

**KOREAN REUNIFICATION AND RECONSTRUCTION: CIRCUMSTANCES, COSTS, AND
IMPLICATIONS**

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EXECUTIVE SUMMARY

This paper analyzes and summarizes some of the central issues and costs associated with Korean reunification.

MAIN ARGUMENT

Korean reunification could occur through the following ways:

- Unification through Pyongyang's gradual adaptation of China's economic model, leading to closer relations between the two Koreas
- Unification through collapse and absorption
- Unification through military conflict with South Korea

Unification would entail a variety of capital costs based on an assumed target of rapidly doubling North Korea's GDP.

- The capital costs of doubling North Korean GDP range from \$50 billion to \$700 billion (in 2003 U.S. dollars); the mid-range of these investment costs of unification lies between \$330 and \$350 billion.
- Spread over five years, the annual investment costs will be in the neighborhood of \$60–\$70 billion.

POLICY IMPLICATIONS

- Policymaking and the operation of global markets would evoke various plausible ways of distributing the investment costs associated with Korean reunification so that the burdens on South Korea's economy are lighter and more manageable.
- Reunification may bring substantial economic as well as political and security benefits for the region. China, South Korea, and Japan would experience economic opportunities for trade and investment, and Beijing would be able to replace its unrequited resource transfers of fuel and food to Pyongyang by more normal trade and investment transactions.
- Reunification would also benefit the security and political situations in Northeast Asia. A unified Korea in cooperation with the region's powers would be able to control and then terminate the WMD programs in North Korea. In addition, Japan could more easily resolve the abduction issue, China would no longer have to worry about potential refugee flows into China's Jilin province, and South Korea would no longer have to worry about an attack from the North.

Introduction

This paper analyzes and summarizes some of the central issues associated with Korean reunification, and especially its attendant costs.¹ The paper is divided into four sections dealing respectively with: i) circumstances in which reunification may occur; ii) the investment or capital costs of reunification; iii) defining and measuring the costs of Korean reunification; iv) consequences and implications of unification.

Circumstances of Possible Reunification

North Korea is conspicuous among the 191 members of the United Nations in the paucity of reliable information about it. The North Korean government has never published a statistical yearbook, and it ceased publishing even fragmentary economic statistics in the early 1960's. Limited information and data, as well as the unreliability of the available data, result in obscurity and conjecture rather than clarity and knowledge about the political, economic, and military circumstances actually prevailing in North Korea. Consequently, conjectures about whether, when, and how unification of the Korean peninsula might ensue should be recognized for what they are: conjectures immersed in deep obscurity—what Winston Churchill described in reference to another country as “a riddle wrapped in a mystery inside an enigma.”

The political prospects for Korean reunification and for the possible unraveling of the North Korean system have fluctuated intermittently and widely over the past dozen years. Following the demise of Kim Il-song in 1994, various academic and other observers opined that the regime's survival might be imperiled by the evidently serious deterioration in the North Korean economy, and by the uncertain and uneven process by which Kim Jong-il seemed to be edging toward the power that had been possessed by his father. Indeed, one might have inferred from the character and frequency of such speculation that the probability of the DPRK's demise was non-negligible, perhaps in the vicinity of 0.1 or higher.

A decade later the consensus that might be inferred from recent academic and other observers' assessments would seem to place the prospects for the regime's survival much lower than the earlier forecasts. That this consensus has shifted so sharply in the past decade is

¹ The paper draws heavily on a previous monograph, North Korean Paradoxes, Charles Wolf, Jr., Kamil Akramov, Rand, MG-333-OSD, 2005, while adding further policy and other considerations developed since publication of that monograph.

attributable to several factors: first, where broad political–economic conditions in North Korea or elsewhere are concerned, continuity and inertia are the most likely prognosis, at least in the short and mid-term; second, the North Korean regime’s demonstration of its undiminished ability to maintain one of the dozen largest conventional military establishments in the world notwithstanding its serious economic difficulties -- North Korea’s continued existence seems to belie various scenarios that envisage unraveling of the system.

Finally, external attention has shifted away from conjectures about unraveling and possible reunification, and toward more immediate issues with which the international community is concerned. These include North Korea’s repeated announcements and threats that it would reprocess spent nuclear fuel rods and/or enrich natural uranium to produce nuclear weapons, that it has already done so, and that it might do more of the same unless its demands for security guarantees coupled with economic benefits are met.²

Despite this shift of attention, it is not unprecedented for major unexpected events to occur in international affairs. Notable examples include the Soviet Union’s abrupt collapse in 1990; Germany’s reunification in 1991; Japan’s protracted economic stagnation in the 1990’s against a background of two decades of its economic “miracle”; and the “Orange Revolution” in Ukraine in 2005, which incidentally has been rather abruptly reversed in 2006.

To focus on the circumstances in which reunification of the Korean peninsula might occur requires a shift of attention from the narrower focus of the intermittently suspended and then resumed six-country talks among North and South Korea, China, Japan, Russia and the United States. These talks have focused on the issues of denuclearization, “normalization” of DPRK-US relations, and various forms of possible economic “cooperation.” However, allowing for such a cognitive shift as well as for a suspension of disbelief in reunification, multiple unification scenarios are conceivable. Three of these are briefly sketched below; each member of the set should be thought of as constituting a broad category of scenarios varying in their details and specificity and allowing for multiple combinations among these elements. The three broad scenario categories are: unification through the North Korean system’s evolution, adaptation, and gradual integration with the South; unification through system collapse and absorption by the South; and unification through and following conflict.

² North Korean Paradoxes, 2005, pp.21-22.

- ***Unification through System Evolution and Adaptation.*** This scenario can be viewed as possibly evolving from an accelerated adaptation of China's successful development model: liberalizing North Korea's economic system, opening and encouraging trade and capital transactions, decreasing centralized economic control, and increasing decentralization and marketization of economic activity.³ Under these circumstances, the economic systems in North and South Korea would begin to converge, and become mutually more compatible.

As a by-product of such a chain of events, some form of political federalism might emerge and could be encouraged, including closer contacts between the respective military establishments, joint discussions, training, and exercises between them, and denuclearization of the North.⁴

- ***Unification through Collapse and Absorption.*** While the North Korea regime has shown an extraordinary capacity to withstand severe economic difficulties, this capacity has relied heavily on the regime's dexterity in acquiring economic grants and other types of support from outside sources. In turn, these resources have been deployed to maintain and strengthen centralized political control, notwithstanding the disruptive effects of famine, depletion of the North Korean populace, and the rare emergent signs of internal resistance. However, what has been clear in the past might not be replicable in the future.

If North Korea experienced further economic set-backs, and if these were accompanied by its inability to acquire external subventions to sustain its military establishment, the ensuing situation might differ from that of the past. The regime might be unable to support its military assets and to maintain order and control throughout North Korea. Divisions might emerge within the party leadership, and Kim Jong-il's tenure might be compromised. Moreover, if contacts and communication between the military establishments of the North and South had previously occurred (admittedly a big "if"), such contacts might be expanded into

³ The Gaesong industrial zone and the promotion of tourism to Mount Keumgong provide examples and possible indicators of further development along these lines. While earlier reports of movement in this direction foundered, the more recent reports may be sustained. See, for example, the Economist, "Through a Glass Darkly," March 13, 2004.

⁴ See Wolf, Akramov, op. cit., pp.22-23.

some form of cooperation between the respective military establishments. With suitable financial inducements, this in turn might lead to some degree of demilitarization, to denuclearization of the North, and to coalescence of the North and South Korean systems.

To be sure, this trajectory is not the only one that might ensue following collapse. Instead, the ensuing circumstances might entail the emergence of regional warlords and conflict among them - - circumstances that might then link with the third scenario of unification through conflict.

- ***Unification through Conflict.*** This scenario might arise from any of several precipitating events. For example, there could be a North Korean invasion of the South based on a real or fancied provocation from South Korea; or a North Korean interpretation of a provocation from the United States as one in which South Korea is closely complicit or internal conflict within North Korea spilling over into the South; or by “preventive” intervention into North Korea from the South to forestall such a spill-over or to forestall other possibly threatening circumstances in the North.⁵

In any of these circumstances, it is to be hoped, not implausibly, that the United States and China would cooperate - - either tacitly or overtly - - to end the conflict by using their respective military forces to restore and preserve order and especially to prevent further escalation.⁶ It is also likely that the conflict, as it might progress, would result in considerable damage inflicted on South Korea’s capital stock, which would raise reconstruction costs in the South and perhaps also the direct capital costs of unification in the North. If a conflict scenario were to include within it insurgency in North Korea, the burden of achieving sufficient security for reunification to proceed would be heavier and the attendant costs would rise accordingly.⁷

⁵ cf. Recall the previous comment that each of the illustrative scenarios can be thought of as a set or category rather than a single scenario, with multiple permutations possible within each of the three sets.

⁶ Of course, this optimistic prognosis might be supplanted by more pessimistic ones.

⁷ Wolf, Akramov, op. cit., pp. 22-25.

Investment Costs of Reunification

Since the demise of Kim Il-song more than a decade ago, consideration of possible Korean reunification has lapsed in both policy and academic circles, where the subject is rarely broached. As noted earlier, the evident reluctance of the international community to consider unification has numerous contributing explanations. In addition to the ones mentioned before, they include the overarching priority placed on North Korea's denuclearization (at least by the United States and Japan—among the five powers most directly concerned), and hence the desire to avoid introducing other controversial issues (such as reunification) that might divert attention from this priority aim. Another explanation lies in the compelling demands of crises occurring elsewhere in the world: for example, in Iraq, Iran, and the global war on terrorism. Finally, the fear of provoking North Korea and thereby further impeding the already limited prospects for progress in the six-power talks or leading to still more drastic consequences is a major reason why the subject of reunification has been shelved in recent years.

The reluctance to address the subject has also been heightened by the enormity of most prior estimates of the costs that would be associated with it. In part, the scale of these prior estimates has been inflated by casual comparisons between the economies and the demographics of East and West Germany prior to that country's unification in 1991-1992, and between North and South Korea. For example, East Germany's population was about one-fourth that of West Germany in 1990, while North Korea's population is about one-half that of South Korea; East Germany's GDP was about 8-9 percent of West Germany's, whereas North Korea's economy is only between 3 per cent and 5 per cent of South Korea's. From these and other comparisons, the inference has been drawn that the relative costs of reunification in Korea would be even higher than the huge costs in Germany, which have cumulated to more than 5 per cent of West Germany's GDP since reunification in the early 1990's.⁸

The reason why estimates of unification costs drawn from the German experience are likely to be misleading in Korea is not because the corresponding reunification costs in Korea won't be high; indeed, they surely will be. It is rather because the particular and perhaps mistaken macroeconomic policies chosen by the West German government at the time of

⁸ See Yorg Bibow, "The Economic Consequences of German Unification: The Impact of Misguided Macroeconomic Policies." Annandale-on-Hudson, New York: Levy Economics Institute, Public Policy Brief #67 (2001).

German unification in 1990 directly contributed to raising substantially the ensuing burden imposed on the West German economy. Specifically, the FRG immediately established parity between the deutschemark and the East German ostmark despite the fact that the purchasing power equivalence between the two currencies differed by three or four times in favor of the deutschemark. Furthermore, the macroeconomic policies adopted by Germany stipulated an equalization of wages, pensions, and other entitlements for workers in East and West Germany, notwithstanding the fact that measured productivity of labor in East Germany was less than one-third that of West Germany.⁹

Closely linked to these questionable macroeconomic policies was an implicit goal of achieving economic convergence between the two German economies that was presumed to govern the reunification process: namely the requirement that East German per capita income should be raised to something approximating that of West Germany. In the RAND estimates of Korean unification costs cited below, we emphasize a rapid rise in North Korea's growth rate, but deliberately and explicitly eschew the equalization of per capita income between North and South Korea. Instead, we use as the standard for setting economic growth targets for Korean reunification the critical importance of raising dramatically the extremely low level of per capita GDP in North Korea, rather than focusing on the gap between per capita income in South and North Korea.

Achieving a high rate of growth of per capita income in North Korea is both more appropriate and more realistic as a reunification goal. This target should be sufficient to encourage North Korea's population to anticipate that its living standard will be significantly enhanced, as well as to motivate economic growth and macro-economic policies in the Korean reunification process. This goal is also distinctly more realistic than specifying gap-elimination and economic convergence between North and South as the reunification goal.¹⁰

Other Estimates of Re-Unification Costs

Many estimates have been made by many sources of the prospective investment costs of reunification in Korea. The estimates have been made by different scholars and different

⁹ See Wolf & Akramov, *op. cit.*; also see Hans-Werner Sinn, "Germany's Economic Unification and Assessment after Ten Years" NBER Working Paper #7586,(2000); and Charlotta Hyléen & Anna Järvväck, "Did Unification Affect the Germany Economy?," Lund University: Lund Macroeconomic Studies (2002).

¹⁰ See Wolf, Akramov, *op. cit.*, pp. 52-53.

institutions both within and outside South Korea. Their estimates involve different definitions of what constitutes reunification costs, different methods, and different time periods; hence, strict comparability among the estimates is elusive. In then-current dollars, the estimates cover an enormous range between \$400 billion and \$3.6 trillion!¹¹

Despite their diversity, the various models and computations underlying the range of cost estimates share a crucial and unwarranted assumption: namely, that unification implies and requires that parity between per capita income in North and South Korea be established as the underlying goal of reunification, or at least that the goal should be to arrive much closer to parity than the current per capita income ratio between North and South of about 1:20. This assumption of convergence in per capita is a mistaken inference from the German unification experience. In fact, the assumption is contravened by many precedents of tolerably “unified” countries with large income disparities within them while nonetheless effectively functioning and irrespective of persistent disparities. Examples include Italy’s Mezzogiorno, whose per capita income is perhaps one-third or one-quarter that of the more prosperous Piemonte region of Italy; China’s Hunan, Hubei, and Xinjiang provinces whose per capita income is perhaps one-eighth or one-tenth that of the wealthier provinces of Guangdong, Shanghai and Fujian; Indonesia (e.g., the Christian Ambonese and the Muslim Javanese); Belgium (the Flemish and the Walloons); East and West Ukraine; and in the United States, Mississippi, whose per capita income is perhaps one-quarter or one-fifth that of California, or the Ninth Ward in New Orleans where per capita income is perhaps one-tenth that of urban New Orleans). In sum, countries can be formally unified while often containing and maintaining wide disparities in income, social, and cultural circumstances.

The point of these examples is not to extenuate let alone extol the prevalence of major income disparities in functioning economies and polities. The point is simply to emphasize that countries can function tolerably well in the face of such disparities, and hence their existence should not be construed as a major obstacle to unification in the Korean case; nor is it necessary to presume parity in per capita income levels as a necessary condition for unification to occur in Korea.

¹¹ For these estimates see Wolf, Akramov, *op. cit.*, p. 49.

Defining and Measuring the Costs of Korean Unification

That there are major uncertainties surrounding estimation of reunification costs hardly needs repeating, yet it is so important as to require it. Some of these uncertainties are implied in the brief descriptions of the three reunification scenarios described earlier. To simplify the RAND estimates, we have focused on the capital costs of rapidly doubling North Korea's GDP, while acknowledging that even these costs are profoundly uncertain.¹²

To be sure, unification would entail other costs besides capital or investment costs, such as those costs relating to humanitarian relief, economic stabilization, regime replacement, political re-education, job training, administrative and bureaucratic restructuring, and social integration. These broader costs are even more uncertain than the capital costs, and they could exceed the capital costs if accumulated over a long period. Even so, substantial disparities in economic and social conditions between the northern and southern parts of Korea would still probably remain—disparities that a unified government would have to manage carefully to assure reasonable stability in the unified state.

However, this point should not be overdrawn. Indeed, it can be argued that management and containment of these broader types of costs should be viewed as tasks that typically are discharged by many governments in the course of their normal albeit pressing obligations and functions. As discussed above, there are many instances of countries and governments which function with tolerable effectiveness and stability notwithstanding deep social, political, cultural, and economic disparities and rifts within them.

In the RAND simulation model described in the 2005 book on which this paper draws, the estimated unification costs focus on the capital or investment costs. The model abandons a convergence of per capita income between North and South as the criterion in favor of an alternative (and we think more realistic) criterion: namely, doubling per capita income or per capita GDP in a short-term period of 4,5, or 6 years — admittedly a formidable and challenging objective. The underlying rationale for this criterion is that demonstration of significant improvement in economic conditions prevailing in the North coupled with a modicum of political-social opening and liberalized conditions in the North will enable a unified state to endure and progress. This criterion stands quite apart from anything approaching convergence in

¹² See Wolf, Akramov, *op. cit.*, especially pp. 29-44.

North-South income levels and notwithstanding the myriad difficulties and challenges that the unified state can be expected to encounter.

Adoption of a GDP doubling target rather than a target of convergence or bridging of the North-South gap is based on several important although arguable propositions that provide context for a simulation model itself. The first proposition is that palpable, locally-experienced improvements in living conditions resulting from a doubling of North Korea's GDP are more likely to affect the actions and behavior of North Korea's population than the more remote and impalpable level of living and income prevailing in the South. The second proposition is that the ingrained and conditioned insularity of the North's population may predispose it to avoid the risks of migrating to the South and instead to prefer remaining in the North provided that conditions continue to improve there along with a more liberalized and open social and political environment.

A third proposition is that the resulting population flows from North to South will be limited and manageable. This proposition reflects the basic economics underlying the widely differing living standards between North and South - - namely, the difference in their corresponding labor productivity (probably a difference in the neighborhood of ten-fold or more in favor of the South, reflecting presently the lower level of human capital capacity of the northern population. Were North Korean labor to migrate to the South, the wages it would receive would reflect the substantially lower productivity of North Korean labor rather than the higher labor productivity and higher consumption and wage levels prevailing in the South. Consequently, the drawing-power of South Korea's higher living standards is likely to be limited; and the experience of those who do migrate will tend to reinforce the fundamental economics of this situation.¹³

The model operates on the basis of several other key assumptions which affect the resulting cost estimates. These other assumptions include: first, that varying but appreciable resource savings can be garnered from a gradual "building-down" of the relatively large military establishment in North Korea including both active and reserve military forces and military industry; second, a variable incremental capital coefficient encompassing both high economic returns from some initial investments, and lower returns spread over a somewhat longer period

¹³ Indeed, the disenchantment experienced by many workers from the North who have actually migrated to the South in the past can be attributed to the fundamental difference in their productivity and corresponding wages.

from infrastructure and other capital investments; and third, variable progress in implementing institutional reform including the adoption and protection of property rights, the rule of law, transparency of regulatory measures, human rights, and freedom of the press, with their corresponding and varying effects on labor productivity, investment, and economic growth.

Table 1 summarizes selective estimates from the simulation model of the range of estimated investment costs of unification based on varying parameter values for the three preceding assumptions and assuming a four-year doubling time of North Korean GDP.

Table 1.
Estimates of Reunification Costs: Selected Simulation Results
(assuming 4-year doubling of North Korean GDP)

(1) Pre-unification N/S GDPs (%)	(2) Incremental Capital Coefficient	(3) Capital Build-Up Costs (billions '03 \$)	(4) Military Build-Down Savings (billions '03 \$)	(5) Institutional Reform Effectiveness (1-3)	(6) Reunification Costs (billions '03 \$)
.03	3	86	36	1	50
.04	3	114	42	2	186
.05	4	191	49	3	524
.05	5	239	48	3	667

The principal results derived from the 200 runs of the model are indicated in Table 1, and can be summarized as follows:

- The capital costs of rapidly doubling North Korean GDP span a range from an unlikely low of \$50 billion to something approaching \$700 billion in 2003 U.S. dollars; the mid-range of these investment costs of unification lies between \$330 billion and \$350 billion.
- The costs will tend toward the lower (higher) end of this range if the period of GDP doubling for the North is longer (shorter); the costs will be lower (higher) if North Korea's pre-unification GDP is lower (higher) relative to that of South Korea;
- The costs will be lower (higher) if the savings garnered from the military "build-down" are higher (lower);
- Spread over five years, the annual investment costs will be in the neighborhood of \$60-70 billion; for purposes of sizing comparisons, South Korea's current GDP is approximately \$450-500 billion annually.

It is worth considering various plausible ways of distributing these investment costs so that the burden on South Korea's economy and its prospects for continued economic growth are both lighter and more manageable. For example, a plausible distribution of the total investment costs of reunification might follow a pattern of burden-sharing along these lines:

- Provision of private capital from South Korea comprising 25 percent of total costs;
- Private capital from the rest of the world, including the United States, China, Japan, the European Union and Russia comprising 20 percent of the total;
- Public capital from South Korea amounting to 20 percent of the total;
- Public capital from the rest of the world (multilateral, bilateral, and international financial institutions) comprising 35 percent of total costs.

The private capital funds attributed to South Korea would amount to between \$15-18 billion annually, probably less in the early years and then rising in the later years. This funding might be expected to come from the several *chaebol*, some of which already have preliminary investment plans for consignment manufacturing, electronics investment and mining, as well as smaller firms. Other types of corporate investments -- might come from the private capital sources in the rest of the world as well as South Korea. The public capital investments from South Korea might be drawn from part of the \$215-plus billion of South Korea's foreign exchange reserves (as of the end of 2005). Drawings from these reserves might be particularly appropriate for social infrastructure investment including transportation and communication networks, as well as healthcare and education. Public capital funding from multilateral and bilateral sources might be invested in similar infrastructural investments.

Consequences and Implications of Reunification

Although the emphasis of this paper has been on the investment costs of reunification as well as the manifold uncertainties surrounding these cost estimates, attention should also be devoted to the manifold benefits that reunification would entail not only in the Korean peninsula but in the entire Asian region. It is perhaps surprising that while considerable effort and attention has been devoted in academic and some policy research circles to estimating the costs of reunification, surprisingly little attention and research has considered the substantial benefits that would ensue. The observations that follow concerning these benefits for the Asian region

should be construed as a brief checklist of considerations warranting much more attention than are provided here. For example, China's perennial unrequited resource transfers to North Korea for fuel, food, and other means of the North's sustenance have probably amounted to between \$.5-1 billion annually over the past decade.¹⁴ If and as unification on the Peninsula occurs, these resource transfers would be replaced by capital investments and corresponding yields. They would also likely be accompanied by the acceleration of economic growth and gainful employment within North Korea that would ease the pressure of potential refugee flows into China's Jilin province.

For South Korea itself, reunification would result in expanded trade and investment joined with social and political benefits including enhanced national pride and confidence. These benefits would represent appreciable and accumulating offsets to the aforementioned costs although less tangible and quantifiable than the latter.

For Japan, the corresponding economic benefits of expanded trade and investment would be accompanied by political and security gains, and a more transparent political environment in which issues like the abduction of Japanese citizens could be peacefully pursued, as well as a termination of the threat of possible weapons of mass destruction targeted on Japan.

And for the U.S., reunification would entail major security benefits in the form of controlled and then terminated WMD programs in the North and elimination of the threat of weapons proliferation to stateless terrorist organizations. Reunification would be linked to further evolution in the U.S. – Korean alliance along with probable reductions in U.S. forces based in the Peninsula. More generally, expanded economic transactions between the U.S. and unified Korea could be expected to replace the abnormal security hazards and costs imposed on the U.S. through a divided and unpredictable Korea.

Finally, on the basis of an expanded "balance sheet" of gains and benefits matched against costs and risks, the U.S. in concert with an equivalent role of the other principal regional powers, should initiate a dialogue in various regional fora to discuss and highlight the brighter prospects that might be opened up for the region as a consequence of reunification of North and South Korea.

¹⁴ See Wolf, Akramov, *op. cit.*, pp. 16-19.