessel cost based on the average of all ports in the zone is not precise, it is felt that the resultant figure more accurately reflects the unit cost rate for a specific port than a zonal average.

TOTAL UNIT COST

The total unit cost developed during this study for shipment of a commodity between two given ports became the sum of—

- (1) The commodity loading rate at the port of origin.
- (2) The port of origin measurement ton rate for port charges on the specified ship type.
- (3) The vessel operating measurement ton cost rate for the specified ship type between the port of origin zone and port of destination zone.
- (4) The port of destination measurement ton rate for port charges for the specified ship type.
- (5) The commodity unloading rate at the port of destination.

REPORT FINDINGS

Now that we are familiar with the approach and methodology employed in the study. I would like to turn to some of the findings made by Ernst & Ernst.

VESSEL OPERATING COSTS AND PORT COSTS

Some of the more important observations made from data showing vessel operating and port (i.e., noncargo handling) costs are.—

(1) The U.S.-flag vessel operating costs per measurement ton before subsidy (operating differential subsidy plus cost effect of construction subsidies) range from 53 to 81 percent higher than the same costs after subsidy.

(2) The vessel operating cost unit rates for U.S.-flag operators after subsidy are extremely close to those of foreign-flag competitors.

(3) The port cost per measurement ton varies widely ranging from \$0.15 at one foreign port to \$2.29 at one U.S. port. Part of the variance is due to application of port costs, which are largely unrelated to quantity of cargo loaded or discharged and to a smaller quantity of cargo handled at a particular port on some typical voyages.

(4) Generally, the port costs per measurement ton are significantly lower in foreign ports than in U.S. ports.

SPACE UTILIZATION

Some findings of the Ernst & Ernst report in regard to relatively high levels of space utilization on U.S.-flag vessels are—

(1) While the U.S.-flag vessels have essentially the same unit cost levels under the actual conditions of the typical voyage, they would face a substantial cost disadvantage if the foreign-flag vessels were able to improve space utilization and reduce voyage hours to the levels of U.S.-flag vessels.

(2) These results may also be viewed as an indicator of the extent to which the more efficiently operated steamship companies could expect unit costs to increase should their performance decline to the level of the less efficient steamship companies.

(3) The largest single factor contributing to this cost reduction potential is space utilization. Generally, the U.S.-flag vessel operator's voyages included in the sample demonstrated an ability to attain a fuller load with fewer port calls and less time in port. This voyage time advantage was partially attributable to generally higher vessel speed.

COSTS FOR INDIVIDUAL COMMODITIES

The five cost elements for shipping a commodity between two ports were narrowed to three major elements (1) cargo loading costs, (2) cost of ship space occupied, and (3) cargo unloading cost in the major cost analysis by Ernst & Ernst. While the costs of ship space occupied vary by flag of registry, ship type, trade route, and port, the cargo handling costs were computed at the same rate for all ships, differing only by commodity and port.

The cargo handling costs, loading plus unloading, are a significant factor in the total unit cost of shipping the commodities studied. For example, with canned foods and cotton manufactures, Ernst & Ernst made the following observations:

(1) Cargo handling costs, in other words, loading and unloading, account for 25 to 67 percent of the total unit cost among the items listed, illustrating both the magnitude of these costs and the divergence among commodities as well as the difference in prevailing cost levels among ports.

(2) The cargo handling costs are generally substantially higher at U.S. ports than at foreign ports, ranging from 138 to 1,224 percent higher for loading and from 135 to 1,200 percent higher for unloading among the given examples.

(3) Cargo loading costs generally exceed cargo unloading costs for a particular commodity within a given port, ranging from 14 to 36 percent higher among the given examples. Since overall cargo handling costs are generally lower at foreign ports than at U.S. ports, this disparity between loading versus unloading causes imports generally to have lower total unit costs than exports, ranging from 2 to 15 percent lower among the items shown between any two particular ports.

(Whereupon, at 12:35 p.m., the subcommittee recessed, subject to call of the Chair.)

