Reunification of Korea: Economic Consequences from an External Point of View^{*}

EDWARD M. GRAHAM^{**}

Korean reunification remains an uncertainty. When and if it comes, the condition of the North Korean economy is primitive compared to the economy of South Korea. Because of massive investment needs in the North, and under plausible assumptions regarding savings rates in a unified Korea, the balance of payment of a reunified Korea is likely to deteriorate significantly in the event of reunification. Foreign direct investment could ameliorate this result, and might contribute to a more rapid catch-up of the North to the South.

Keywords: Korean reunification, economic effects of Korean reunification, balance of payments effects of Korean reunification

^{*} Originally Prepared for 2005 IKUPD Forum "Korean Reunification in Korea US Relationship," Harvard Law School, April 9, 2005.

^{**} The author would like to thank Ted Kim, Jim Lister, Paul Karner, Marcus Nolani, two persons of Korean nationality who wish to remain anonymous, and two anonymous reviewers for valuable comments on an earlier draft.

Direct all correspondence to Edward M. Graham, Senior Fellow, Institute for International Economics, 1750 Massachusetts Ave. NW, Washington, D.C. 20036-1903 USA; Tel: 1-202-454-1326; E-mail: Monty.Graham@cie.com

I. INTRODUCTION

Almost all Koreans dream that the “two Koreas,” the Republic of Korea (ROK) in the south and the Democratic People's Republic of Korea (DPRK) in the north, reunify. This dream, of course, has not been realized. During the early to mid-1990s, there was some expectation that the DPRK's economy might collapse, bringing about reunification similar to Germany's some years earlier (see Noland 2004 for a review of studies predicting South Korean collapse. See also Eberstadt 2004). But this has not happened, and few analysts now expect such a collapse in the near future. Moreover, DPRK's withdrawal from the Nuclear Nonproliferation Treaty (NPT) and statements by the DPRK leadership announcing that the DPRK is a nuclear power have greatly complicated matters. This announcement also violated an early 1990s accord with South Korea, the Accord on Development of the Peninsula, and the 1994 Agreed Framework with the United States. Relations between the United States and the DPRK, neither ever warm nor friendly, have become significantly cooler since this announcement.

This is certainly so relative to the period of the Agreed Framework negotiated under the Bill Clinton administration. Relations have become cooler with the Bush administration, with President George W. Bush proclaiming the DPRK to be part of the “Axis of Evil” as well as an “Outpost of Tyranny.” The Chicago Council on Foreign Relations publishes “temperatures” of relations among countries, based on polls of opinion leaders. The “temperature” of the US-North Korean relationship was a frosty thirty-four[a1] in 2002, but chilled further to twenty-eight in 2004[a2]. This latter reading tied for the lowest “temperature” of US relations with any country during the past fifteen years (the temperature of the US-Iraq relationship was also twenty-eight prior to the US invasion of that country). For sake of comparison, one might note that the “warmest” United States relationships are with Canada and the United Kingdom, at seventy-seven and seventy-six, respectively[a3].

During the administration of Kim Dae-jung (1998-2003), the ROK pursued the sunshine policy, whereby greater contact and better relations with the DPRK were sought (the ROK and the DPRK were, and currently are, technically in a state of war when Kim Dae-jung took office). As part of this policy, South Korean firms, principally ones belonging to the Hyundai group, undertook investments in the DPRK, mostly in Kaesong Industrial Park located near Pyongyang or in the resort complex developed by Hyundai in the Mount Kumgang (Kumgangsan) region. By almost all accounts, these undertakings have been money-losers for Hyundai. Indeed, the 2004 bankruptcy of the once-flagship firm of the Hyundai group, Hyundai Engineering and Construction Company (HECC), would seem closely related to the large cash flow drain created by these undertakings, especially at Mt. Kumgang.¹ The sunshine policy also resulted in a limited number of reunifications of families separated by the partition of Korea following the Korean War of the early 1950s, and largely unfulfilled plans to re-link the two Koreas by rail. Although

the current ROK administration under Roh Moo-hyun has pledged to continue the sunshine policy *de facto*, this policy seems to have been significantly scaled back.

Thus, Korean reunification remains mostly a dream. A limited number of exchanges continue, especially in the field of sports. Sports exchanges have brought to the ROK such phenomena as the weeping North Korean cheerleaders, arguably the best propaganda instrument in the South that the North has yet devised (they are young, innocent-looking, and attractive). Sympathy for the North in fact does seem to be strong in the South, especially among young persons who also tend to despise the policies of the US' Bush administration, such that the North is able to play off of this sentiment by appealing to Korean nationalism. But even so, Korean unification seems distant even to youthful South Koreans who, sentiment aside, are also aware that the DPRK remains a dictatorship where there are widely reported human rights abuses carried out under the leadership of a man who tries to seem charismatic but often comes across as simply eccentric. Even youthful South Koreans are aware that a large number of the DPRK's own residents would like to emigrate but are forcibly prevented from doing so.

Even so, surprises happen (who in 1988 would have guessed that, three years later, West and East Germany were to be reunited?). Were the ROK and the DPRK to be reunited, it is worthwhile to ask what the effects would be on the ROK itself and on other nations that might be affected. In the remainder of this paper, I will attempt to look at what these effects might be from an economics point of view. As I do not claim to have the expertise to go beyond economics, this examination will largely be limited to economic and not social and political consequences (very important issues that are out of my area of competence).

To this end, it is worth looking at some major contrasts between the ROK and the DPRK. If the two Koreas were to reunite, the result would be:²

- 1) A country whose land mass had increased by a factor of 2.2 times.
- 2) A country whose population increased by about 46% (the combined population would be about 146% that of the present ROK). There is somewhat more ethnic diversity in the North than in the South, mostly due to the relatively larger presence of ethnic Chinese in the North. Thus, reunification would reduce somewhat the ethnic homogeneity of the nation, or at least from the perspective of the South.
- 3) A country where the median age of the population would drop slightly; the ROK, similar to most high income (and some middle income) nations, face the future problem of the graying of the population, such that elderly people who are no longer economically productive will grow as a percentage of the population. Reunification with the DPRK would delay this problem somewhat, but it would eventually still come to pass.
- 4) A country whose per capita income would be, in the early years following

reunification, significantly lower than that of the ROK's current level.

On this last point, the per capita income of the ROK in 2003 was, at purchasing power parity rates, about US\$17,800 while the per capita income of the DPRK was only US\$1,300.³ On this basis, if reunification with the North had been achieved in 2003, purchasing power parity per capita GDP of the unified nation would have been about \$US12,500. Also, of course, there would also be created major income inequality between residents of the northern portion of the reunified country and those of the southern portion at the outset.

II. ECONOMIC EFFECTS OF REUNIFICATION ON THE ROK

By a number of measures, reunification would place large economic costs on the South. Or, at least, this would be so if following reunification, the effort were to be made to raise North Korean incomes to levels approaching those of the South. Much of these costs would involve heavy investment in necessary infrastructure upgrades. For example, North Korea has only about 2,000 km of paved highways while almost 30,000 km of roads in the North are unpaved.⁴ In the South, by contrast, 65,000 km of paved roads exist on a smaller land mass. Moreover, the quality of the paved roads in the South is much higher than in the North. In the South, there are over 2,300 km of oil and gas pipeline; the North, only 154 km of these pipelines. There are eighty-eight airports in the South with paved runways, of which three are large international airports. In the North, there are thirty-five airports with paved runways. Three of these have runways capable of handling long distance international flights, but have inadequate terminal facilities to handle a large volume of passenger or freight traffic. Most transport, both of goods and passengers, in the North is reportedly by railway. There are 5,214 km of railways of standard gauge, but visitor reports indicate that much of the railroad is in poor repair. In the South, there are fewer railway lines (3,125 km of railways of standard gauge), but these include very modern high-speed train lines that are lacking in the North.

Other differences in infrastructure can be cited. There are, for example, 1.1 million telephones in the North, or barely one telephone for every twenty residents, all of which are, at least officially, land-lines. Near the Chinese border, however, North Koreans have been able to buy cell phones that utilize Chinese transmission facilities. These are illegal, but the number of such phones is believed to be about 20,000. In the South, there are 22.8 million landlines and, as of 2003, 33.6 million mobile telephones, or more than one telephone per resident. The quality of telephone service in the North has not been assessed by experts, but visitors report that it is quite poor. By contrast, the quality of telephone service in the South is considered excellent by international standards.

In the North, total electricity consumption in 2001 was 27.91 billion kilowatt-hours, or about 1,200 KWH per capita. In the South, total electricity consumption was 270.3 billion KWH, or about 5,560 KWH per capita (close to times times the per capita consumption in the North). Moreover, power plants in the North are generally quite old and in need of modernization or replacement. One report indicates that only sixty-two generating facilities in the North (out of about 500) were actually functioning in 2000 (von Hippel, Savage, and Hayes 2005). Unlike the South, the North faces a shortage of potable water, and modern sewage is generally lacking in the North. With the latter, however, there is also a need to upgrade sewage facilities in the South.

Indeed, there is a belief among economists that the overall capital stock of North Korea has deteriorated substantially during the decade and a half since the fall of the Soviet Union (which provided investment in the DPRK), so much so that the North might be in a poverty trap (new capital goods are not being added quickly enough even to replace worn-out capital). Babson and Yoon (2004) report that at least US\$5 billion would be required to create enough additional capital to bring the North out of this trap.

It must be noted that in spite of the above, there are factors in the North that are economically favorable relative to the South. Not only is the amount of land in the North greater than in the South, and less-densely populated, but the percentage of arable land in the North is greater than in the South (20.8% in the North as opposed to 17.2% in the South). However, soil erosion and degradation put some constraints on the North Korean agricultural sector and, in the event of reunification, the unified nation will doubtlessly face a large bill for soil restoration in the North. North Korea contains more natural resources than South Korea. In the DPRK, mining is a major economic activity whereas mining hardly figures in the ROK's economy.

Education at least at the elementary level seems to be a prerequisite for a poor country to enter into a period of rapid economic development and growth. On this score, the DPRK would seem to be in good condition; adult literacy in the DPRK approaches 99%, among the highest in the world. Also, an important indicator of social welfare is life expectancy at birth; this is 71.1 years in the DPRK, 75.0 years in the ROK. These life expectancy figures, from the CIA, do not apparently include effects of the famine in North Korea during the late 1990s. Estimates of deaths due to this famine range from under a quarter of a million to more than 3 million.

But on the whole, this would suggest that healthcare in the North is actually quite good, or at least so for a rather poor country (and in spite of some reports to the contrary). However, some of the difference in life expectancy can in fact be attributed to a much higher infant mortality rate in the North. There are 7.1 deaths per 1,000 live births in the South versus more than twenty-four deaths per 1,000 live births in the North. Even so, overall, life expectancy is high and

infant mortality low in the North compared to other countries at comparable per capita income. Also, while women outlive men on average in both Koreas, the average number of years lived by men relative to women is lower in the South (0.90) than in the North (0.92). Thus, longer overall life expectancy in the South relative to the North would seem to be due in some measure to robust South Korean women.

While natural resources favor the North and human capital/human health do not seem to disfavor the North unduly relative to the South, apart from the military sector, the industrial structure of North Korea is relatively primitive and technology non-intensive compared to that of South Korea. As such, major industries in the DPRK include the basic metallurgical industries, machine building, textiles, and food processing. Major industries in the South are much more technologically intensive and include electronics, telecommunications, automobiles, chemicals, shipbuilding, and what is presently the world's most efficient steel-making sector. Per capita income differences between the North and the South, moreover, are caused by differences in overall productivity, this productivity clearly much higher in the South. Some of the difference is due to different sectoral distributions of the working population. In particular, a much higher percentage of North Korea's working population is in the relatively low-productivity agricultural sector, though the exact percentage is unclear. But the following figures are indicative: in the South, less than 4% of GDP comes from this sector, whereas in the North, more than 30% of GDP comes from the agricultural sector. Almost surely, then, at least 30% of the working population in the North works in agriculture, a far higher percentage than in high-income countries including the ROK, and likely an understated percentage. On this, it might be noted that in recent years, upwards of 60% of China's workforce is employed in the agricultural sector, albeit this percent is dropping each year.

A huge difference between the economies of the ROK and DPRK is the intensity of exports. Total exports of the South in 2003 were valued at about US\$201 billion, or about US\$4,140 per capita. Total reported exports of the North were only about US\$1.04 billion in 2002, or about US\$46 per capita. Incredibly, then, exports per capita of the South were almost 100 times greater than those of the North. However, the North probably exports about US\$500 million in weapons that are not reported in the above figures, and an unknowable quantity of illicit drugs. Even so, if the value of illicit drug exports plus unreported weapons exports total as much as US\$1 billion, the exports per capita of the South are still at least fifty times greater than those of the North.

Indeed, South Korea is the tenth largest economy in the world today. If the South is reunified with the North, the combined country will still be in tenth place. The combined country would moreover no longer be classed among the world's high-income countries by the World Bank, but would fall into the middle-income category. To be sure, if and when per capita incomes in the North rose

to equal those of the South, the combined country would regain its former position as a high-income country. But, if economic growth rates in the North could be sustained at rates comparable to those in the South between the late 1960s and the late 1990s, this per capita income equalization would take at least thirty years to achieve⁵. Many analysts think, however, that this "transition period" could be a lot longer than thirty years.

However long the transition period, it is clear that huge investments must be made both in infrastructure and the industrial sector if the present DPRK ever is to have a per capita income equivalent to the ROK. Moreover, in the event of reunification, it is highly likely that these investments will come from the South, meaning that savings in the South will be intermediated into investment in the North. Exactly how much investment would be needed or likely be undertaken is not clear to anyone. To this end, efforts have been made to estimate relevant figures, including by Marcus Noland of the IIE. Noland's estimates are conditional, but he estimates that if technological convergence is at 2% per annum (this represents the rate at which total factor productivity in the North is assumed to converge with that of the South), and if per capita income in the North is to rise to 60% of the level in the South in ten years, there will have to be transfers to the North (mostly taking the form of investment) on the order of \$600 billion (Noland 2000). The amount of needed transfer declines when a higher rate of convergence of total factor productivity is assumed. However, this rate of convergence is negative at the present time, i.e., total factor productivity growth rates in the South are higher than in the North, even though the absolute level of total factor productivity in the South is much higher than in the North.⁶ In the unlikely event that this convergent rate was to be 12% per annum, the total transfer needed drops to US\$200 billion.

Noland (2000[a4]) notes that his estimates might suffer from a number of inadequacies, including, most importantly, that some dynamic effects that might accrue to reunification, but are impossible to quantify, are not accounted for in the underlying model used to make these estimates. Such effects would include, *inter alia*, changes in the sectoral composition of output, e.g., through the creation of activities in sectors that do not currently exist there. But as previously implied, there is little idea as to what dynamic effects of these sorts might occur, thus making it impossible to estimate how large their effects might be (see Noland 2004). Having said this, Noland (2004[a5]) uses a computable general equilibrium model that can capture both static and some dynamic effects of economic integration, and is indeed probably the best available model for this type of analysis.

Noland (2004[a6]) provides a list of other estimates that run a huge gamut, from as low as US\$225 billion over ten years to as high as US\$1,700 billion. Estimates of the South Korean government are that costs will be between about US\$300 billion and US\$600 billion. Thus, all estimates suggest that the costs will be in hundreds of billions of dollars, but there is very wide variance in how

many hundred of billions of dollars will be required.

III. ECONOMIC EFFECTS ON OTHER COUNTRIES

If estimating the effects of reunification on South Korea is difficult, estimating effects on other countries is even more so. This is so if for no other reason than that these latter effects depend in some large measure on the former effects; thus, if one cannot estimate the former correctly, one stands almost no chance at the latter.

Having said this, however, it is likely that one main effect of reunification during the initial decade following reunification would almost surely be that Korea's current trade and current account surplus will decline and perhaps even become negative. The effect of this from the usual mercantilist point of view (which dominates the actual conduct of relations among countries with respect to international trade, to the perpetual horror of economists), would be calming: Korea's major trading partners would either import less from Korea relative to their GDP than at present, or would export more. Both might be possible (more exports to Korea and less imports from Korea), though the effect would more likely be more exports to Korea rather than fewer imports from Korea.

In 2003, South Korea exported US\$201.3 billion and imported US\$175.6 billion worth of goods and services, leaving the balance of trade at about US\$25.7 billion. However, South Korea runs a deficit on intangibles, such that the current account balance was a surplus of only US\$12.3 billion. North Korea's exports in 2003 totaled about US\$1 billion and its imports about US\$2 billion, suggesting a trade deficit of US\$1 billion. As intangibles are not accounted for in available data, it is assumed that the current account deficit of the DPRK was also about US\$1 billion. Combining the two, the overall current account surplus of the two Koreas thus was a modest US\$11 billion.

But as suggested above, the effect of reunification would almost surely be to reduce this surplus and likely to render it negative. In other words, Korea would likely go into a period of current account and trade account deficits. Why is this? It is simply because investment requirements in the North would boost the combined investment in both countries and, as noted above, the investment would largely be financed from the South. At the same time, savings in the South would likely not rise. As is widely noted in international economics, the trade balance of a nation is governed by the overall balance of investment and savings (where a public sector deficit counts as dissaving and a public sector surplus as positive saving, and where the current account can interact with savings and investment, i.e., S and I should not be considered exogenous in the formula just below but, rather, either might be affected by net international capital inflow or outflow, which in turn are partly determined by the current account balance) according

to the following standard formula (for derivation, see Krugman and Obstfeld 2002):

$$(X - M) = (S - I)$$

where X is exports, M is imports, S is national savings net of public sector surplus or deficit, and I is investment. Thus, a trade account surplus is exactly the mirror image of the excess of national investment over national savings (i.e., the magnitudes are the same but the signs are reversed). If investment increases but savings stays constant, then the trade surplus will diminish – or, if there is a trade deficit, this will increase.

Given this, it would appear that if total investment in the combined Korea was to rise by US\$20 billion to as much as US\$170 billion per year, and if there was no change in savings, then Korea's current account would become negative and stand at something between US\$ – 9 billion and US\$ – 161 billion per annum, which is of course a wide range. The latter figure would likely be unsustainable if attained and external considerations almost surely put some constraint on the rate at which infrastructure and other capital could be added in the North.

The above depends upon savings in Korea remaining constant. This might be so, given 1) initial low incomes in the North such that rises in income, at least in the early years following reunification, would be devoted to rising consumption and not rising savings. This would be consistent with Germany's experience following reunification. However, it should be noted that in several Asian economies, including in the ROK and in Taiwan (and, apparently, in present-day mainland China), household savings rates rose as per capita income rose, even when the latter was still quite low by the standards of the high income countries. In addition, 2) savings in South Korea have on trend been falling. The net national savings as a percent of GDP in 1996 was 22.7%, but this percent was only 18.7% in 2003. Given the trend, it would be difficult to predict that net national savings would rise following reunification and an assumption of no change seems a bit conservative.

These are, however, very dicey estimates that have, as already admitted, large potential to be wrong. Some things to consider in this matter include the following:

- 1) Although savings in the South would not likely rise for reasons already indicated, as per capita income in the North rise, savings as a percent of GDP might increase (this was the experience in the South; though the ROK remained very poor in the 1960s, national savings as a percent of GDP were very low but rose sharply as per capita national income rose). On this, however, it should be noted that the experience of German reunification runs somewhat counter to this proposition, i.e., the former East Germany for some time seemed to be a pit into which the former West Germany threw money.
- 2) It is quite possible that under reunification, investment rates in the South would decline as savings are transferred to the North. This would be consistent

with the German reunification experience. Moreover, under standard economic growth theory, investment rates in the South might be expected to decline under any circumstances as incomes there converge to those of the very highest income nations. Thus, even if additional investment in the North were to be several tens of billions of dollars over a period of ten years, the total increase in investment of the two Koreas might be well less than this increment in the North. The effect would be a reduced combined current account deficit.

- 3) Even if the combined Koreas were to experience current account deficits, as already suggested, Korean exports would not likely decline. The ROK's industrial structure is simply too export-oriented for this to happen. This is in spite of the fact that, over time, consumer demand in the North would likely grow rapidly. This demand could not possibly absorb the excess of supply over demand in most of South Korea's major export-oriented sectors, such as electronics, automobiles, and shipbuilding (although internal demand for steel and perhaps even telecommunications equipment and petrochemicals, all sectors with current trade surpluses in the South, could come to equal domestic supply and wipe out those surpluses). Moreover, one might expect the North to develop export capabilities, perhaps even signaling Korea's return to the export of labor intensive goods such as textiles, apparel, and footwear.
- 4) Given the above, a trade deficit in a unified Korea would likely be greater than the current account deficit and emerge as the result of increased demand for imports rather than reduced exports. Both exports and imports would grow as a percent of GDP, but with the latter growing faster than the former. As indicated earlier, this would in net likely reduce mercantilist trade tensions between Korea and its trading partners, but some sector-specific tensions might persist nonetheless.

Trade is not, of course, the only vehicle by which Korean unification can exert economic effects on other nations, although trade effects are more likely to be politicized than others. Closely related to trade, for example, is foreign direct investment (FDI), which can generate either new exports or imports for the host nation (or both) and can also exist primarily to service the local economy using local inputs.

To begin on this subject, it should be noted that there are currently three Special Economic Zones in the DPRK that are meant to draw in FDI (for a comprehensive treatment of these zones, see Lee 2004), modeled loosely on similar and highly successful zones in China. These are the Rajin-Sonbong complex in the northeast corner of the country, established in 1991, the Kaesong Industrial Complex, created in 2000 (South Korean group Hyundai is the major investor), and the Sinuiju Special Administrative District, created in 2002 and apparently meant to primarily serve direct investors from China. The first zone was unfavorably located and, although it drew in as much as US\$88 million in projects, this is a modest sum,

the area seems to be in decline, and is now generally regarded as a failure. By contrast, both of the latter zones are favorably situated but have not been highly successful in attracting investment. At Sinuiju, a Chinese-Dutch tycoon, Yang Bin, was initially appointed as CEO but later was arrested in China on corruption charges. One reason might be that Yang planned for Sinuiju to be more of a playground, with gambling and "adult entertainment," than a serious industrial zone, and Chinese authorities might have taken some exception to this. In late 2004, there was a North Korean announcement that Sinuiju would be closed, though this is not confirmed.

Kaesong has been a somewhat brighter experience than either Rajin-Sonbong or Sinuiju, but not exactly an overwhelming success: To date, only about 1,800 North Koreans are employed in the zone, managed by about 300 South Koreans who have at least temporarily relocated there. Reasons for Kaesong's lackluster performance include: 1) financial difficulties of the Hyundai companies that emerged following creation of the Kaesong zone; 2) inefficiencies in the administration of the zones and, according to some reports, significant corruption; and 3) poor infrastructure linking the zones to the outside world (Ahn et al. 2004). Presumably, these problems, or at least the latter two, would be corrected in the event of Korean reunification. At the present time, there are plans to enlarge Kaesong so that upwards of 300 factories would eventually be located there. The zone has taken on some political/military significance, as it lies on the main (and narrow) route by which either North or South Korea would invade the other. If fully developed, it would pose a significant obstacle for armies advancing in either direction.

Would, then, the North become a magnet for FDI in the event of Korean Reunification? It is easy to envisage two quite different but equally plausible scenarios. The first is that in the event of economic reforms that would almost surely come with reunification, the North would become such a magnet by virtue of its relatively low cost but literate (and likely hard-working) labor force. This was the case of China, especially after then-premier Deng Xiao-ping's famous "Trip to the South" in 1991 and the economic reforms that followed this trip. FDI in China thereafter burgeoned, where much of it was so-called "export platform" FDI. As a consequence, foreign-invested enterprise became the major engine of enormous growth in both China's exports and imports, as well as a major engine of overall Chinese growth (see Graham 2004 and Lemoine and Ünal-Kesenci 2004). Perhaps recognizing the benefits to home and host country alike as a result of their own experience, China has in fact become a direct investor in North Korea, mostly in the Sinuiju zone. But at this moment, these Chinese investments are more "toe-holds" than anything else.

Here, however, we seek to look beyond the present time. In this first scenario of a future reunified Korea, the North becomes a magnet for FDI not just from China and present-day South Korea, but from all over the world. Major international companies from Europe, the United States, Japan, and elsewhere would invest

in the North, turning the former North Korea into an export platform of major proportions. This type of scenario seems to be playing out today not only in China, but also in formerly Communist "transition" economies such as the Czech Republic, Hungary, Poland, and Slovakia. If this scenario is realized, it is quite possible that the predictions of a reunified Korea having a persistent balance of payments deficit on current account for some number of years could be proven wrong.

But the second scenario suggests that although North Korea has abundant supplies of relatively low-cost but literate labor, in the event of reunification, subtle barriers would exist that would retard much FDI from reaching the North. As happened in the South, investment opportunities would be seized by the established *chaebols* (conglomerates) of South Korea. In time-tested fashion, these groups would enlarge their debt (and perhaps even their foreign ownership to raise additional equity) to finance large undertakings in the North. Thus, while there would be massive investment in what is now North Korea from outside the area, it would be by enterprises based in the South and would not qualify as FDI. In fact, for the moment, at the Kaesong Industrial Park in the North, foreign investment is limited to South Korean firms (and, for all practical purposes, to investment from companies formerly in the Hyundai group).

Which of these scenarios might prove more correct is difficult to predict. Above all else, it must be kept in mind that both these scenarios, and indeed all of the points made in this section, are speculative. These guesses are simply guesses. Moreover, there are issues that have not been addressed but are of importance economically, such migration between North and South in the event of reunification. As such, this author concludes in the same fashion as TV political satirist Dennis Miller: "This is just my opinion, I could be wrong."

REFERENCES

- Ahn, Choong-Yong, ed. 2004. *North Korea Development Report 2003/2004*. Seoul: Korea Institute for International Economic Policy (KIEP).
- Babson, Bradley and Yoon Deok-Ryong. 2004. How to Finance North Korea's Capital Requirements for Economic Recovery. *East Asian Review* 16(2): 65-96.
- Eberstadt, Nicholas. 2004. North Korea's Survival Game: Understanding the Past, Thinking about the Future. In *A New International Engagement Framework for North Korea? Contending Perspectives*, eds. Choong-Yong Ahn, Nicholas Eberstadt, and Young-Sun Lee. Washington, D.C.: Korea Economic Institute.
- Graham, Edward M. 2004. Do Export Processing Zones Attract FDI and its Benefits: the Experience from China. *International Economics and Policy* 1(1): 87-103.
- Krugman, Paul R. and Maurice Obstfeld. 2002. *International Economics: Theory and Policy*. 5th ed. Reading, Massachusetts: Addison Wesley.
- Lee, Jong-Woon. 2004. Current Status and Future Tasks of the New SEZs in

- North Korea. *Journal of International Economic Studies* 8(2): 121-44.
- Lemoine, Françoise and Deniz Ünal-Kesenci. 2004. Assembly Trade and Technology Transfer: The Case of China. *World Development* 32(5): 829-50.
- Noland, Marcus. 2000. *Avoiding the Apocalypse: The Future of the Two Koreas*. Washington, D.C.: Institute for International Economics.
- _____. 2004. *Korea after Kim Jong-il*. Washington, D.C.: Institute for International Economics.
- Von Hippel, David, Timothy Savage, and Peter Hayes. 2005. North Korean Energy Sector: Current Status and Scenarios for 2000 and 2005. Available: <http://www.nautilus.org>.

ENDNOTES

- ¹ Note: HECC is not to be confused with the former Hyundai Electrical Company (HEC), now the troubled firm Hynix.
- ² Note: Facts and figures in the following are from US Central Intelligence Agency, *The World Factbook*, 2005 or are author's calculations based on facts and figures from this source.
- ³ Note: Power parity figures are used because nominal comparisons between the per capita GDP of the two Koreas is difficult as scant data exists for the North.
- ⁴ With respect to these and all other data pertaining to North Korea presented in this paper, it must be remembered that there is no reliable data source for North Korea and, hence, all comparisons must be seen as something of "best guesses." It is not even known, for example, whether the population figure cited above is really accurate. On this issue of North Korean data, see Liberstadt (2004).
- ⁵ I made this estimate assuming that North Korean per capita rates of growth were the average of South Korean rates 1971-1991 and that South Korean rates are at the average of the years following the recession of 1998. Apparently, a more sophisticated model used by the Korean government yields almost exactly the same result.
- ⁶ Note: Most economic theory would predict that total factor productivity is likely to grow faster in a low-productivity economy than in a high productivity one because the former can benefit from "catch-up" efforts that are not available to the latter. The implication is that current trends in the two Koreas are contrary to what theory might predict.