

U.S.-Japan Competition and Trade in the Global Semiconductor Industry

Teaching Note

APPLICABILITY OF THE CASES

These cases can be used as teaching materials in courses related to trade and investment, competition and industrial policy, and international political economy. They are especially applicable to second-year graduate masters programs that include international business, public policy studies, commercial diplomacy, and international economics. These cases are well known, having been covered by the international media over a period of many years. Furthermore, many textbooks, trade books, and professional texts have referred to these cases at various periods in their history. The work presented here, however, is the most comprehensive ever published. In addition, a selected bibliography of 15 references is provided and these works are divided up to show those related to the individual cases A, B, and C. The bibliography is part of this teaching note and the instructor may wish to provide it to the class. In addition, a set of questions follows each case; the instructor may consider them to be the minimum required to study the cases.

The cases can be used in the following ways:

1. To illustrate the dynamics of global competition as two major national high-technology industries battle for market share and survival
2. To teach how private firms and their trade organizations, in two different state-market environments, react to trade conflicts
3. To illustrate how private firms and their trade organizations attempt to influence public policy in order to achieve market results To introduce students to the interplay of business-government relations during critical trade conflict periods

4. To explain the dynamics of international negotiations involving several nations' industries
5. To explain how industry-interest groups are often composed of different types of firms and interests, and
6. To explain how a domestic industry interacts with its domestic customers and suppliers during a trade conflict, where each has its own interests in foreign markets

The cases are divided into periods that correspond to the three periods prior to each of the three U.S.-Japan Semiconductor Trade Agreements. Their designations are A, B, and C. The epilogue provides the details surrounding the last agreement in 1997.

The first case (A) should take the longest amount of class time, perhaps two hours, while the remaining cases (B, C, epilogue) are likely to require another two hours in all.

I. CASE DISCUSSION

Case A begins by looking at the trade problems faced by the U.S. semiconductor industry. The focus here is on the leadership of the key merchant firms. This leadership, in the form of the Semiconductor Industry Association (SIA), is the primary focus of all the cases. The core of the SIA, representing the merchant makers, interacts with the following players:

1. The American merchant chip manufacturers that sell to the open market and that make up the greatest number of SIA members
2. The captive chip firms who are also members of SIA but are also part of large integrated electronics firms; these not only supply their internal customers but many do merchant sales and act as purchasers from external suppliers
3. The U.S. government agencies and branches, USTR, DOC
4. The Japanese semiconductor firms and their associations, EIAJ
5. The government of Japan, as depicted by MITI

6. The semiconductor products equipment manufacturers, some American and some Japanese, which serve both the American and Japanese chip makers
7. The semiconductor chip firms of Europe and Korea
8. American customers of both the U.S. and Japanese chip firms (about one-half of this group are related to the computer industry)
9. Japanese customers of both U.S. and Japanese chip makers, which are all part of various Japanese keiretsu that include the Japanese chip firms or divisions

All of the players are represented in the case write-up, but the evidence shown in the exhibits only focuses on a few of these players at a time. The keys to the business-government relationship from a market as well as non-market perspective are described in the text itself. It may be important for the class to do some outside research after the first case is handed out before class discussion. The bibliography pertinent to each case may be helpful to the students.

Case A should be discussed before Case B is distributed; after Case B is discussed, Case C should be distributed; and, finally, the epilogue can be distributed.

The progressive format of the exhibits (expanded after each case) is meant to convey the dynamics of the cases in terms of the market and nonmarket forces being brought to bear. The exhibits also focus on the several parameters that provide key data for discussion. Research prior to the case discussions, with the bibliography as a guide, will provide additional data.

The case discussion and resolution therefore may be based on the case write-up, the exhibits, the bibliographic material and outside research, and the instructor's presentation and guidance.

II. THE TEACHING ASSIGNMENTS

1. The first and simplest approach to teaching this case is to allow open discussion of the questions following each case before handing out and pursuing the next one (i.e., A before B, B before C, etc.) until the epilogue is finally reached. This approach

offers less student interaction than the approach suggested in Section III, 2, but gives the instructor the opportunity to judge student performance.

2. The second approach is to divide the class into a number of groups and assign each group to take the role of one of the players (1 through 9) listed in Section II of this teaching note. Each group should clearly state in an analytical format the key elements of its assigned interest in terms of (a) the position of that player with regard to the conflict; (b) the evidence that supports their position; (c) the charge placed against them, if any; and (d) actions they are willing to take to reach a resolution and a compromise. After this is accomplished, the teams should then be realigned to take only one position, i.e., either the Japanese or U.S. side, by combining all groups of either nation together into a national group for internal discussion.

Thus, one team, say Team J, would have MITI, Japanese chip makers, Japanese customers, and Japanese equipment makers on their team, while Team U would have USTR, American merchants, American captives, American customers, and American equipment makers on their team.

Each team must attempt to reach an agreement that the instructor believes would be equivalent to the first U.S.-Japan Semiconductor Trade Agreement. When the discussion is completed and the trade agreement explained (on the classroom board), Case B should be assigned so the class can read about the actual results that occurred in 1986, and then continue on to the second round of U.S.-Japan negotiations.

III. CASE B

The first U.S.-Japan Semiconductor Trade Agreement has been signed but inaction on the part of Japan in a decision by President Reagan to initiate sanctions.

A general discussion can be elicited by asking these questions:

- Why is there a lack of action on Japan's part?
- What is your opinion of President Reagan's sanctions?

- What alternative actions would the class recommend?
- Should the SIA have taken more direct action in recommending the type and degree of sanctions?
- Are the Japanese taking any political steps to escape from meeting the agreement? If so, what kind of actions?

Finally, the class should be asked how the SIA should approach the second U.S.-Japan Semiconductor Trade Agreement. The original teams that argued the U.S. and Japan positions should reassemble. Again, each side should decide how to position itself for the second agreement.

After the resolution of Case B, the class should be given Case C and its epilogue. After reading these parts, the class will have read the entire set of cases up to and including the final meeting in 1996.

IV. SUMMARY

Summarizing these cases should be left to the instructor. This summary should consider the following major points:

- A. The U.S. semiconductor industry was successful in the long run because the foreign share of market in Japan was much higher by 1996, while the share of the DRAM market held by Japanese firms declined due to competition from other firms (albeit not necessarily U.S. merchants but U.S. captives, Koreans, Europeans, as well as the U.S. firms Texas Instruments and Micron Technology).
- B. The SIA was successful in several ways:
 1. The U.S. players were able to reach unanimity among all industry segments.
 2. The U.S. executives were able to mount a successful lobbying campaign in Washington.

3. The U.S. chip makers were able to develop an alliance with members of Congress.
 4. The U.S. chip makers were able to restructure their product lines in order to remain successful in the marketplace.
 5. The legal counsel by Alan Wolff and others was especially expert in this international trade matter.
 6. The ability of the SIA to convince U.S. government agencies of the merits of their case against Japan.
 7. SIA's ability to obtain broad U.S. support (from government, and related industries) for broad trade measures that could be successfully implemented.
- C. The Japanese industry lost its momentum and now, in 1997, is attempting to regain it by extensive industry/government cooperation in applied research and in establishment of businesses in emerging countries such as China.
- D. Other events favorable to the U.S. side included the following:
1. Entry into the DRAM market by Samsung, Hyundai, and other Korean and Taiwanese firms
 2. Lack of any serious condemnation of U.S. actions by international trade organizations
 3. Currency exchange of the yen/dollar rate moving in a favorable direction for U.S. firms
 4. Microprocessor development and manufacturing by a highly successful American firm, Intel
 5. U.S. industry change in product direction toward higher value-added products such as digital signal processors.

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Related

Case	Titles
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1[1] *The Wall Street Journal*, June 6, 1991

2[2] *Boston Globe*, February 10, 1991.

3[3] *Ibid.*

4[4] *Inside U.S. Trade*, June 7, 1996, p. 24.
