A NEW BALANCE OF ECONOMICS AND NATIONAL SECURITY: INTERPRETING THE U.S.-JAPAN RELATIONSHIP AND ASIAN ECONOMIC BLOCK FROM A TECHNOLOGY PERSPECTIVE

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One of the important effects brought by the end of the Cold War has been a changed balance between economic and national security issues. In countries such as the United States and Russia, economic factors are playing an increasingly important role in policy considerations since the end of the Cold War. However, the end of the Cold War has had a slightly different impact on Asian countries in terms of the balance between economics and national security.

The purpose of this paper is to analyze this changing relationship between economic and national security issues from a technology perspective and to shed new light on the U.S-Japan relationship and the role of these two countries in the Asian economic block. Special attention has been paid to the interaction between economic and national security factors and to implications regarding the proliferation of weapons of mass destructions.

1. Changes in the U.S.-Japan Technology Relationship

United States

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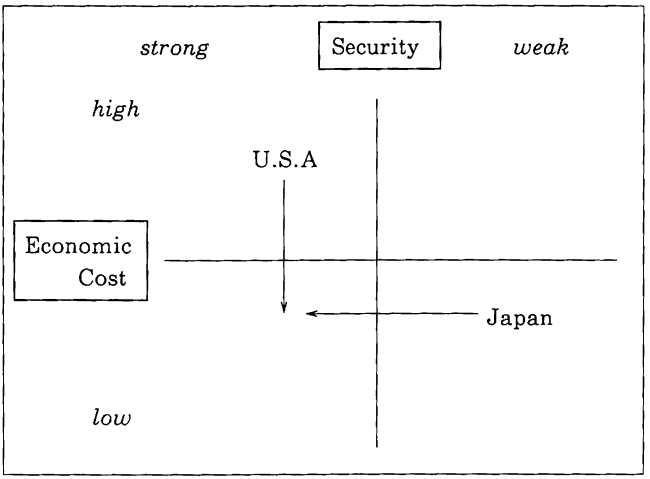
Figure 1 gives a simple framework to understand the relationship between economic and national security factors from a technology perspective .[1] The vertical axis shows the level of national security related to technology, while the horizontal axis shows the economic opportunity cost incurred by the commercial sector by strengthening the national security level, for instance, by shifting resources from commercial to military technology development. Therefore, this figure shows the combination of the level of national security and the economic cost incurred by the level of security from a technology viewpoint.

First, let us look at the U.S. situation using this figure. After World War II, it was the U.S.'s first priority in diplomatic policy to strengthen its national security position vis-a-vis the Soviet Union, and the United States put considerable resources into establishing and maintaining the superior position, In the technology area, the U.S. government spent a large amount of its R&D funds for military purposes. On average, for

Figure 1 Relationship between Level of National Security and its Economic Cost in terms of Technology



example, 54% of the government's R&D funds were earmarked for military- and space-related purposes during the period from 1955 to 1965.[2] However, this was a costly policy from an economic perspective. If a larger budget had been allocated for commercial purposes, development in that sector would have been more rapid. This is because it is more efficient to spend R&D dollars directly in the commercial sector rather than to wait for spin-off technology from the military. Therefore, the United States started in the upper left of Figure 1, a combination of strong security and high economic cost.

This started to change in the 1970s, as the relative economic position of the United States began to decline. The trend becomes even clearer as the twin deficits and industry competitiveness became particularly acute problems for the United States in the 1980s and the collapse of the Soviet Union reduced its threat to the United States. These changes made it difficult to continue to incur heavy economic costs for national security purposes. In other words, although security issues were important in U.S. policy making, economic issues became a significant constraint. Reflecting this change, for instance, U.S. government funding for technological development is shifting toward the commercial sector and increasingly more emphasis is being put on the economic efficiency of R&D. Under this system, the military sector is supposed to obtain fruits of R&D done in the commercial sector. Therefore, in Figure 1, the United States can be thought to have moved to the lower left, requiring it to maintain a strong security position but balancing the economic costs attached to it.

Japan

Technological development in Japan started differently. There, the main purpose of developing technology was to gain commercial competitiveness by catching up with the United States, i.e., it was purely

economic in nature. Therefore, economic efficiency was the most important consideration in developing technology. Japan did not need to reduce economic efficiency by shifting precious resources to military ends, and it did not show a strong interest in the military implications of technology. This was probably a rational choice for Japan because its security position was largely assured by its security treaty with the United States. Thus, Japan's development of technology started in the lower-right-hand quadrant of Figure 1, a combination of a weak security position and low economic cost.

Japan's position also started to change in the late 1970s. The security aspects of Japanese technology became more important with its rapid advance to world level. This advance, for instance, is reflected in the fact that U.S. defense firms started to use Japanese machine tools for manufacturing weapons and U.S. high-tech weapons started to incorporate Japanese-made electronic components. This did not mean, however, that Japan was trying to gain world leadership by strengthening its military power using its technological abilities. However, although economic consideration is still a priority factor in Japanese technological development, Japan was pushed to the position that it had to think about the security dimension of its technology. In Figure 1, then, Japan moved from the lower right to the lower left quadrant, maintaining an emphasis on economic efficiency while recognizing the security aspects of technology and using it properly for security ends.

Implications from the U.S.-Japan Technology Relationship

Both countries, thus, have moved into the lower left quadrant of Figure 1, where they have similar interests in a strong security position with low economic costs. Since the United States and Japan are important allies, cooperation in the military technology field should be mutually

beneficial and serve both countries' interests. However, this kind of cooperation, for instance, joint R&D utilizing the technological abilities of both countries, has not advanced smoothly. One important reason for this is that neither country fully realizes its current technological position in relation to national security and economic costs, and they sometimes try to behave as if they were in their original position.

The United States was originally in an ideal position where it could strengthen its security by obtaining all the necessary technology domestically. Although it is now prohibitively expensive to return to that original position due to such factors as the relative decline of U.S. technological strength, the increasing Japaneses and European technological capabilities, and internationalization of manufacturing facilities, techno-nationalistic arguments, that urge avoidance of foreign dependency, still appear from time to time. This tendency is augmented by the U.S. cultural inclination of avoiding dependence on foreign countries.

For its part, Japan behaves like it is still in the lower-right hand quadrant of Figure 1, where it can ignore the security aspects of technology. Although technological advancement has started to attach security implications to technology, Japan still tends to ignore this and to look only at the economic implications. A typical attitude can be seen in the reaction of Japanese electronics manufacturers whose products have been used in U.S. high-tech weapons. These Japanese manufacturers try to avoid discussing the issue openly because they are afraid of being criticized by the media or left-wing politicians on the grounds that the components they produce are used in weapons. Since this kind of attitude toward technology can fit well with the pacifist sentiment now widespread in Japan, the tendency to look only at the commercial side of it is augmented.

Therefore, one of the major reasons that cooperation between the

United States and Japan in military technology has not advanced amoothly is the difference in the backgrounds surrounding the early stages of technological development in these two countries coupled with the different cultural perceptions toward military technology.

Another factor is the U.S. suspicion about the direction of Japanese technological development. During the Cold War, the military technology policies of the United States and Japan fitted together well; the United States generously transferred its technology to Japan for the purpose of deterring the Soviet Union in the Far East, while Japan was totally dependent on the United States for military technology and acted within the U.S. security policy framework, thus allowing Japan to concentrate on the commercial development of technology.

Unfortunately, this system has already collapsed. The end of the Cold War has eliminated the need for the United States to provide advanced military technology to the Japanese defense industry. Moreover, since Japan has emerged as a strong competitor to the U.S. high-tech industry, the United States is more conscious that military technology transfer from the United States may enhance Japan's technological ability in the commercial sector. The United States has also started to worry about Japanese strength in commercial technology that could lead to the indigenous development of the Japanese military industry.

Therefore, the United States and Japan need to establish a new system to deal with military technology replacing the old Cold War system, but the new system has not been firmly established as yet. This transitional environment is making the U.S.-Japan military technology relationship unstable. Arguments such that Japan is leaving the U.S. policy framework and heading toward indigenous development of military technology have started appearing in the United States.[3] And there are arguments that insist Japan will go nuclear in the future. In terms of Figure 1, they argue

that Japan is moving toward the upper left rather than the lower left quadrant. This kind of argument should be understood considering the changing nature of the U.S.-Japan technology relationship in terms of economics and national security.

2. The Asian Economic Block: Economics and National Security

It is urgent to establish a new military technology relationship between the United States and Japan that fits the post-Cold War environment surrounding the two countries. Here, I will approach the issue by putting the U.S.-Japan technology relationship in an Asian setting.

Characteristics of the Asian Economic Block from a Technology Perspective

The Asian economies have shown a rapid pace of economic growth in the last twenty years; the NIES started to accelerate the pace of their economic growth in the 1970s followed by the ASEAN countries which showed an impressive growth record in the 1980s. In addition, waves of economic growth keep spreading to other regions in Asia. Since the rapid pace of economic growth is expected to continue in the near future, Asia has become the area where economies are growing at the fastest rate in the world.

There is no doubt that technology has played an important part in pushing up economic growth rates. Developed countries, especially Japan and the United States, made a massive direct investment in NIES and ASEAN countries and various technologies have been transferred through that direct investment. An important point to realize is that the Asian technology base that developed as a result of such technology transfer has different characteristics from the one developed in the United States or

European countries.

Technologies can be conceptually divided into three groups based on end use. The first one is military-specific technology that can only be used for military purposes. At the other end, there is commercial-specific technology that can only be used for commercial purposes. And in between, there is so-called dual-use technology that can be used both for military and commercial purposes. A typical example in this group is semiconductors that are used as basic components for various consumer electronics products as well as for high-tech weapons.

In Asian countries that have achieved rapid economic growth (NIES, ASEAN countries and including Japan), their technological development has been biased toward the commercial side; thus, even though countries such as Japan and South Korea have developed world-leading products, they are confined to either commercial-specific or dual-use technologies. In other words, these Asian countries are still dependent on the United States and European countries for military-specific technology. This is a very important characteristic of Asian technological development, and we need to explore the implications of it in order to understand the interaction of economic and national security factors in Asia.

Comparison of EAEC, NAFTA, and EU

The idea of forming an economic block in Asia has been much discussed and different proposals have been advanced. APEC is the most dominant form of economic block at present, and it includes such countries as the United States, Australia and New Zealand as well as countries in Asia. Another idea, mainly pushed by the Malaysian prime minister, Mahathir, is EAEC(East Asia Economic Caucus) to only include countries in Asia. Here, for intellectual curiosity, let us compare this EAEC with NAFTA and the EU, economic blocks in North America and

Europe, from the perspective of defense technology base.

In the case of NAFTA, the U. S. and Canadian defense technology base is largely integrated, and the Canadian defense technology base is dependent on the United States to a large degree. For instance, the United States accounted for 85% of Canadian defense imports (1989) and more than 50% of Canadian defense firms are in U.S. hands.[4] U.S. defense companies have also been establishing manufacturing bases in Mexico due to the cheaper labor costs there and this trend is expected to accelerate due to the formation of NAFTA. Therefore, it could be said that the NAFTA defense technology base is largely integrated with the United States dominating the relationship. And this tendency will be augmented, especially at the defense sub-system and component levels, by the formation of NAFTA promoting the free flow of goods and services within this economic block.

In the case of the EU, various collaborative European R&D efforts such as EUREKA and ESPRIT have been done in the dual-use technology area. The same trend can be found in more military-oriented projects. For instance, it is the clear perception of defense companies in Western Europe that all future aircraft development should be collaborative within Europe. In addition, due to defense budget cuts, European defense companies are downsizing and consolidating around giant European defense companies, such as General Electric (GEC) in Britain, Deutsche Aerospace (DASA) in Germany, and Thomson-CSF in France.[5] Since Maastricht Treaty includes a clause to integrate the national security policy of Europe, this trend of integration of the European defense technology base is expected to accelerate in the future.

Compared with NAFTA and the EU, one distinct characteristic of EAEC is its lack of an indigenous defense technology base. As was mentioned earlier, the technologies in Asian countries that have achieved

rapid economic growth developed toward commercial uses, and these countries are still dependent on the United States and Europe for military-specific technology. Although this characteristic is rarely mentioned in the discussion of formation of an Asian economic block, it has important implications once we start looking at the national security side of the economic block.

Relation between Economics and National Security in Asian Economic Block

In Asia, the interdependence of countries has been advancing in the economic sector by the expansion of trading relationship among countries, while any multilateral security dialogue has lagged behind. Lack of a security dialogue, however, does not mean that there is no security threat in the region. Concerns include the expanding military power of China, and North Korea's nuclear development program; in addition, there is the possibility that some of the Asian countries that have obtained resources through economic growth might start to develop indigenous military capabilities. The threat would be serious if any Asian country starts to develop weapons of mass destruction. This is one potential destabiliging factor in the Asian Security environment since none of the Asian countries in NIES and ASEAN have a solid indigenous military technology base. If one country advanced toward military technology development ignoring the economic costs attached to it (In Figure 1, toward the upper-left quadrant), this would stimulate surrounding countries and cause a spiral of military technology development. If this kind of military technology competition should emerge, it would impede the healthy economic growth of the region by diverting precious resources to the military sector.

The above is a distinct possibility in the Asian block. In NAFTA and the EU, the same situation would be unlikely to occur since these blocks

already have a solid military technology base and are preoccupied by downsizing, rather than expanding, that sector. The Asian block is the only one of the three blocks that lacks an indigenous military technology base and is in a situation such that it could shift resources to military technology development if the security environment were to worsen.

Therefore, it is desirable to start a security dialogue in order to avoid a vicious spiral of military technology development. An economic block could provide a proper stage for this kind of security dialogue because the economic factor is the one that is breaking down the borders of countries in Asia. Therefore, a multilateral security dialogue could start taking advantage of this economic factor.

The purpose of forming an economic block is to promote the economic growth of the region, and therefore, it is necessary to talk about establishing an economic infrastructure such as a telecommunication network and transportation system among member countries. Dialogue on the security issue has the same implications as the above economic infrastructure, that is, establishing a security framework in Asia and reducing security threats in the region could serve as an infrastructure for economic growth. On the other hand, if a vicious spiral of military technology development were to occur, this would surely impede the healthy economic growth of the region.

U.S. Role

It is in the interest of Asian countries to establish a security infrastructure for economic growth. It is also in the interest of the United States. The importance of Asian countries for the United States has been steadily increasing as it recognizes Asia as an area of rapid economic growth and tries to participate in that growth. The value of U.S. exports to Asian countries (including Japan) already exceed those to European

countries; therefore, Asia is becoming an important market for U.S. goods and services as well as providing a manufacturing base for U.S. companies.

The United States has traditionally played an important role in Asian security. The main purpose for involving itself in Asian security was to deter the Soviet Union on the Asian front during the Cold War. However, even since the end of the Cold War, the United States has continued its security commitment in Asia, adding economic factors to the reasoning for its involvement, that is , to protect U.S. economic interests in Asia. This is a welcome commitment for Asian countries since the U.S. involvement in Asia has been a stabilizing factor in its security environment, and Asian countries have the same economic incentives to maintain the security of the region. Therefore it is desirable to include the United States in discussions of an economic block in Asia.

U.S. participation in the Asian economic block is also important from purely economic considerations. As far as economic blocks function as a system to reduce trade barriers, forming economic blocks is to be welcomed. However, there is a possibility of economic blocks excluding non-member countries and leading to a division of world trading areas into regional blocks, and thus amplifying confrontational aspects of international trade.

If the United States that is the dominating member of NAFTA, participates in the Asian economic block, it could play a role in bridging two economic blocks, thus reducing pressures for regional protectionism. Besides the question of how the EU would perceive this kind of U.S move, it is in both the Asian and the U.S. interest to avoid the Asian Pacific economy being divided into two regional blocks.

Japan's Role

It is also important for Japanese economic interests to maintain a stable security environment in Asia. Japanese companies have been making massive direct investments in NIES and ASEAN countries, and this trend is expected to continue due to the high profitability of Asian investment and the appreciation of the yen. In addition, the value of exports to these countries is steadily increasing, making Asia an important market for Japanese goods and services.

Although involvement with security issues in Asia is important, Japan has been reluctant to do so actively. This is because memories of World War II still exist in many Asian countries and if Japan becomes too active in playing a security role in Asia, some of the countries would show an uneasiness about Japan's intentions.

However, Japan is increasingly expected to play a larger role in security as well as economic issues in Asia. One way to approach this problem from Japan's perspective is to participate in Asian security issues in cooperation with the United States. By taking a cooperative approach with the United States, Japan could play a role in Asian security without undue apprehension from Asian countries.

Cooperation in Nonproliferation of Weapons of Mass Destruction

One security area in which Japan and the United States could cooperate is the nonproliferation of weapons of mass destruction. As was discussed earlier, this is one of the most important elements in maintaining a stable security environment in Asia from a technological standpoint.

Efforts to set and apply a nonproliferation regime in Asia make sense from the U.S. standpoint as well. As was discussed in section 1, the United States has become sensitive about the economic opportunity costs of maintaining security. This is a kind of security endeavor in which the United States could obtain an economic pay-off, that is , if Asian security

is maintained and Asian countries continue their rapid pace of economic growth, the United States could reap benefits in participating in this growth. Therefore, nonproliferation is a kind of activity that could fit well with the new economic security environment of the United States.

The same could be said about Japan. It is necessary for Japan to realize the security aspect of technology, as was discussed above. To engage in nonproliferation in Asia would provide an ideal opportunity in this direction. This is a kind of effort that deals with the security side of technology. In addition this is a peace-making activity that could fit well with the pacifist sentiment of Japan. Furthermore, this is an area where Japan has accumulated much experience, especially since the Toshiba Machinery incident.

It is a good sign that the ASEAN Regional Forum was created in 1993 and that a dialoque regarding security issues has started. It is desirable that the topic of the nonproliferation of weapons be included in the dialoque and that the United States and Japan actively participate in it. Through such dialogue it is to be hoped that a system can be established to prevent the proliferation of weapons of mass destruction and the shifting of too many resources to indigenous military technology development, impeding the dynamic economic growth of the region.

Notes

(1) This framework is developed in Yuzo Murayama, "High-Tech Weapons, Dual-Use Technology and Strategic Alliance," MIT Japan Program Working Paper, 1992.

(2) U.S. Department of Commerce, *Statistical Abstract of the United States* (Washington, D.C.: Government Printing Office)

(3) For instance, see John Zysman and Others, *The Highest Stakes* (New York: Oxford University Press, 1992)

(4) Office of Technology Assessment, *Redesigning Defense* (Washington, D.C.: Government Printing Office, 1991), Appendix A.

(5) Bernard Udis, "Adjustment to Reduced Domestic Defense Spending in Western Europe," in Ethan B. Kapstein ed., *Downsizing Defense* (Washington, D.C.: Congressional Quarterly Inc., 1993), p. 146.