Chapter 2

FOREIGN DIRECT INVESTMENT IN AN ERA OF INCREASED THREATS TO CRITICAL INFRASTRUCTURES

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Abstract The need to maintain national security while deriving the benefits of global economic liberalization presents a significant challenge for governments attempting to privatize critical infrastructure assets. In the post September 11, 2001 world, the notion that foreign direct investment positively contributes to an economy is being tempered by the realization that it can pose a threat to national security. This paper discusses the principal issues that governments must consider when authorizing foreign investment in critical infrastructures. The policies of the United States and Israel are compared to focus and clarify the challenges associated with using a national security rationale to constrain foreign investment.

Keywords: Foreign direct investment, critical infrastructures, United States, Israel

1. Introduction

An important issue in international trade and investment is the control and ownership of critical infrastructure assets by foreign corporations and governments. Although foreign control and ownership may be a viable economic strategy, they can directly jeopardize national security.

Critical infrastructures rely extensively on information and communications technologies that are susceptible to cyber threats. At the same time, critical infrastructure assets are undergoing privatization and deregulation processes that present attractive opportunities for foreign investors.

The conflict between economics and security interests has intensified primarily because of two recent global developments. The first is global economic liberalization and integration. The second is the change in the nature of the global security environment. Both these aspects are evident in the 2006 Dubai

Ports World controversy, which demonstrated how tension is exacerbated when the security of critical infrastructures is involved.

This paper discusses the challenges that governments face concerning foreign direct investment in critical infrastructures. On the one hand, governments seek to increase foreign investment and endorse free trade to promote economic growth and prosperity. On the other hand, they must protect their citizens from threats to critical infrastructure assets that underlie national economies. This conflict, which is influenced by competing political and ideological perspectives, can lead to the adoption of policies that upset the delicate balance required to maintain the benefits of open investment and a secure homeland. The policies of the United States and Israel are compared to illustrate the challenges associated with using a national security rationale to constrain foreign investment.

2. Changing National Security Threats

Critical infrastructure protection is a concept *du jour* in many developed countries. Faced with the inherent vulnerabilities of critical infrastructures to physical and cyber attacks, governments around the world have become very preoccupied with their state of security.

The United States Critical Infrastructure Protection Act of 2001 defines critical infrastructures as "those systems and assets, whether physical or virtual, so vital to the U.S. that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters" [14]. The U.S. has identified eighteen critical infrastructure sectors: agriculture and food; defense industrial base; energy; healthcare and public health; banking and finance; water; chemicals; commercial facilities; critical manufacturing; dams; emergency services; nuclear reactors; information technology; communications; postal and shipping; transportation; government facilities; and national monuments and icons.

Nation states and terrorist organizations pose viable physical and cyber threats to critical infrastructure assets; however, the cyber threat has grown in recent years. The heavy reliance on information and communications technologies by critical infrastructures creates new vulnerabilities that can be exploited by "information warfare." Information warfare is considered to be asymmetric in nature because it enables a weaker adversary to counterbalance the military and strategic superiority of a stronger power at relatively low cost. The potential damage from a cyber attack is aggravated by the interdependencies existing between critical infrastructures.

Consider, for example, a scenario where Iran fears that the United States might attack its nuclear facilities. Recognizing that it may not be able to withstand a full-scale American military assault, Iran decides to initiate a series of asymmetric attacks against the United States intended to diminish America's strategic advantages in the conventional military sphere. These attacks combine physical attacks against American facilities around the world (e.g., embassies and military bases) with cyber attacks on American critical infrastructure as-

sets (e.g., power grids, telecommunications networks, oil and gas facilities, and pipelines). The physical attacks result in 500 American casualties. However, the cyber attacks produce blackouts in the Northeastern United States, which adversely affect telecommunications services, energy production, air and land transportation, banking and financial services, emergency services, etc. The cyber attacks bring major industries to a grinding halt and cause enormous economic losses. At the same time, the Iranian military, exploiting the havoc and panic in America, launches a pre-emptive attack against U.S. forces in the Persian Gulf. By combining physical and cyber attacks, Iran may, in fact, be able to inflict significant damage to vastly superior American military forces in the Gulf.

This scenario illustrates how cyber attacks on critical infrastructure assets can be used as part of a military campaign. However, information warfare may be used independently of military action. This was demonstrated by the denial-of-service attacks on Estonia in 2007, which disabled the websites of government agencies, financial institutions and media outlets for several days [9, 12]. While no casualties occurred as a result of these attacks, the damage to the Estonian economy was significant.

3. Foreign Direct Investment

Since the late 1970s, governments have increasingly adopted policies that support global economic liberalization and integration. For example, the Washington Consensus prescribes a set of policies that encourage market liberalization, privatization and deregulation [17]. As a result, essential products and services that were traditionally produced or provided by the state are being produced or provided by private actors. In addition, the adoption of the Washington Consensus has resulted in the removal of barriers to trade and foreign ownership. These factors, no doubt, contribute to the rising presence of foreign companies, including multi-national enterprises, in domestic economies.

Not surprisingly, the United States is both the world's largest foreign direct investor and the world's largest recipient of foreign direct investment. As such, America rigorously promotes policies that enhance free trade and reduce restrictions and barriers on foreign direct investment. Figure 1 shows recent trends in American foreign direct investment, both as a recipient and as an investor.

Foreign direct investment is considered to be a necessary element in the economic policy of a developed country. Graham and Marchick [6] identify several positive effects of foreign direct investment on the American economy. First, because American savings are insufficient to finance domestic investment, the United States depends heavily on the flow of money from foreign investors. Second, foreign investments create more jobs and these jobs often pay higher salaries than jobs in American-based firms. Third, foreign companies tend to invest in research and development and, in some cases, they invest more than their American counterparts. Fourth, foreign investment positively affects

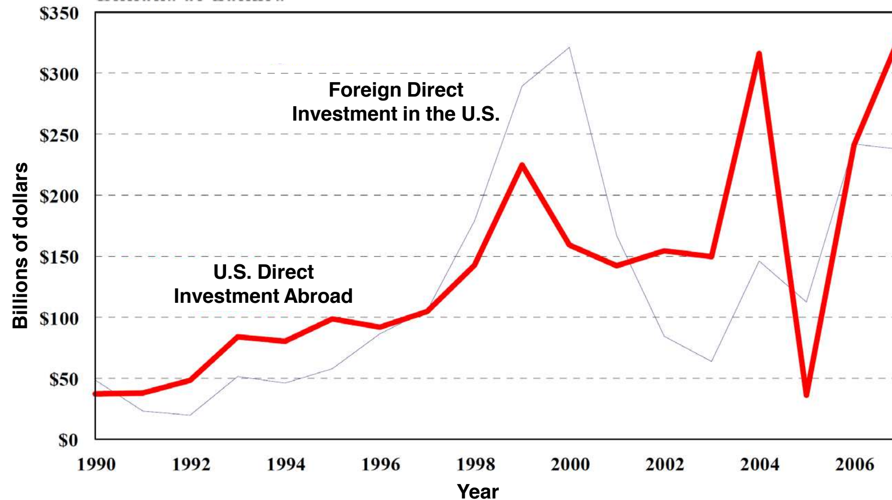

Figure 1. Foreign direct investment in the United States [8].

economic growth. Finally, foreign investment leads to higher productivity and improved product quality.

4. Comparative Analysis

With the seemingly opposing goals of economics and security, the protection of critical infrastructure assets poses a unique challenge. Countries that follow free market principles tend to privatize and deregulate these infrastructures, possibly opening the door to foreign participation. Meanwhile, critical infrastructure assets have become viable targets for asymmetric attacks by adversaries [1].

A decision to privatize, deregulate or allow foreign entities to control critical infrastructure assets has major national security implications. This presents a formidable challenge for countries that place national security at the forefront of their public policy. Liberal policies may well place critical infrastructure assets under foreign control or ownership, potentially providing foreign entities with direct access to the assets that can be exploited in times of conflict.

Gordon and Dion [5] describe restrictions that nation states can place to control the access of foreign entities to infrastructure sectors. These restrictions include blanket limitations (e.g., banning foreign entities from reaching a threshold of ownership and control); sector-specific licensing provisions (e.g., licenses or contractual arrangements between the government and the private entities); and trans-sectoral measures (e.g., investment approval procedures such as those adopted by the Committee on Foreign Investment in the United States).

The United States and Israel provide excellent case studies for a comparative analysis. Both the United States and Israel share a perceived high threat,

resulting in an increased focus on national and homeland security. Both countries have emphasized the threats to critical infrastructures in their national security policies, and this has had an effect on their policies towards foreign ownership of assets in key sectors. In addition, both economies rely on foreign direct investment.

The United States and Israel, however, differ in three main aspects. First, the United States is a developed country; Israel is considered an emerging market that is still undergoing decentralization and privatization processes [11]. Second, the U.S. has a large market economy while Israel has a small market economy [4]. Third, the United States relies primarily on the private sector for critical infrastructure protection. Israel, on the other hand, has adopted a state-centric approach that relies on the government security apparatuses for critical infrastructure protection.

4.1 United States

The United States is cognizant of the adverse national security implications of foreign investment in certain industries and sectors. U.S. foreign investment was initially governed by the Exon-Florio Amendment [13]; currently, however, it is governed by the Foreign Investment and National Security Act of 2007 (FINSA) [15]. The act requires a review by the Committee on Foreign Investment in the United States (CFIUS) to determine if foreign investment proposals threaten national security. CFIUS is chaired by the Department of the Treasury and staffed by representatives from various departments, including the Departments of Defense and Homeland Security. If a 30-day review determines that the transaction indeed poses a potential risk to national security, a 45-day investigation is conducted, upon which CFIUS either specifies the terms for mitigation or prohibits the transaction.

Traditionally, the United States has welcomed foreign investment as part of its open market economic ideology and CFIUS has rarely restricted foreign direct investment. However, this policy shifted following the terrorist attacks of September 11, 2001. In 2003, President Bush added the Department of Homeland Security to CFIUS and provided avenues for other security organizations to submit opinions regarding transactions. The changes have created a balance of power that favors agencies that prioritize security over economic considerations [6].

In 2006, a proposed foreign investment transaction created a major controversy that resulted in greater scrutiny of foreign investments. Towards the end of 2005, Dubai Ports World (a UAE-government-owned company) entered into negotiations for the purchase of the U.K.-based Peninsular and Oriental Steam Navigation Company (P&O) – one of the largest operators of ports worldwide. At the time, P&O operated six major American ports – New York, Philadelphia, Miami, Baltimore, New Jersey and New Orleans.

Dubai Ports World notified CFIUS of the transaction and CFIUS concluded that the transaction would not threaten national security. However, members of the U.S. Congress questioned the transaction and the process that led

Table 1. Trends in the CFIUS process (2005–2008).

Year	**Notices (N)**	**Notices Withdrawn**	**Invstgns. (I)**	**Notices Withdrawn**	**Presidential Decisions**
2005	55	1	1	1	0
2006	111	14	7	5	2
2007	138	10	6	5	0
2008	155	19	23	5	0
Total	459	44	37	16	2

CFIUS to its conclusion. Several bills were introduced in Congress to amend the CFIUS legislation and require a process with more emphasis on national security. The proposed changes included moving the chairmanship of CFIUS from the Department of Treasury to the Department of Homeland Security or the Department of Defense, and requiring majority American ownership of critical infrastructure assets. Ultimately, the public controversy led Dubai Ports World to sell the U.S. operations of P&O to an American company.

The Dubai Ports World affair was the major driver for enacting FINSA as a reform to the Exon-Florio Amendment. FINSA emphasizes security at the expense of economic interests (albeit not explicitly). It requires the consideration of critical infrastructure protection and homeland security issues in the CFIUS review process. Also, it requires CFIUS to conduct investigations when foreign investment transactions are initiated by foreign government owned or controlled entities. Previously, the burden of proof was on CFIUS to show that a transaction was a threat to national security. Now, the burden is on the investing entity to demonstrate that the transaction does not pose a national security threat.

An executive order by President Bush in January 2008 [2] and new regulations issued by the Department of Treasury in November 2008 [16] followed the enactment of FINSA. The executive order gave individual members of CFIUS the ability to initiate an inquiry if a transaction is deemed to have national security implications. The new regulations provide CFIUS with stronger enforcement mechanisms (e.g., strict penalties) on parties who fail to act in accordance with FINSA.

As mentioned above, the U.S. has identified eighteen industrial sectors of the economy as critical infrastructures. One impact of this categorization is that the majority of foreign direct investment transactions are required to adhere to reviews by CFIUS. While this does not imply that CFIUS would review and/or investigate every transaction, certain administrative burdens are levied. The potential increase in time and costs may lead to reluctance on the part of foreign entities to invest in U.S. critical infrastructure assets.

Table 1 provides preliminary data relating to the changes enacted in the CFIUS process [3]. Upward trends are evident in the numbers of notices submitted to CFIUS, notices withdrawn during CFIUS review and investigations

Table 2. Investigations following CFIUS reviews.

Year	Notices (N)	Invstgns. (I)	I/N Ratio	Difference in Invstgns. Successive Years
2005	55	1	1.82%	–
2006	111	7	6.31%	600.00%
2007	138	6	4.35%	–14.29%
2008	155	23	14.84%	283.33%
Total	459	37	8.06%	–

initiated by CFIUS following review. Also, the numbers have grown significantly following the Dubai World Ports controversy in early 2006. This clearly demonstrates the increased consideration of national security implications with regard to foreign direct investment in the United States.

The fact that notices were withdrawn during the CFIUS review process does not imply that the parties abandoned the transactions. Instead, the parties likely resubmitted the notices to CFIUS after making changes to reduce the likelihood of an investigation.

Interestingly, the number of presidential decisions (i.e., complete denial of transactions) has remained low. This could mean that, despite the heightened scrutiny, the basic preference for a free market approach persists. Nevertheless, it is clear that the burden (and associated costs) of proving that a transaction may threaten American national security has increased.

Perhaps the most notable change is the steep increase in the number of investigations initiated by CFIUS following a review of notices. Table 2 shows data related to investigations following CFIUS reviews. It is reasonable to conclude that the scrutiny of foreign investment transactions is becoming more strict. While foreign investment still flows into the United States from around the world, the increased emphasis on national security may negatively influence the willingness of foreign entities to direct their investments to the United States in the long term.

4.2 Israel

Israel is often considered to be a developed country, but it is actually an emerging market, which is still undergoing decentralization, deregulation and privatization processes. As such, Israel is highly dependent on foreign investment.

Since the 1980s, Israel has followed the Washington Consensus ideals. Foreign direct investment is encouraged by providing incentives to foreign investors (e.g., tax exemptions and subsidies), reducing trade barriers and eliminating the central bank's intervention in foreign currencies.

The Israeli economy has historically been controlled by the central government. However, in recent years, the government has begun to privatize some

critical infrastructure assets. These include Bezeq (a telecommunications company); Bank of Israel; Oil Refineries Limited; Paz Ashdod Refinery; Israel Electricity Corporation; Eilat-Ashkelon Pipeline Company; Israel Airports Authority; and Tel Aviv Stock Exchange. The specific sectors that are considered to be critical infrastructures are still evolving. It is likely that a list similar to that for the United States will eventually emerge.

The Israeli government limits foreign ownership through a series of laws, government decrees and executive orders. In certain cases, foreign investment in critical infrastructures is banned either wholly or partially. In other cases, foreign investment is implicitly banned by requiring that the directors and key executives of private sector entities pass security screenings. In essence, Israeli citizenship is required, leading to a *de facto* limitation on the degree of control by foreign entities.

Foreign entities wishing to invest in critical infrastructure assets in Israel must apply for permission from the Ministry of Finance and from the Israeli security community. The nature and substance of the deliberations are shrouded in secrecy and the criteria used to determine whether or not a foreign investor poses a national security risk are not publicly known. The procedure clearly lacks transparency and, consequently, accountability; not surprisingly, it is very difficult for a foreign investor to obtain approval.

The case of Bezeq, an Israeli telecommunications company, illustrates the limitations on foreign ownership. Bezeq is designated as a critical infrastructure asset under the Regulation of Security in Public Bodies Law of 1998. It underwent privatization during the 1990s, but the government still owns approximately 16% of the company.

Bezeq is heavily regulated by the Ministry of Communications under the Regulation of Electronic Communications Services in Israel [7]. To limit the privatization of Bezeq, the Ministry of Communications issued a telecommunications order [10] that restricts the ability of foreign entities from controlling 5% or more of the company. Furthermore, 75% of the company directors (including the chairman of the board) must be Israeli citizens and should hold security clearances. The order also gives the Israel Security Agency broad discretion for protecting critical information infrastructures.

The privatization of Oil Refineries Limited is another example where foreign investment in an Israeli critical infrastructure asset was limited because of national security concerns. In 2007, the Israeli government decided to privatize Oil Refineries Limited. One of the bidders for the company was an investment group comprising Israeli companies and the Swiss company Glencore International AG, one of the world's largest suppliers of industrial raw materials. The Israeli government, based on advice from its security apparatuses, refused to grant Glencore a control permit for Oil Refineries Limited. Glencore ultimately had to withdraw from the investment group.

The primacy of national security over economic interests is reflected by the Israeli government's disregard for the adverse effects that foreign investment restrictions could have on economic liberalization. In theory, restricting foreign

ownership in the framework of privatization can have three adverse economic effects. First, barring foreign ownership limits the number of potential bidders in a privatization process. This has an adverse effect on competition and drives the bid amounts down compared with perfect (or close to perfect) competitive processes. Second, in small market economies characterized by a high aggregate concentration, only a small number of entities have sufficient resources to participate in privatization bids [4]. Thus, an already concentrated market becomes even more concentrated. Third, a restriction creates high opportunity costs for the restricting country. Foreign investment, in general, benefits a nation's international economic situation, local employees and research and development efforts, and increases long-term growth. By restricting foreign ownership, a country like Israel forgoes these benefits and incurs an opportunity cost.

4.3 Analysis

The United States and Israel balance economic and security interests when approving foreign direct investment in critical infrastructure assets. However, Israel's security-biased policy limits foreign investment to a much greater extent than U.S. policy.

American and Israeli regulatory policies covering foreign investment and critical infrastructure protection grant the government broad discretion in approving foreign control and ownership. In the United States, the President (in concert with CFIUS) can review the national security consequences of mergers and acquisitions involving foreign entities [13]. In Israel, the review and approval process is mandated through ministerial decrees in addition to privatization documents.

American and Israeli policies also differ in terms of substance and procedure. Although both countries do not strictly prohibit foreign ownership, the Israeli policy is more stringent than the American policy. The American CFIUS process is more clear and transparent than its Israeli counterpart, and, therefore, provides less uncertainty to foreign investors. The differences between the two mechanisms reflect the challenges inherent with conflicting ideologies: the importance of national security in the case of Israel versus the prevailing economic ideology of minimal market intervention in the case of the United States.

5. Conclusions

The need to preserve national security while deriving the benefits of global economic liberalization presents a significant challenge for governments attempting to privatize critical infrastructure assets. In the post September 11, 2001 world, the notion that foreign direct investment positively contributes to an economy is gradually being tempered by the realization that it can pose a threat to national security. Indeed, the threshold of what constitutes a national security risk has lowered considerably.

With regard to foreign direct investment in critical infrastructure assets, the United States now appears to favor security over economic benefits. The result is additional investigations and stricter security conditions for government approval, increasing the risk and the uncertainty for foreign investors. This tendency entails adverse economic effects for countries regardless of whether they have large or small market economies. As a small market economy, Israel is already characterized by a high aggregate concentration. Thus, Israel's restrictions on foreign investment in critical infrastructure assets may result in even higher aggregate concentration with clear adverse effects. It is imperative that policy makers strike the right balance between national security concerns and economic liberalization.

References

[1] J. Arquilla and D. Ronfeldt, *Networks and Netwars: The Future of Terror, Crime and Militancy*, RAND Corporation, Santa Monica, California, 2001.

[2] G. Bush, Executive Order 13456 of January 23, 2008, The White House, Washington, DC (www.fas.org/irp/offdocs/eo/eo-13456.html), 2008.

[3] Department of the Treasury, Committee on Foreign Investment in the United States Annual Report to Congress (Public Version), Washington, DC (www.ustreas.gov/offices/international-affairs/cfius/docs/CFIUS-Annual-Rpt-2008.pdf), 2008.

[4] M. Gal, *Competition Policy for Small Market Economies*, Harvard University Press, Cambridge, Massachusetts, 2003.

[5] K. Gordon and M. Dion, Protection of Critical Infrastructure and the Role of Investment Policies Relating to National Security, Organization for Economic Cooperation and Development, Paris, France (www.oecd.org/dataoecd/2/41/40700392.pdf), 2008.

[6] E. Graham and D. Marchick, *U.S. National Security and Foreign Direct Investment*, Institute for International Economics, Washington, DC, 2006.

[7] D. Ivry-Omer, *Regulation of Electronic Communications Services in Israel*, Israel Democracy Institute Press, Jerusalem, Israel, 2009.

[8] J. Jackson, Foreign Direct Investment in the United States: An Economic Analysis, CRS Report for Congress RS21857, Congressional Research Service, Washington, DC (fpc.state.gov/documents/organization/109490.pdf), 2008.

[9] B. Krebs, Estonia incident demonstrated power of Russia-based cyber networks, *The Washington Post*, October 13, 2007.

[10] Ministry of Communications, The Telecommunications Order, Tel Aviv, Israel (www.moc.gov.il/sip_storage/FILES/1/371.pdf), 2004.

[11] J. Nitzan and S. Bichler, *The Global Political Economy of Israel*, Pluto Press, London, United Kingdom, 2002.

[12] I. Traynor, Russia accused of unleashing cyberwar to disable Estonia, *The Guardian*, May 17, 2007.

[13] United States Government, Authority to review certain mergers, acquisitions and takeovers, Title 50 Appendix, Section 2170, *United States Code Service*, pp. 353–360, 1996.

[14] United States Government, Title 42, Public Health and Welfare, Critical Infrastructure Protection Act of 2001, *United States Code Annotated*, pp. 456–459, 2003.

[15] United States Government, Foreign Investment and National Security Act of 2007, Public Law 110–149, 110th Congress, *U.S. Statutes at Large*, vol. 121, pp. 246–260, 2007.

[16] United States Government, Regulations pertaining to mergers, acquisitions and takeovers by foreign persons, *Federal Register*, vol. 73(226), pp. 70701–70729, 2008.

[17] J. Williamson, The Washington Consensus as Policy Prescription for Development, Institute for International Economics, Washington, DC (www.iie.com/publications/papers/williamson0204.pdf), 2004.