ECONOMIC IMPLICATIONS OF A "BOLD SWITCHOVER" IN DPRK SECURITY POLICY:

POTENTIALITIES FOR A STILL-SOCIALIST DPRK ECONOMIC POLICY, INTERNATIONAL FINANCIAL ASSISTANCE, AND NORTH KOREAN ECONOMIC PERFORMANCE

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*This paper is an extended version of a study published in 2005 in the *Korean Journal of Defense Analysis*.

** I would like to thank Ms. Assia Dosseva of AEI for her research assistance and her data analysis in preparation of this paper. Thanks also go to David Asher, William Newcomb, Marcus Noland, Charles Wolf Jr., and Benjamin Zycher for penetrating comments and constructive criticisms on an earlier draft. Any remaining errors are my own.

EXECUTIVE SUMMARY

This paper examines the potential economic ramifications that would result from a decision by the DPRK to shift from its current "military-first politics" to "defense sufficiency."

MAIN ARGUMENT

This study points to three basic findings:

- North Korea's recent dismal economic performance cannot be explained simply in terms of the generic inefficiencies of Communist economies, but rather must be understood as the consequence of Pyongyang's particular and peculiar interpretation of "Socialism with Korean characteristics," in which hyper-militarization of the economy and international extortion based on military menace figure centrally.
- Judging by structural growth equations of international economic patterns, North Korea's economic performance would likely improve from a "bold switchover" in military and security policies.
- Considerable new sources of Western aid would be available for assisting in the economic transition for a genuine "bold switchover" in DPRK security policy-- even if Pyongyang continued to embrace Communist central economic planning; and still more international public aid might be found to support a North Korean shift to market-oriented economic reforms.

POLICY IMPLICATIONS

- Economic reasoning may bring new perspectives to old international problems.
- Working to convince North Korean leaders to enact a "bold switchover" would have beneficial results not only for the region, but also for North Korea itself.

Background and Introduction

Ever since its founding in 1948, the Democratic People's Republic of Korea (DPRK, aka North Korea) has maintained an aggressive and bellicose international security posture. Today, nearly a decade and a half after the end of the Cold War, North Korea's external defense and security policies look arguably more extreme and anomalous than ever—in the sense of being more distant from evolving international security norms than ever before.

The particulars of DPRK "extreme" security policies and practices are well known. But to recap, these include:

- *Hyper-militarization of society, economy, and policy.* This reality is reflected in the regime's current top political slogan, "military-first politics" [*songun chongchi*]. But the astonishingly high priority that the defense sector now enjoys is nothing new. Although reliable statistics on the modern DPRK are indeed scant, there are strong indications that the DPRK has been running its society and economy on something like a full war footing since the early 1970s--or even earlier.[1] Pyongyang's own data suggest the government was fielding a military force of over 1.2 million in the late 1980s—proportionately, a mobilization level parallel to that of the United States in 1943.[2]
- *Maintenance and augmentation of chemical and biological weaponry capabilities.* At a time when almost all of the world's government have renounced biological and chemical warfare—and when most of the governments with bio-chem war-fighting capabilities have dramatically reduced or entirely eliminated those arsenals—Pyongyang appears to be adding to its stockpiles, and perfecting its bio-chem delivery systems.[3]
- *Ballistic missile development.* Despite its dire economic straits since the end of the Cold War, North Korea has been deeply committed to developing and improving its ballistic missile program. Its launch of the Taepo Dong in August 1998 signified that

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[1] For an analysis of these data, see Nicholas Eberstadt, *Korea Approaches Reunification*, (Armonk, NY: M.E. Sharpe & Co., 1995), esp. Ch. 1.

[2] Nicholas Eberstadt and Judith Banister, "Military Buildup in the DPRK: Some New Indications from North Korean Data", *Asian Survey*, vol. 31, no. 11 (November 1991), pp. 1095-1115.

[3] For more details on the DPRK program and other past or present programs, see Monterey Institute for International Studies, Center for Nonproliferation Studies, Chemical and Biological Weapons Resource Page, available electronically at http://cns.miis.edu/research/cbw/possess.htm; accessed September 20, 2004.

North Korea was one of only six states with demonstrated multi-stage ballistic missile capabilities. Although Pyongyang has not launched any multi-stage rocket since the 1998 test, published reports suggest that research and development work on the long-range missile program continues robustly.[4]

- *Relentless overt and covert nuclear weapon development programs.* Pyongyang's persistent drive to acquire the means of producing nuclear weaponry, irrespective of treaty obligations or other promises is, of course, the matter at the heart of the ongoing North Korean nuclear drama. Today, having withdrawn from the Nuclear Nonproliferation Treaty (the only state ever to do so), the DPRK is apparently pressing forward with plutonium reprocessing for what it terms a "war deterrent". It is also evidently pushing forward with a now-notorious "second-track" HEU program for producing weapons-grade nuclear materials.
- *Bared-fang, white-knuckle international confrontation diplomacy.* Pyongyang adopts an almost singularly vicious language of threat in its dealings with its neighbors and their allies. Pyongyang's diplomats first warned of turning Seoul into "a sea of fire" in 1994—but the warning has subsequently been repeated on numerous occasions. Japan has likewise been warned it might suffer a "catastrophe from which it would not soon recover"; since 1998, Washington has repeated heard variations on that same theme.[5]
- *Continuing unconditional stance on unification with South Korea.* Unlike the example of China's unification policy—where a "one country/two systems" formula is still represented in the stark differences between political and economic rules in Hong Kong and on the Mainland—the North Korean government shows no indication that it would ever accept anything less than a complete absorption of South Korea under Kim family rule and DPRK-style socialism. The North Korean official press and "unofficial" media [*viz.*, NDFSK] continue to imply, or sometimes to insist, that the ROK government—even under the present constitutional democratic structure, even with its current progressive President—is an illegitimate colonial

[4] Cf. Joseph Bermudez Jr., "North Korea deploys new missiles", *Jane's Defence Weekly*, August 2, 2004.
[5] For example: Korean Central News Agency (KCNA), "KPA will answer U.S. aggression forces' challenge with annihilating blow = Statement of KPA general staff spokesman =", December 2, 1998; accessed electronically at http://www.kcna.co.jp, January 13, 2005.

> police state that must be thoroughly extirpated so that the suppressed population of the South can join under the government in the North that it adores.[6]

The DPRK's provocative and extraordinarily militarized external policies have alarmed all its neighbors. Yet while "exporting" strategic insecurity, these have also apparently "imported" economic failure. The DPRK economy, alone among the economies of East Asia, has suffered prolonged economic retrogression since the end of the Cold War.

The most vivid sign of that failure, of course, was the North Korean famine of the 1990s—the only-ever famine to be visited upon a literate urbanized population in peacetime. North Korea's economic performance has also been miserable by the metric of commercial exports (one of the few economic indicators that can be traced with relative confidence). Between 1990 and 2004, reported world exports of merchandise more than doubled (in current US dollars)—but DPRK commercial merchandise exports are estimated to have *dropped* by about 50%.[7] North Korea's confrontational external posture, in short, has been coincident with a regimen of decreasing economic self-sufficiency—a declining ability to finance state operations and state survival as "normal nations" do.

Given all this, we may ask: what would be the economic implications of a "bold switchover" in North Korean security policy (to echo language Pyongyang has used in a call for a redirected US policy toward Pyongyang)?

Let us specify the question:

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[6] Thus, for example, the following pronouncements from the NDFSK's "Chief of Pyongyang Mission" in June 2003:

> Reverence for Kim Jong Il is daily mounting in South Korea because the South Korean people's attraction and worship for him…..
> The vigorous anti-U.S. struggle of the South Korean people is an eruption of national self-respect….
> [W]e should follow the road of Songun [military first politics] indicated by Kim Jong Il…. Songun might is a powerful war deterrent force…enough to decisively overpower the U.S. in a showdown with the U.S.

KCNA, "Chief of Pyongyang Mission of NDFSK interviewed by reporters", June 14, 2003; accessed electronically at http://www.kcna.co.jp, January 13, 2005.

[7] For data on global export trends, see WTO Statistical Database, http://stat.wto.org/StatisticalProgram/WSDBStatProgramHome.aspx?Language=E; for DPRK export trends, see Figure 1, below.

- Let us assume that the DPRK remains an independent Socialist polity, committed to central economic planning and dictatorship of the proletariat and to a continuing partition of the Korean peninsula between DPRK and ROK.
- Let us further stipulate that Leninist governance continues to prevail in the DPRK—i.e., Western criticisms concerning human rights abuses, political prisons *et alia* remain un-addressed or unresolved.
- And let us for the moment maintain an agnostic stance on the question of whether the "bold switchover" is implemented by Kim Jong Il and his lineage, or some alternative leadership faction--let us simply assume, at least for the moment, a change in "regime behavior" without stipulating a necessary concomitant change in "regime personnel".

What would such a "switchover" augur for the new-thinking (but still independent and socialist) regime's economic polices; its prospects for attracting economic support from the outside world; and its chances for embarking on a path of economically self-sustaining growth?

In the following obviously hypothetical exercise, we will assume that the DPRK "bold switchover" amounts to adoption of a doctrine of "defense self-sufficiency". Broadly speaking, this would mean that North Korea would maintain a significant (but not grotesque) conventional army, and would hold on to its artillery positions near the DMZ, but that it would:

- relinquish its nuclear ambitions in a credible and permanent manner
- scrap its biological, chemical, and ballistic programs in a likewise convincing and transparent fashion
- substantially demobilize its conventional military forces and the allied defense industries that sustain it
- resolve the existing obstacles blocking the improvement of DPRK-Japanese relations (i.e., Pyongyang's involvement in abduction of Japanese citizens, international narcotics trafficking, and WMD)
- move toward a position of genuine "co-existence" with South Korea, recognizing the legitimacy and the right to exist of the Republic of Korea and the right of the ROK to conduct its own defensive security policies (including defensive security alliances)
- and correlatively, acknowledge the legitimacy of the ROK government's right to enter into a defensive military alliance with the United States (and Japan).

- What is being assumed in this thought-experiment might be described as a systemic shift by the DPRK to something like "ordinary Stalinism".[8] Although there is no perfect historical analogy for the alternate DPRK system being posited here, the closest real-world parallel might be something like the Yugoslavia of the early Tito era: that is to say, after the "split", but before the emergence of reformist economic experimentation and accession to OECD.

In the next few pages, we will make a number of points about the hypothetical economic implications of such a "bold switchover":

1) Such a switch would make possible the redress of many of the policies that have accounted for North Korea's dismal economic performance over the past generation.
2) Such a switch would seem to offer the potential for a substantial improvement in North Korea's capacity for export revenue generation (a key element of state financial sustainability) and also in per capita output levels
3) Such a switch would make set the stage for an upsurge of external aid for the DPRK from Western governmental and NGO sources.
4) Such a switch could be consonant with a package of "reform socialist" measures that could result in the sorts of enhanced economic productivity indicated in conjecture 2).

Why Has The DPRK Economy Performed So Badly Over The Past Generation?

The DPRK has not always been an economic basket case. Though not everyone may recall this, North Korea's level of per capita exports was apparently higher than South Korea's until about 1970, and per capita GNP in the two Koreas as of 1975 was judged to be almost exactly the same by, among other assessments, a CIA study released in 1978.[9] Between 1975 and 2003, South Korea's per capita output nearly quintupled, and its volume of merchandise exports (adjusting for inflation) rose by a factor of 16.[10] By contrast, North Korea's inflation-adjusted commercial merchandise exports actually *declined* between 1975 and 2003—and its per capita level of real commercial

[8] To borrow Ronald Tiersky's notion. Cf. Ronald Tiersky, *Ordinary Stalinism: Democratic Centralism and the Question of Communist Political Development*, (Boston: Allen & Unwin, 1985). "Ordinary Stalinism" is notionally contraposed by Tiersky against the "high Stalinism" of the USSR in the Stalin era.

[9] CIA, *Korea: The Economic Race between the North and the South*, (Washington, DC: National Foreign Assessment Center, January 1978), ER 78-10078.

[10] Calculations derived from WTO statistics databases, World Development Indicators 2005 database, and US Bureau of the Census.

merchandise exports may have fallen by nearly *two thirds*.[11] It is anyone's guess how DPRK per capita GDP for 2003 compares to 1975; reliable and widely accepted estimates of the quantities are simply not available today (despite some attempts by outsiders to offer up figures for North Korean output). We cannot discount the possibility that North Korea's per capita GDP is actually lower today than it was a generation ago.

These discrepant results from divided Korea cannot be attributed to differences in culture, history or ethnic background for the two populations in question—for the very same people inhabit both sides of the DMZ. The strikingly discordant performance of the North and South Korean economies over the past generation should prompt us to ask just how a people so obviously capable of economic success were organized and managed into "achieving" catastrophic economic failure in the DPRK.

One immediate hypothesis might be that North Korea was subject to Communist central economic planning—and that central economic planning always fails. Such an answer might seem plausible in the aftermath of the collapse of the Soviet empire—but the suggestion is challenged by both theory and fact.

In terms of theory, Nobel Economics Laureate Friedrich Hayek and his mentor Ludwig von Mises demonstrated in the 1920s and 1930s that central planning systems suffered from an irresolvable "socialist calculation problem"—an inability to determine scarcity relationships for allocating resources efficiently[12]—but the Austrian school's insight merely consigned centrally planned systems to mounting inefficiencies and unnecessarily heightened costs—not to sharp and prolonged economic decline. [13]

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[11] Nicholas Eberstadt, "The Persistence of North Korea", *Policy Review*, no. 127 (October/November 2004).

[12] Cf. Ludwig von Mises, *Socialism*, (New Haven, CT: Yale University Press, 1951); F.A. Hayek, *The Fatal Conceit*, (Chicago: University of Chicago Press, 1989).

[13] Charles Wolf has offered the important cautionary qualification that the Austrian School's conception of the "socialist calculation problem" would comport with the prospect of *steadily mounting costs* from socialist planning—the cumulative accretion of which, he notes, could result in eventual economic decline in the centrally planned economy. Without attempting to discuss this conjecture rigorously, one may certainly concede that the "socialist calculation problem" could be consistent with absolute economic decline (i.e., reduction in per capita output) if and when the efficiency losses from socialist planning exceeded the pace of exogenous improvements in technical efficiency (this in the simplest case of a zero net savings/zero net investment, full-factor-utilization model). A more rigorous exploration of this conjecture would have to deal more complex considerations, among these the relationship between schedule of "efficiency losses" in the planned economy and its schedules of investment and savings—and

From the empirical standpoint, estimates by eminent Western economic historians suggest that the Soviet Bloc economies and Mao-era China did in fact experience considerable and long-term material advance[14]—even if their "total factor productivity" suffered, command mobilization and technical innovation forced output up for many successive decades.

North Korea's conspicuous economic failure, then, must be explained not in the failings of the Korean population, or even in terms of the generic economic shortcomings of command socialism, but instead in terms of the particularities of "socialism with Korean characteristics" as it evolved in the DPRK over the past generation—what North Korean officialdom terms "our own style of socialism" [*urisik sahoejuui*].

What are the particular factors that have contributed to modern North Korea's disastrous economic record? We can identify some of the more obvious elements succinctly:

a) *Breakdown of the DPRK statistical system.* Since the early 1970s, there have been continuing signs that the DPRK statistical apparatus was becoming increasingly incapable of transmitting accurate and comprehensive information to the country's decision-makers—a critical danger for any centrally planned system.[15]

b) *Breakdown of the DPRK central planning apparatus.* The North Korean economic planning system remains opaque to outsiders, but there are indications that the process has become increasingly compartmentalized, irregular and *ad hoc* since the early 1970s—and that it may have ceased to function in a systematic, long-range manner altogether after the end of the last announced plan (1993). Professor

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to the interplay between truly exogenous technical efficiency improvements and efficiency improvements as embodied in the planned economy's capital stock.

[14] Cf. Angus Maddison, *Monitoring The World Economy: 1820-1992* , (Paris: OECD, 1995). By Maddison's estimates, for example, per capita output in the USSR rose from $1386 (1990 Geary-Khamis Dollars) in 1929 to $7032 in 1989—a five-fold increase over six decades, implying an average growth rate of 2.7 percent per year over that period. By Maddison's estimates, even Maoist China managed to double its per capita output between 1950 and 1975, rising from $614 to $1250, implying a long-term per capita growth rate of nearly 3 percent per annum.

[15] Pyongyang's 1999 "Law on Socialist Economic Planning" can be seen as an implicit acknowledgement that the statistical apparatus necessary for centrally planning had effectively broken down. For details of earlier signs of trouble in the DPRK statistical system, see Nicholas Eberstadt, *Korea Approaches Unification*, (Armonk, NY: M.E.Sharpe & Co., 1995), Ch. 1.

Mitsuhiko Kimura terms the current North Korean approach as "Planning without Plans"[16].

c) *Hyper-militarization of the national economy.* If North Korea is operating on something like a total-war footing, it is allocating an enormous share of its resources to the defense sector and the allied defense industries. Under such circumstances, there is likely to be an extraordinary and continuing drain of potentially productive resources into activities that produce little or no economic "value added". A total-war footing may have limited long-term economic consequences if the mobilization is for relatively short period periods of time[17]--but North Korea's hyper-militarization has been in progress for over three decades.

d) *Relentless war against the consumer sector.* All Soviet-type economies have unnaturally small consumer sectors, but North Korea's tiny consumer sector is strangely compressed even by the standards of Stalinist planning. (Even before the hyper-militarization of the 1970s, the estimated share of the consumer sector within the DPRK economy was much lower than for counterpart economies within the Soviet bloc.[18]) Extreme suppression of the consumer sector inhibits productivity and growth by reducing the consumption of goods and services that may contribute to "human capital" and by eliminating the sort of "inducement goods" whose attractiveness would otherwise be motivating workers to earn and save money.

e) *Demonetization of the national economy.* Complex modern economies cannot function efficiently on a barter basis. Nevertheless, money has played an amazingly limited role in the DPRK's economic activities over the past generation. In the late 1980s, the DPRK's wage bill apparently amounted to only a third of its "net material product"—and therefore, to far less than a third of its GNP.[19] Even for a Communist economy, this was a remarkably low ratio—and that ratio presumably declined still further over the 1990s. With the July 2002 economic measures, Pyongyang has effectively re-introduced money into its consumer sector—a welcome event—but that sector accounts for only a small share of the overall national economy.

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[16] M. Kimura, "A Planned Economy Without Planning: Su-ryong's North Korea," Discussion Paper, F-081, Faculty of Economics, Tezukayama University, 1994.

[17] Cf. Alan S. Milward, *War, Economy, Society: 1939-1945*, (Berkeley, CA: University of California Press, 1977).

[18] Nicholas Eberstadt, "Policy And Economic Performance in Divided Korea, 1945-1995", unpublished Ph.D. dissertation, Harvard University, 1996.

[19] *Ibid.*

f) *Lack of financial intermediation.* As has by now been well established in the economics literature, financial intermediation (banking, credit markets, etc.) plays a direct and positive role in the growth and development of national economies. North Korea has virtually no officially approved mechanisms for such intermediation in its domestic economy.

g) *Defiant nonpayment of international debts.* The DPRK has been in virtual default on its Western loans since the mid-1970s. Although many other debtor governments from low-income areas have experienced performance problems on their loans over the past generation, Pyongyang has adopted an almost uniquely pugnacious and hostile posture of non-repayment toward its creditors. Consequently, the DPRK's international credit rating is approximately zero.

h) *Allergy to trade with "imperialist" countries.* Despite the huge and steadily expanding opportunities to earn export revenues from the import markets of the world's most advanced economies, North Korea has made conspicuously little headway—or effort—to penetrate these lucrative markets. In fact, inflation adjusted exports to the advanced Western economies were *lower* in 2000 than in 1980 (even including inter-Korean trade in the tally).[20] This strikingly poor record of performance reflects the content of North Korea's trade policies—an approach largely informed by Pyongyang's continuing apprehension about what it terms "ideological and cultural infiltration".

i) *Exceptionally inhospitable "institutional" landscape.* Although Soviet-type economies are always characterized by a problematic "business climate", the North Korean setting is perhaps uniquely unfavorable for spontaneous economic activity or independent enterprise. Some of the factors worth mentioning: 1) pervasive restrictions against and penalties on private initiative for both individuals and enterprise (recent "reforms" notwithstanding); 2) highly opaque and unpredictable application of existing economic measures, regulations and laws toward DPRK citizens; 3) often severe extra-legal intervention in business activities of the domestic population; 4) unattractive economic legislation governing foreign enterprises; 5) lack of consistency between existing legislation and actual government decisions concerning foreign business activities; and 6) pervasive government opposition to the generation and/or repatriation of profits by foreign businesses.

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[20] "The Persistence of North Korea", *loc. Cit.*

When one considers this imposing array of economically wasteful (or positively destructive) policies and practices, the explanation for North Korea's prolonged and severe economic decline becomes clear enough. North Korea's political economy is the proximate explanation for the country's current, precarious economic straits—no additional external or internal factors need be adduced to explain this dismal record. [21]

The converse of this proposition, of course, is that *relieving Pyongyang's current regimen of wasteful and destructive economic policies and practices* would be the key measure in prompting an economic revitalization in North Korea. And when one considers the means by which this straitjacket of economically suffocating policies might be relaxed while positing the preservation of an independent socialist state in North Korea, one will see that a most parsimonious way to affect such a broad change would be to enact a "bold switchover" in DPRK security policies and practices.

A "bold switchover" would have both immediate and indirect domestic and international economic implications for the DPRK—the net impact of which would enhance the productive potential, the trade performance, and the financial stability of the North Korean state over the short run and the longer term.

- A "bold switchover" in DPRK security policy, to begin, would permit an enormous reallocation of resources—manpower and capital—from military purposes to potentially productive civilian enterprises. Given the scale of the possible redirection of resources in North Korea under a "defense sufficiency" doctrine, one could imagine a truly significant initial "supply side" stimulus.
- The "bold switchover", furthermore, would generate pressures that inevitably militate for relaxation of the other constraints of perverse policies and practices currently shackling the DPRK economy. Most important of all of these would be the consequences of the end of North Korea's "international military extortion" approach to international fundraising. Without the instruments of international military menace that Pyongyang for extracting aid and/or appeasement payments from the international community, Pyongyang would perforce be obliged to move toward a more internationally open economic orientation, with all that such a change would imply.

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21 For additional analysis and quantitative assessments regarding the failure of the North Korean economy, see the important work by Marcus Noland of the Institute for International Economics, especially *Avoiding The Apocalypse: The Future of the Two Koreas*, (Washington, DC: IIE, 2000).

- There would of course be a lag between the "bold switchover" and the economic supply-side responses that such a shift in security policy would set in motion. In economic terms, that lag-period would be the time of maximum vulnerability for the domestic economy (and as far as economic pressures were concerned, the time of maximum pressure on the "new direction" DPRK government). But these economic pressures could be mitigated by new inflows of external aid—and as we shall indicate in the next pages, there is reason to expect that a "bold switchover" in DPRK security policy would be met a major response from the international aid-giving community, at least for the politically critical transitional years.

Potential Economic Performance in a Communist "Bold Switchover" North Korea: Quantitative Indications from International and Historic Patterns

What sort of economic stimulus might the DPRK enjoy if it were able to maintain political order after a "bold switchover", and at the same time to adhere more closely to the performance patterns exemplified in traditional Communist—or "reform socialist"—or "post-communist" states?

While the question is in some sense fundamentally speculative, we can cast light upon it by examining international "patterns of development".

At this point a wellspring of quantitative data is available on development patterns in Communist and non-Communist countries over the entire post-World War II era. We can use these data to describe the sorts of trade and economic performance a country like North Korea would be predicted to exhibit under a traditional Soviet-type Communist economy, and under a "reform socialist" or "post-Communist" regimen.

The approach we use here is known in the contemporary economics literature as "structural growth equations", which try to predict variations in output on the basis of other cross-sectional economic and social relationships across countries.[22]

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[22] This approach is associated today most closely with the work of Robert J. Barro of Harvard University (*viz.*, R. J. Barro, 'Economic Growth in a Cross Section of Countries', *Quarterly Journal of Economics*, vol. 106, no. 2 (1991), pp. 407-43.) Earlier research on international structural development patterns would include the work of Hollis B. Chenery. See in particular Hollis B. Chenery and Moises Syrquin, *Patterns of Development: 1950-1970*, (New York: Oxford University Press, 1975).

In the following exercise, we use the World Bank's *World Development Indicators 2003* (WDI 2003) as our database for estimating the relationships that a more "normal" DPRK might exhibit.

Because economic data concerning the DPRK are so scarce, we will not even attempt to construct "structural growth equations" that require any estimates of North Korean income levels, capital stock accumulations, ratios of exports or exports to GNP, average years of schooling attained etc—the conventional sorts of variables used on the "x" side of such equations. Instead, we build our "structural growth equations" on the basis of data that we can be more confident about in the case of North Korea: namely, illiteracy rates, urbanization rates, life expectancy levels, and a government's status as a never-Communist, traditional Communist, "reform socialist" or post-Communist regime.

Through other research, we have indicated the likely bounds of DPRK levels of illiteracy, urbanization, and life expectancy.[23] As it happens, all of these quantities are directly related to economic productivity—and all of them provide a good predictive base for estimating any unknown country's level of exports per capita or economic output per capita.[24]

In the following regressions, we specified the relationship between our "independent variables"--- illiteracy, urbanization, life expectancy and Communist governance status—and our "dependent variables"--per capita exports (current US dollars) and per capita GNP (PPP adjusted current dollars)—as a "semi-logarithmic" relationship. That is to say, we compared absolute differences in reported illiteracy (for example) against the natural logarithm of per capita exports (for example) to attempt to trace out a relationship (through "ordinary least squares" regressions). [25]

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[23] Cf. *The Population of North Korea, loc. cit;* "Policy and Performance in Divided Korea", loc. cit; Nicholas Eberstadt, "Disparities in Socio-economic Development in Divided Korea", *Asian Survey*, vol. 40, no. 6 (November/December 2000), pp. 867-893.

[24] Literacy levels, for example, bear upon a population's capabilities in productive employment. Urbanization levels tell us about the proportion of population that lives in non-rural areas—a broad indication of the level of productivity that has been attained by local agriculture, and more generally, about the level of complexity and differentiation in a population's labor force. Life expectancy levels tell us about the health and thus the productive potential ("human capital") in a population.

[25] The reason for the "semi-log" specification is that the semi-log curve happens more or less to match the patterns that have been observed internationally between illiteracy, urbanization, and life expectancy levels on the one hand and per capita output levels on the other. (Our semi-log functions also allow us to estimate

In our regression analysis, we traced the international relationship in 1980 and 2000 between the following variables:

ln_percapexp:	per capita exports in current dollars (in natural log)
ln_percapgni:	per capita gross national product ppp current (nat log)
ILLIT:	illiteracy rate
URBANIZATION RATE:	urbanization rate
LIFEEXPBIRTH:	life expectancy at birth
*ILLIT*URBAN*:	illiteracy rate multiplied by urbanization rate
*LE*ILLIT*URB:*	illit. rate times urbanization rate times life expectancy
COMMUNIST:	communist government variable (a "dummy variable"—"0" for no, "1" for yes)

ILLIT*URBAN and LE*ILLIT*URB were introduced to determine whether "additive effects" occurred from the interaction of those variables.

Since we were measuring international relationships in both 1980 and 2000, the COMMUNIST variable was actually measuring several different sorts of Communist governance. Given the nature of international Communism in 1980, the 1980 soundings would have been examining more or less "traditional" Communist states—i.e., Communist governments before "reform socialist" tendencies had progressed far in any of the Marxist-Leninist economies. By 2000, on the other hand, virtually all the

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particular "elasticities": the predicted percentage impact on per capita or per capita GNP for a point change in literacy, urbanization, etc.)

governments denoted as COMMUNIST were actually "reform socialist" (China, Vietnam) or post-Communist (like the states of the former Soviet bloc). This distinction allows us to look at the impact on economic performance of "traditional" Communism, on the one hand, and "reform socialist" or post-Communist governance on the other.

All in all, we present results for sixteen regressions—eight equations each for the years 1980 and 2000, half of which examine per capita exports and half per capita GNP. The regressions, which use World Bank data, drew from the *World Development Indicators 2003* CD-ROM, compares 92 countries in the year 1980, and 118 countries in 2000.

The results of our regression analysis are presented in Tables 1-4. [SEE TABLES 1 THROUGH 4] These numbers may call for a bit of interpretation and explication.

TABLE 1
The international relationship between per capita exports and other developmental indicators for the year 1980 as revealed by "Structural equations"

Dependent Variable = ln_percapexp 1980				
	Equation 1	**Equation 2**	**Equation 3**	**Equation 4**
N	**92**	**92**	**92**	**92**
ADJUSTED R- SQUARED	**0.54**	**0.54**	**0.58**	**0.60**
CONSTANT	**4.20 (8.68) *****	**4.33 (8.80)*****	**5.21 (9.43)*****	**2.37 (1.19)**
ILLIT. RATE	**-0.01 (-1.80)**	**-0.01 (-2.04)***	**-0.04 (-3.71)****	**-0.02 (-1.60)**
URBANIZATION RATE	**0.05 (6.68)*****	**0.04 (6.53)*****	**0.02 (2.45)***	**0.02 (1.72)**
COMMUNIST	**N/A**	**-0.88 (-1.30)**	**-0.72 (-1.11)**	**-0.84 (-1.30)**
ILLIT.*URBAN	**N/A**	**N/A**	**0.0008 (3.04)****	**N/A**
LIFEEXPBIRTH	**N/A**	**N/A**	**N/A**	**0.04 (1.51)**
LE*ILLIT*URB	**N/A**	**N/A**	**N/A**	**0.00001 (2.90)****

Notes: ln=Natural logarithm; numbers in parenthesis are "t-statistics". * = significant at $p < 0.05$; ** = significant at $p < 0.01$; *** = significant at $p < 0.001$
Source: World Development Indicators 2003 CD-ROM.

TABLE 2
The international relationship between per capita exports and other developmental indicators for the year 2000 as revealed by "Structural equations"

Dependent Variable = ln_percapexp 2000				
	Equation 9	**Equation 10**	**Equation 11**	**Equation 12**
N	**118**	**118**	**118**	**118**
ADJUSTED R- SQUARED	**0.69**	**0.70**	**0.70**	**0.72**
CONSTANT	**4.55 (13.66)*** **	**4.86 (13.68)*** **	**4.81 (12.03)*** **	**2.36 (3.09)** **
ILLIT. RATE	**-0.03 (-6.15)*** **	**-0.04 (-6.62)*** **	**-0.03 (-3.17)** **	**-0.02 (-2.42)***
URBANIZATION RATE	**0.04 (9.07)*** **	**0.04 (8.65)*** **	**0.04 (6.72)*** **	**0.03 (5.33)*** **
COMMUNIST	**N/A**	**-0.58 (-2.22)***	**-0.59 (-2.22)***	**-0.65 (-2.56)***
ILLIT.*URBAN	**N/A**	**N/A**	**-0.00006 (-0.24)**	**N/A**
LIFEEXPBIRTH	**N/A**	**N/A**	**N/A**	**0.04 (3.86)** **
LE*ILLIT*URB	**N/A**	**N/A**	**N/A**	**NEGL. (-0.35)**

Notes: ln=Natural logarithm; numbers in parenthesis are "t-statistics". * = significant at $p < 0.05$; ** = significant at $p < 0.01$; *** = significant at $p < 0.001$
Source: World Development Indicators 2003 CD-ROM.

TABLE 3
The international relationship between per capita Gross National Income and other developmental indicators for the year 1980 as revealed by "Structural equations"

Dependent Variable = ln_percapgni 1980				
	Equation 5	**Equation 6**	**Equation 7**	**Equation 8**
N	**92**	**92**	**92**	**92**
ADJUSTED R- SQUARED	**0.68**	**0.68**	**0.69**	**0.72**
CONSTANT	**6.82** **(28.96)*** **	**6.91** **(28.67)*** **	**7.17** **(25.64)*** **	**4.51** **(4.67)*** **
ILLIT. RATE	**-0.01** **(-3.62)** **	**-0.01** **(-3.81)** **	**-0.02** **(-3.68)** **	**-0.01** **(-0.96)**
URBANIZATION RATE	**0.03** **(7.94)*** **	**0.03** **(7.78)*** **	**0.02** **(4.10)*** **	**0.01** **(2.97)** **
COMMUNIST	**N/A**	**-0.41** **(-1.24)**	**-0.37** **(-1.12)**	**-0.49** **(-1.57)**
ILLIT.*URBAN	**N/A**	**N/A**	**-0.0002** **(-1.74)**	**N/A**
LIFEEXPBIRTH	**N/A**	**N/A**	**N/A**	**0.04** **(2.95)** **
LE*ILLIT*URB	**N/A**	**N/A**	**N/A**	**NEGL.** **(1.61)**

Notes: ln=Natural logarithm; numbers in parenthesis are "t-statistics". * = significant at $p < 0.05$; ** = significant at $p < 0.01$; *** = significant at $p < 0.001$
Source: World Development Indicators 2003 CD-ROM.

TABLE 4
The international relationship between per capita Gross National Income and other developmental indicators for the year 2000 as revealed by "Structural equations"

Dependent Variable = ln_percapgni 2000				
	Equation 13	**Equation 14**	**Equation 15**	**Equation 16**
N	**118**	**118**	**118**	**118**
ADJUSTED R- SQUARED	**0.64**	**0.64**	**0.64**	**0.71**
CONSTANT	**7.47 (36.66)*** **	**7.57 (34.32)*** **	**7.41 (30.08)*** **	**5.46 (12.12)*** **
ILLIT. RATE	**-0.02 (-5.96)*** **	**-0.02 (-5.94)*** **	**-0.01 (-1.91)**	**-0.01 (-1.34)**
URBANIZATION RATE	**0.02 (7.78)*** **	**0.02 (7.44)*** **	**0.03 (6.55)*** **	**0.02 (4.47)*** **
COMMUNIST	**N/A**	**-0.18 (-1.14)**	**-0.22 (-1.37)**	**-0.26 (-1.75)**
ILLIT.*URBAN	**N/A**	**N/A**	**-0.0002 (-1.34)**	**N/A**
LIFEEXPBIRTH	**N/A**	**N/A**	**N/A**	**0.04 (5.42)*** **
LE*ILLIT*URB	**N/A**	**N/A**	**N/A**	**NEGL. (-0.95)**

Notes: ln=Natural logarithm; numbers in parenthesis are "t-statistics". * = significant at $p < 0.05$; ** = significant at $p < 0.01$; *** = significant at $p < 0.001$
Source: World Development Indicators2003 CD-ROM.

All in all, the results of our regressions are quite robust—meaning that the relationships they describe tend to be strong and stable, with a fair degree of "statistical significance" (i.e., unlikely to have been generated by pure chance). The "structural growth equations" for predicting per capita exports generated "R-Squareds" of 0.54 to 0.60 for 1980 and 0.69 to 0.72 for 2000—meaning that our selected variables could trace over half of the observed difference between countries in per capita export in 1980, and over two thirds of the observed per capita export differences in 2000. For our equations predicting per capita GNP (i.e., "gross national income"), the corresponding range of "R-Squareds" was 0.68 to 0.72 for 1980 and 0.64 to 0.71 for 2000—meaning that our selected dependent variables could account for about two-thirds of the observed differences between countries in per capita GNP in both years.

As might have been expected, life expectancy levels and urbanization rates tracked positively with per capita exports and per capita income, while illiteracy rates correlated negatively with these measures of economic performance. Generally speaking, these relationships were "highly significant" in a statistical sense—meaning that they were extremely unlikely to have been achieved by pure chance.[26] The "dummy variable" for Communist governance only met the test of "significance" some of the time (3 out of 11 equations in which it appeared); even so, these results demonstrated a notable consistency.

In our various equations for per capita exports, a 1-point increase in illiteracy corresponded with about a 1% reduction in per capita exports in 1980, and about a 3% reduction in 2000. A 1-point increase in urbanization, on the other hand, tracked with a 2% to 4% increase in per capita exports in 1980, and with a 3% to 4% increase in 2000. A year's increase in life expectancy tracked with a 4% increase in per capita exports in both 1980 and 2000. Communist governance, for its part, was associated with a dramatic diminution of per capita exports—51% to 59% less than for comparable never-Communist countries as of 1980, and 45% to 48% less than in comparable never-Communist countries in 2000. These numbers speak to the "export allergy"

[26] The only exception to this generalization concerned the "statistical significance" of the illiteracy rate when life expectancy levels were also being examined—in three out of four such equations the coefficient for the illiteracy rate did not meet the basic 5% confidence test. This seems to be due to the strong evident "collinearity" between illiteracy and life expectancy.

characteristic of central economic planning systems. By 2000, the impact of Communist government status on export performance was less severe than it had been 20 years earlier—but "reform socialist" and post-Communist countries nevertheless continued to export less than would have otherwise been predicted.

As for per capita GNP, a 1-point increase in illiteracy generally reduced per capita GNP by 1% to 2% in 1980 and 2000. A 1-point increase in urbanization tracked with a 1.4% to 2.7% increase in per capita GNP in our analyses, while a one-year rise in life expectancy tended to correspond with a 4% increase in per capita output. Communist status reduced predicted economic performance substantially: by 31% to 34% in 1980, and by 16% to 23% in 2000, all other things being equal. (Here again, the values or the COMMUNIST "dummy variable" were consistent with the proposition that "reform-socialist" or "post-Communist" governance is less economically costly than traditional Communist rule—but as yet by no means entirely cost-free.)

Given the relatively high degree of consistency of these structural estimates, we can use them illustratively: to suggest the sorts of export performance and per capita income levels a country with North Korea's development characteristics might be expected to display, even under a Communist government—if only the peculiar deformities associated with the DPRK's present approach to policy were decisively abandoned.[27]

Admittedly, we cannot be certain about North Korea's precise current illiteracy rate—or its exact levels of urbanization and life expectancy. We are, however, in a position to suggest a reasonable lower and upper boundary for each set of variables. For adult illiteracy, a reasonable range might be 5% to 10%; for urbanization, 40% to 60%;

[27] Our use of these "structural equations" to predict the economic performance of an "ordinary Communist" DPRK rises a number of technical econometric questions, the most acute of these perhaps bearing on the issue of "heteroskedacity" in our regression results. ("Heteroskedacity", one may recall, is the non-random distribution of errors in predicted OLS results—a phenomenon often especially characteristic in the sort of cross-sectional regressions we have just computed here.) Examination of the regression results in Tables 1-4 does indeed reveal some "heteroskedacity" in these "structural equations". More specifically, our residuals showed a slight positive association with the reported value of a country's per capita exports or its per capita GNI. This means that our equations have some tendency to "overpredict" true per capita exports or per capita GNI when those quantities are low, and to "underpredict" them when those quantities are high. Fortunately, those biases were rather limited, as the relatively high "R-squared" values in our OLS equations might in themselves suggest. In the range of predicted values for per capita exports and per capita GNI most relevant to the DPRK in our equations, moreover, the distribution of errors generated by our equations did not appreciably deviate from zero.

for life expectancy at birth, 60 years to 70 years. If we use these lower and upper boundaries, what do our "structural growth equations" suggest about North Korea's potential economic performance?

TABLE 5
Predicted levels of annual per capita exports for DPRK based on international patterns for communist, "reform socialist", and post-communist societies and assumptions about current DRPK illiteracy, urbanization and life expectancy at birth

Predicted annual per capita exports (US $)		
Predictive Relationship	Lower DPRK levels	Higher DPRK levels
Equation 2 (1980)	**$ 168**	**$ 441**
Equation 3 (1980)	**$ 216**	**$ 385**
Equation 6 (2000)	**$ 260**	**$ 707**
Equation 7 (2000)	**$ 253**	**$ 700**
Equation 8 (2000)	**$ 275**	**$ 691**

Notes: Estimated DPRK per capita merchandise exports in 2003: $ 42; "Lower DPRK levels" = Illiteracy rate: 10%, urbanization rate: 40%, life expectancy at birth: 60 years; "Higher DPRK levels" = Illiteracy rate: 5 %, urbanization rate: 60%, life expectancy at birth: 70 years.

TABLE 6

Predicted levels of Gross National Product for DPRK based on international patterns for communist, "reform socialist", and post-communist societies and assumptions about current DRPK illiteracy, urbanization and life expectancy at birth

Predicted GNI per capita (US $)		
Predictive Relationship	Lower DPRK levels	Higher DPRK levels
Equation 10 (1980)	**$ 1, 698**	**$ 3, 023**
Equation 11 (1980)	**$ 1, 808**	**$ 2, 919**
Equation 14 (2000)	**$ 2, 928**	**$ 5, 372**
Equation 15 (2000)	**$ 2, 934**	**$ 5, 203**
Equation 16 (2000)	**$ 2, 547**	**$ 5, 110**

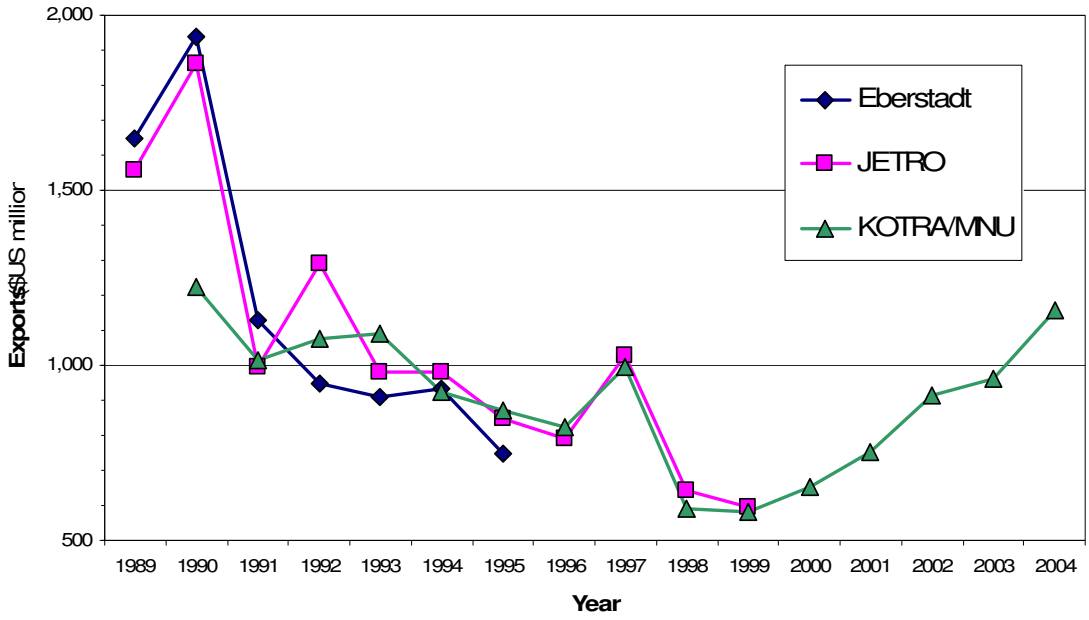
Notes: "Lower DPRK levels" = Illiteracy rate 10%, urbanization rate 40%, life expectancy at Birth 60 years; "Higher DPRK levels" = Illiteracy rate 5 %, urbanization rate 60%, life expectancy at birth 70 years

Tables 5 and 6 lay out the results. On a "traditional Communist" polity performance trajectory, the DPRK would be predicted to earn a low of $170-220 per year through commercial exports, and a high or $390-$440 per capita. On the patterns characteristic of "reform socialist" or "post-Communist" countries, the corresponding estimates would range from a low of $250-$280 to a high of $690-$710. While these numbers may look rather low in the abstract, it should be remembered that the DPRK's level of estimated per capita export earnings through legitimate commercial merchandise in 2004 was barely $50. Thus these figures point to a potentially major increase in North Korean export earnings. Using a national population estimate of 23 million for the contemporary DPRK, these equations would predict export earnings for a more "normal" Communist DPRK in the range of $4 billion to $6 billion if literacy, urbanization and life

expectancy were on the lower end of our assumptions—and annual export revenues of $9 billion to $16 billion if the higher estimates were right.

These sums should be compared to North Korea's recent performance in legitimate commercial exports—where earnings have never exceeded an estimated $2 billion, and are estimated to range around $1 billion for 2004—the latest year for which such estimates are available. [SEE FIGURE 1] (These numbers are "mirror statistics", derived from reports of North Korea's trade partners, adjusted to account for "c.i.f." expenses[28] and converted into current US dollars at current official exchange rates.

FIGURE 1. North Korean Merchandise Exports, 1989-2004



Source: Eberstadt, Nicholas, "Economic Recovery in the DPRK: Status and Prospect," *International Journal of Korean Studies*, IV:1 (Fall/Winter 2000); JETRO; KOTRA; ROK Ministry of Unification (MNU).

As for GNP per capita: our "structural growth equations" indicate that a country with North Korea's assumed literacy, urbanization and life expectancy levels would report a GNP per capita of about $1,700 to $3,000 under "traditional" Communist polity,

[28] "C.i.f." stands for "cost, insurance and freight", and refers to the difference in price between the actual purchase of merchandise in a foreign country and the ultimate expense of bringing the merchandise to the importing country. In the figures cited here we *assume* that the DPRK's c.i.f. costs add a flat 10% to reported purchase prices for merchandise. This 10% markup is standard practice by the IMF and other organizations in cases where actual c.i.f. charges are unknown.

and $2,500 to $5,400 under "reform socialism" or post-Communist polity. That is to say: our regressions predict that a country with North Korea's assumed range of literacy, urbanization, and life expectancy levels would generate a GNP of $39 billion to $69 billion under a "traditional" Communist polity, and $58 billion to $123 billion under "reform socialism" or post-Communist polity. We do not have a reliable set of estimates for current GNP in the DPRK. By way of comparison, however, the ROK Bank of Korea estimates DPRK for 2003 at $18.1 billion.[29]

This analysis of international development patterns points consistently toward a single proposition: namely, that the DPRK, even under its current weakened circumstances, is capable of performing very much better than it has been doing over the past generation—even if its polity remains Communist, and even if that government abjures "reform socialism". For reasons we have already touched upon, it is reasonable to suggest that a "bold switchover" in security policy would be the first step in capitalizing upon the unreaped potential for economic improvement that lies fallow today in the North Korean political economy.

There are of course qualifications that could be lodged to the analysis in the preceding pages. The effect on North Korea's productive capacity of the prolonged famine may well be unexpectedly strong—certainly none of the countries with which the DPRK is being compared suffered a similar fate. In 1980, furthermore, most of the "traditional" Communist states were trading primarily with one another—and since our analysis estimates their trade in dollar terms at official exchange rates, we may be systematically overestimating their trade performance.[30] Be all that as it may: when all is said and done, international "structural growth equations" nevertheless indicate that there would be enormous scope for economic improvement in the DPRK today—even as an

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[29] ROK Bank of Korea, "GDP of North Korea in 2003", June 8, 2004, available electronically at http://www.bok.or.kr/contents_admin/info_admin/eng/home/press/pressre/info/timeseriesnk.xls; accessed September 25 2004.

[30] Another qualification to be noted is that the estimates generated by our 1980 equations would be in current 1980 dollars, while our 2000 equations generate estimates in 2000 dollars. Full standardization would require a deflator to link the two. We should note that, in an effort at "sensitivity analysis", we replaced the export and GNI series from Tables 1-4 above with other export and per capita GNI or per capita GDP series available through the WDI dataset. All of the alternatives we tested revealed similar general relationships, and on the whole similar levels of statistical significance, to the equations presented in Tables 1-4—although the particular beta-coefficients for the independent variables naturally differed from one exercise to the next.

independent and still Communist state—if its government would simply embrace a more "normal" Communist polity.

Foreign Aid for a "Bold Switchover" in North Korea: Potential Sources and Magnitudes

Although it may be plausible to imagine that the DPRK economy would be far more productive after a "bold switchover" in security policy than beforehand, the notion of a "bold switchover" naturally begs a subsidiary question: namely, how to finance the transition from the first polity to the second one.

The exercise in the previous section suggests what performance might look like in the DPRK with today's presumed levels of human resources and "post-switchover" economic and political Socialist arrangements—but this is a putative *end state*. Is it plausible to imagine that financial resources would be available for the DPRK economy to manage to move successfully from its current circumstances to this putative alternate end-point, if DPRK leadership were indeed committed to reaching that destination?

Rigorous examination of this question might be pursued through a number of approaches. One would be proceed along the "economic modeling" avenue—utilizing, for example, CGE (computable general equilibrium") techniques to suggest the magnitude of the resources that might be generated domestically in the DPRK economy during the conversion period, thereby bounding estimates for any additional external resources that might be required to sustain such a transition.[31] An alternative approach much be described as a "project analysis" assessment, in which capital requirements and rates of return are calculated an undertaking of any given scale: variants of this approach are the private sector "business plans" favored by contemporary business schools, and on the non-profit side, the development project plans typically devised by the World Bank and other multilateral or bilateral development assistance institutions.

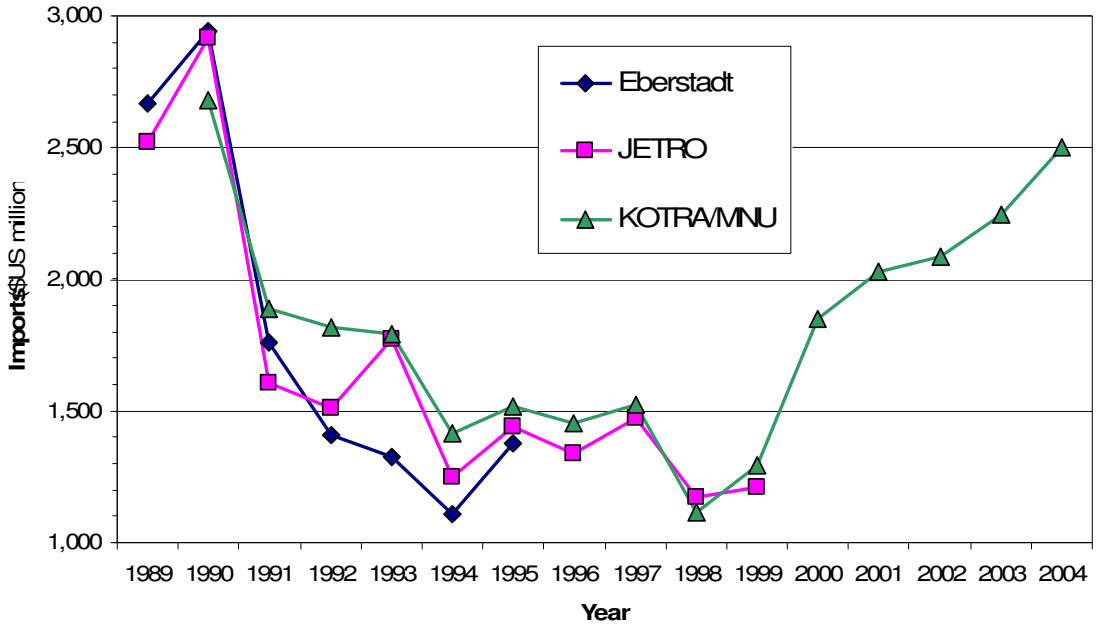
[31] In addition to the obvious data problems confronting such an undertaking, there is the hardly trivial theoretical problem: the "E" in "CGE" refers to equilibrium states, with markets clearing under conditions of flexible pricing. That is not exactly what we would expect to see at the end-point in our hypothesized DPRK economy, much less at the outset.

We will not attempt to offer such rigor here. Instead, we shall simply discuss one obvious and potentially important source of resources that may be available to support a transition in the DPRK economy if or when DPRK leadership commits credibly to a "bold switchover" in its security policies: namely, international public financial aid.

By way of background: in considering the magnitude of the international community's potential financial response to a "bold switchover" of DPRK security policy, the appropriate metric is arguably the amount of official aid and public loans necessary to maintain current North Korean levels of imports from the outside world. That is to say—maintaining, and increasing, North Korea's capacity for procuring goods and services from abroad (for both consumption and investment) would be the critical purpose of foreign monies in the years during and immediately after a "bold switchover".

Figure 1A presents estimates of North Korean import levels over the period 1989-2004, as reconstructed through "mirror statistics". Since some of the DPRK's purchases and imports may have gone undetected, the estimates in Figure 1 will probably underestimate North Korean import levels somewhat. Nevertheless, we expect the estimates to be fairly close to true levels—and we believe the trends indicated are also probably roughly accurate.

FIGURE 1A. North Korean Merchandise Imports, 1989-2004



Source: Eberstadt, Nicholas, "Economic Recovery in the DPRK: Status and Prospect," *International Journal of Korean Studies*, IV:1 (Fall/Winter 2000); JETRO; KOTRA; ROK Ministry of Unification (MNU).

As may be seen, the absolute estimated level of North Korean imports varied between about $3 billion a year and $1.2 billion a year over the period 1989-2003 (valued in current US dollars). As may also be seen, the level of estimated imports tracks quite closely with the DPRK's state of economic well being, as perceived abroad. The drop in import levels associated with the end of the Soviet bloc, for example, coincides with North Korea's well-known economic tailspin in the 1990-1993 period, and the announced failure of the third Seven Year Plan that ended in 1993. The exceptionally low level of imports in the 1994-1998 period coincides with the time now officially termed the "Arduous March"(and with the worst days of the North Korean famine of the 1990s). And the estimated upsurge in reported import levels in the 1998-2004 period is consistent with the timing of the "Strong and Prosperous Country" [*kangsong taeguk*] campaign, and with a general perception that economic conditions in the DPRK are on an upswing.

Bearing these North Korean import trends in mind, we can contemplate the prospects for renewed foreign official financial assistance for the DPRK once it satisfies the international community's major security concerns.[32]

Two distinct types of international government funding could be available to a "post-bold switchover" DPRK: political aid and development aid. The former would be contingent upon a credible switchover in DPRK security policy; the latter would be conditioned upon other additional changes and reforms in North Korean economic policy.

Political Aid

The major likely sources of new politically conditioned aid for "post-switchover" North Korea would be:

Republic of Korea. In the wake of a genuine switchover, the South Korean public's disposition to supply North Korea with massive aid would likely be strong—and such a disposition would likely span South Korea's otherwise quite polarized political spectrum. While it might be hazardous to assign particular numbers to a South Korean political aid response, it does not seem fanciful to imagine that South Korea's political

[32] Note that we are examining *only* public sources of finance here—the potential for private finance could be an additional and possibly very important source of international revenue for a more "normal" DPRK, but that issue should be left for a different discussion.

leadership and voting public could easily approve an additional $2 billion a year for the DPRK simply on the basis of the "security switchover"—that is to say, with additional sums possibly forthcoming if credible economic reform strategies were embraced.

The $2 billion number adduced here is admittedly arbitrary—but it is offered as an arbitrary likely *minimum* for such political aid. ROK aid calculations will be framed in part against the expected defense savings a "bold switchover" would permit. The ROK's 2004 defense budget was slightly over $16 billion; a "bold switchover" in DPRK security policy would presumably afford much more than $2 billion a year in defense savings for the South Korean taxpaying public.

Japan. With a resolution of Japan's security concerns regarding the DPRK, the stage would be set for a DPRK-Japan normalization—and with such a normalization of diplomatic relations, an award by Japan of grants, aid and trade credits fashioned on the formula that was used in the ROK-Japan normalization of 1965.

The 1965 "Agreement on the Settlement of Problems Concerning Property and Claims" between Seoul and Tokyo established that Japan would provide $300 million in grants (over a ten-year period), $200 million in government to government loans (at an annual interest rate of 3.5%, 20 year terms, 7 year grace period), and up to $300 million in commercial credits over ten years, with all grants and credits to be paid in Japanese goods and services. [33]

If an analogous settlement were offered to DPRK, the question of how to adjust the 1965 South Korean terms to current North Korea terms would have to be answered. The answer is not self-evident: in addition to the straightforward pro-rating for population size, adjustments would have to be made to reflect changes in price levels, Yen-Dollar exchange rates, and accrued interest (if any) over the intervening period—and all of these could be very substantial. As of the year 2000—the last time DPRK-Japan normalization talks were being seriously bruited—the calculated range of hypothetical adjustments ran from about $4 billion to about $20 billion, with Japanese officials reportedly considering a $9 billion package.[34]

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[33] Cf. Kwan Bong Kim, *The Korea-Japan Treaty Crisis and the Instability of the Korean Political System*, (New York: Praeger Publisher, 1971), p. 57.

[34] Mark E. Manyin, "North Korea/Japan Relations: The Normalization Talks and the Compensation/Reparations Issue", Congressional Research Service, *Congressional Reports for Congress,*

Given this background, and the intervening passage of years and changes in the Yen-Dollar exchange rate, it might not seem implausible to suggest that Japan would be offering North Korea a package of roughly $12 billion on the occasion of normalized relations. If the package were structured like the 1965 package, this would make for approximately $1.2 billion a year in additional grants, aid and credits over a 10-year period.[35]

The United States. It is difficult to imagine any American government's providing new political aid to a DPRK headed by Kim Jong Il, given his lack of credibility in all political circles within Washington today, Republican and Democratic alike. With a new and credible leadership configuration in Pyongyang, however, the notion of a new US security assistance program for North Korea would not necessarily be unthinkable. With a credible "switchover" in DPRK security policy, a highly tailored program on the order of a few hundred million dollars a year might be politically imaginable, if it were offered in conjunction with conditioned political aid from America's Japanese and South Korean allies.[36]

European Union. Given the EU's relatively newly expressed interest in the Korean peninsula and its security situation, it is not entirely implausible to imagine an EU commitment of security assistance. Any such commitment, however, would likely be mainly symbolic.

Russian Federation. Moscow would be a major financial beneficiary from a "bold switchover" in DPRK security policy, insofar as such a change would make possible the long-envisioned "Korean spur" for the trans-Siberian railway, and the oil and gas pipelines to link Russian fields to South Korean and Japan. Those projects could generate considerable revenues for the Russian government (and for the DPRK government as well). Neither quantity will be considered here, however.

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order Code RS 20526, June 13, 2001, available electronically at http://www.fcnl.org/pdfs/01june13_nkjapan.pdf; accessed September 25, 2004.

[35] If the package were somewhat "front-loaded", as might also possibly be arranged, it might be structured to provide more during the first five years of the agreement, with less in the out-years: for example, $1.6 billion annually for the initial period, $800 for the out-years.

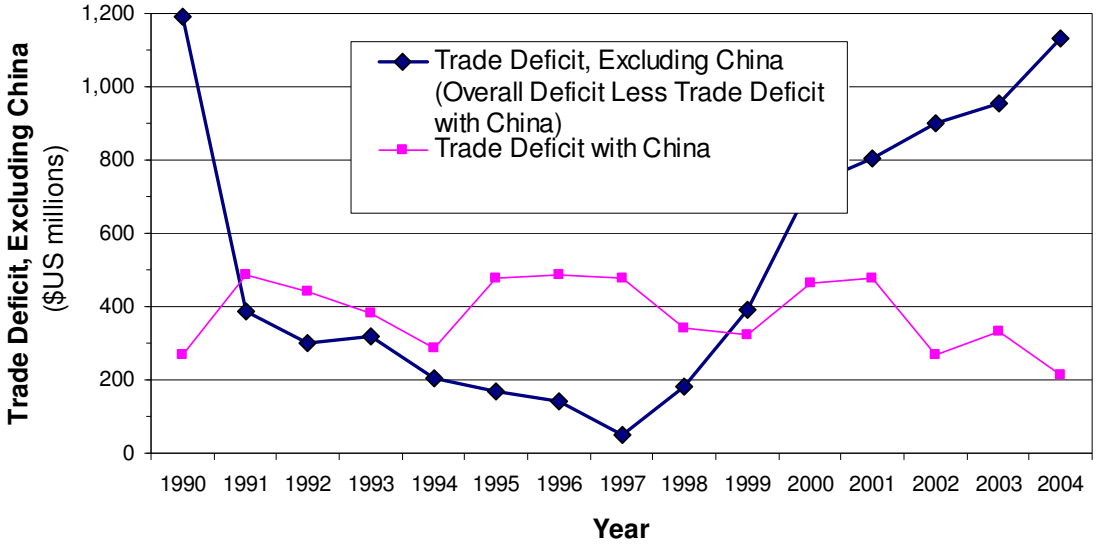
[36] We have explicitly avoided consideration of a possible resurrection of KEDO or a KEDO-like vehicle for political aid here. Such an institution, of course, might figure in the transfer of political aid to a "post bold switchover" DPRK.

At the moment, Russia behaves more like an "aid-seeking" than an "aid-giving" state. As best can be told, Russia has been a negligible aid donor to DPRK since the end of the Cold War. We might expect this pattern to continue even after any "bold switchover" by the DPRK.

China. In the post-Cold War era, China has emerged as North Korea's "aid giver of last resort", as Figure 2 underscores. [SEE FIGURE 2] Between 1990 and 2004, implicit Chinese aid to North Korea (as measured by Pyongyang's balance of trade deficit with Beijing rather than formal aid program announcements) has varied inversely with the DPRK's balance of trade deficit with the rest of the world: China seems to have increased its implicit aid for North Korea when Pyongyang's balance of trade deficit with the rest of the world was being squeezed, and has cut back on implicit aid to North Korea when the DPRK's balance of trade with the rest of the world was on the rise. In any case, however, China's implicit aid to North Korea has varied within fixed and rather modest boundaries, ranging only between about $250 million and about $500 million a year.

Just what China's aid determinations would look like in the wake of a "bold switchover" in North Korea is of course an open question. It is possible that Beijing might decide to increase its aid commitments. What is important to emphasize here, however, is that there is no obvious no reason to *assume* China would increase its commitments of political aid to the DPRK—and given past Chinese behavior, in fact, a *reduction* in aid to DPRK would seem to be somewhat more likely.

FIGURE 2. North Korea's Merchandise Trade Deficit, 1990-2004, Excluding Trade with China



Source: Figures 1 and 2; PRC General Administration of Customs, *China's Customs Statistics*, various volumes.

Development Aid.

New flows of development-assistance aid for North Korea would depend upon DPRK willingness to meet a variety of conditions according to which development funds are customarily allocated. Any regular aid from the International Financial Institutions (IFIs—e.g. World Bank, Asian Development Bank, etc.), for example, is contingent upon gaining membership in those organizations, which in turn is contingent upon membership in the International Monetary Fund. The volume of development aid that might be considered by donors would depend upon the credibility of the particular programs and projects that were proposed.[37] Given the magnitude, focus and geographical distribution of their existing programs, however, some of the likely candidates for official development assistance (ODA) for a "reform socialist" DPRK would be:

1. *World Bank Family (IBRD, IDA, IFC etc.)*
2. *Asian Development Bank (ADB)*

[37] For further discussion of those conditions and general guidelines, see Bradley O. Babson and Yoon Deok Ryong, "How To Finance North Korea's Capital requirements For Economic Recovery", *East Asian Review*, vol. 16, no. 2 (Summer 2004), pp. 65-96, and also the chapters by Bradley O. Babson and Carol Lancaster in Choong Yong Ahn, Nicholas Eberstadt, and Young Sun Lee, eds., *A New International Engagement Framework For North Korea? Contending Perspectives*, (Washington DC: Korea Economic Institute of America, 2004).

3. *United Nations Family (UNDP, etc.)*[38]
4. *Government of Japan*
5. *EU area ODA programs*
6. *Other OECD country bilateral ODA programs*[39]

This thumbnail survey is perforce sketchy and speculative. Even so, it illustrates an important potentiality for a "bold switchover" in North Korean security policy.

With a "bold switchover", Pyongyang could plausibly expect a major inflow of political aid from outside donors—even as a Communist state that was still uncommitted to far-reaching economic reforms. The magnitude of such funding might plausibly be imagined in the range of $4 billion or more in the initial years after such a "switchover". Even if some of these resources were replacing current illicit North Korean earnings (i.e. drug trafficking, military sales, etc.) North Korean import levels could be increased by at least $3 billion a year on the basis of such political aid alone. That would amount to more than doubling the DPRK's current import estimated levels.

Furthermore, if the DPRK moved toward "reform socialism" akin to the Asian model as viewed in Vietnam or China, still more development assistance would be available.[40]

None of this is to suggest that the outside world would necessarily view a proclaimed "bold switchover" under a regime still headed by Kim Jong Il" as credible. Nor is it to make a judgment about the inescapably political question of whether North Korean leadership could maintain authority in a "post-bold switchover" DPRK.

What this conspectus should make clear, instead, is that *economic resource* constraints would not be the limiting constraint for such a future North Korean regime. Quite the contrary—the North Korean economy could expect to enjoy a higher level of imports, on both an absolute and a per capita basis, than it has ever before experienced in

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[38] Presumably any new UN commitments would also be countered by reduction or termination of "emergency" humanitarian food aid from the WFP.

[39] E.g., Canada, Australia, New Zealand, USA.

[40] It is worth noting that Vietnam was the recipient of about $2.4 billion in ODA commitments in 2002. To be sure: Vietnam's population is nearly four times as large as North Korea's. Yet such a figure may nevertheless suggest an upper boundary of plausible ODA commitments to a reforming DPRK, considering the scale of potential reconstruction that might be required in the initial years after a "bold switchover".

the regime's history. Even without "reform socialism", North Korea's economy would be in a better position to grow and develop than at any time in decades: arguably, at any time since the 1960s.

Concluding Observations and Cautionary Comments

The analysis above has made three basic points. First: North Korea's appalling economic performance over the past generation is mainly explained by the government's perverse mesh of economic policies and practices—and most of these destructive policies and practices are posited or abetted by the government's peculiar and extremist approach to external security.

Second, international comparisons through "structural growth equations" hint that a country with North Korea's general level of "human capital and complexity" characteristics—i.e., literacy, urbanization, and life expectancy levels—could expect to attain much higher levels of export performance and per capita output than are thought to prevail in North Korea today. Strikingly, these predicted results imply that substantially enhanced export levels and GNP levels could prevail under *Communist government*—that is to say, under Marxist-Leninist state characterized by more "ordinary Stalinism" (to say nothing of the further enhanced potentialities of "reform socialism").

Third, in relation to the volume of current DPRK international trade turnover, very substantial amounts of foreign aid could be expected if North Korea were to relinquish this exceptional military posture—and these sums would be adequate to support major infusion of consumer goods and capital during a "post-bold switchover" transition period in the DPRK, thus stabilizing living standards and productive potential.

There are a number of obvious and important points not addressed in this paper. We have not, to begin, offered a schema for a program of economic rejuvenation in a socialist DPRK; plenty of suggestions of this sort are already available.[41] And we have not argued that the connection between a "switchover" and economic upsurge is

[41] Cf., for example, Anders Aslund's chapter in Ahn, Eberstadt and Lee, *loc. Cit., and* Bradley O. Babson and William J. Newcomb "ECONOMIC PERSPECTIVES ON DEMISE SCENARIOS FOR DPRK" paper presented for USIP Seminar, January 2, 2004.

determinative: rather, we have talked about a change in the realm of the possible, not what can be asserted with certainty about an inherently unpredictable future.

We have not dealt with the question of whether outside government would judge a promised "bold switchover" by a government led by Kim Jong Il credible under any circumstances—although this is a legitimate and perhaps pressing issue. And we have not engaged the issue of whether a "post-bold switchover DPRK" would be politically viable—although we recognize this to be a matter of more than academic interest.[42]

What we have attempted to show here is that a "bold switchover" in security policy would decisively improve—rather than prejudicially complicate—the prospects for economic growth and development in North Korea, even under continued independent socialist government. The other questions noted but not addressed here are clearly important. Any broad fears about necessarily negative economic ramifications for the DPRK devolving from a "bold switchover" in security policy, however, are clearly unfounded.

[42] In particular, the question of voluntary migration from DPRK to ROK—for economic or non-economic reasons—must be examined closely, especially in light of the ROK's constitutional guarantee to accept people from North Korea as ROK citizens. This issue is noted, but beyond the scope of this paper.