

'Our Own Style of Statistics': Availability and Reliability of Official Quantitative Data for the Democratic People's Republic of Korea

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Introduction

Like the country it covers and the government to which it reports, the statistical service of the Democratic People's Republic of Korea (DPRK, or North Korea) remains, from the standpoint of outside observers, largely enveloped in mystery. In the era of the "information revolution", the DPRK's release of official statistics is entirely episodic and absolutely minimal—and has been so for well over three decades. In an age of "globalization", North Korean statistical authorities stand in virtually complete isolation from all international counterparts. (Indeed: the profound and, as of now, still unbridgeable separation between North Korea's statistical authorities and the outside world is vividly underscored at this forum by the very fact that an American should be invited to present a paper on their work.)

Even the very most basic questions about the structure, organization, and performance of the DPRK statistical system cannot be

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answered by foreign observers with any confidence. We know that the DPRK Central Bureau of Statistics (Choson Chungang Tonggye Kuk, or CBS) was established in 1952, under the direct authority of the DPRK State Planning Commission (SPC)—but the precise institutional relationship between those two organizations today is unclear.¹ Originally the CBS was delegated to “collect, analyze, and submit to the government the statistical data necessary for national administration and economic control” [Chung 1974, Appendix B]—but it is no longer self-evident that the CBS enjoys the untrammelled access to all the sectors of the economy that would be required to discharge that function, or other functions it was initially authorized to pursue. No information whatever is available on the size of the CBS, the number of personnel under its jurisdiction, or the training and qualifications of its employees. In fact, over the past generation, as best can be told, there has been no more than a handful of encounters between North Korean statistical officials and persons from the outside world.²

Modern economies require large amounts of information to carry out their diverse and increasingly complex operations. [Eberstadt 1995] For policy-making in a centrally planned economy, the need for wide-ranging and reliable information would seem to be especially acute. We do not know how much quantitative data North Korean statistical organs prepare internally for top decision-makers in Pyongyang. However, over the past four decades—a period during which North Korean leadership was straining to build a more urbanized and industrialized “independ-

¹ In the 1950s and early 1960s, publications from the CBS specifically identified it as “DPRK State Planning Commission, Central Bureau of Statistics” [DPRK CBS 1961] whereas in the 1980s and 1990s it was described simply as the “DPRK Central Bureau of Statistics” [DPRK CBS 1983, 1995]. That semantic difference may or may not be important; it should be recalled, however, that the formal structure of the North Korean state—as indicated by the DPRK constitution and other documents—has undergone important transformations over the past four decades.

² In 1990 in Pyongyang, the author was privileged to enjoy a three-plus hour discussion with representatives of the DPRK CBS about statistical work in North Korea. Between 1989 and 1995, specialists from the United Nations Population Fund (UNFPA) met with CBS officials on several occasions due to the UNFPA’s technical assistance in the preparation, conduct, and completion of the DPRK’s “1993” census. Insofar as North Korean authorities reportedly relied upon data processing facilities in China for some of their work on the “1993” census, one may infer that CBS personnel had some interaction with Chinese counterparts. Those latter presumed contacts—and any others—remain only surmise, and have not been documented.

dent national economy"—the external supply of official data about social and economic conditions in North Korea dried to a trickle.

In the decade following the Korean War armistice, the DPRK did make a practice of regularly releasing some information on the country's major social and economic trends. [Cf. DPRK CBS 1961; Chung 1974] Those statistical releases were not exactly torrential—but one should remember that other Communist governments at the time were far less forthcoming with statistical data than they would later be. By the early 1960s, though, Pyongyang had begun to impose a strict "statistical blackout" over the entire country—a blackout that continues to this very day.

The success of this longstanding campaign to suppress hard data about the DPRK has been—at least by its own lights—absolutely breathtaking. Unlike any other established Marxist-Leninist state, the DPRK has never, in its fifty-plus year history, published a statistical yearbook.³ The DPRK has not published a won-denominated national accounts series for any period of its rule⁴; in fact, it has never published a won-denominated estimate of the country's total output.⁵ It has never published a detailed price index, and since the mid-1960s has published no price indices at all. It has published almost no information on banking or the monetary situation since the early 1960s. And it has not released even a summary review of its international trade and finance trends for almost four decades.

Even so, the DPRK's statistical embargo has not been absolutely watertight. Tidbits have continued to leak out over the years, and their flow may even have been increasing of late. From time to time over the past generation North Korea has released reports on physical output for various commodities; levels of dollar-denominated "national income"; indices of intertemporal changes in product; and other irregularly announced economic soundings. In addi-

³ The closest thing to a statistical yearbook that the DPRK has ever published is probably DPRK CBS 1961. That publication appeared almost forty years ago.

⁴ The DPRK did provide a 1997 IMF delegation with some summary, dollar-denominated numbers purportedly representing sectoral output for 1992-96. [IMF 1997] In 1997 it also provided a few macro-economic time-series numbers on per capita GNP to the United Nations. [Kim 1997, p. 575]

⁵ Upon a single occasion, the DPRK revealed a won-denominated national output number to outsiders: in 1989, the UNFPA was furnished with a figure for North Korea's "GNI" for 1987. [Eberstadt and Banister 1992, p. 7]

tion, it has released a certain amount of information on the country's demographic and social situation—most importantly, a relatively recent compendium on the country's "1993" census. [DPRK CBS 1995] Although these statistical offerings are sparse indeed—vastly more limited than for any other modern country with the DPRK's level of urbanization or educational attainment—sufficient information is at hand that we may attempt not only to describe the official quantitative data that are available, but also to evaluate their quality.

In the following pages we will survey the variety of North Korean statistics currently available to outside observers, and draw inferences about their reliability. And as will be seen, serious questions arise about the accuracy of official quantitative data from the DPRK. Distortions and biases appear to be pervasive in those data; inconsistency and irreproducibility are characteristic of much of them.

The strikingly poor quality of available DPRK quantitative data has direct and inescapable implications for economic policymaking in contemporary North Korea. We will conclude with a few observations about the bearing of the DPRK statistical system on the country's economic performance, and the implications for North Korean statistical work in the immediate future.

Available DPRK Economic Statistics

Over the past three and a half decades, the CBS has apparently released only two publications of its own. [DPRK CBS 1983; DPRK CBS 1995] Over this long period, official quantitative data have instead typically been released in three fashions: at regularly scheduled official gatherings (e.g., reports to the Supreme People's Assembly (SPA) on the annual state budget, or the completion of a multi-year economic plan); on the occasion of visits by foreigners [cf. Eberstadt and Banister 1992; IMF 1997], or on a seemingly ad hoc basis by North Korea's media or supreme leadership.

On the economic ledger, data released includes figures on commodity output, foreign trade, public finance, and national income. We will examine these in turn.

Physical Indicators of Production

In the DPRK's Socialist command economy, the planning process necessitates establishment of production targets for a wide variety of agricultural and industrial commodities. Official North Korean communiqués on the finish of an economic plan sometimes mention performance with respect to key output targets; media reports and pronouncements by supreme leadership sometimes offer additional figures on the production of specific commodities. Official production targets for a number of major commodities during North Korea's two most recent Seven-Year Plans are presented in Table 1. [SEE TABLE 1]

In principle, it should be a much easier task to keep track of levels of physical production than to estimate levels of aggregate economic output, insofar as the latter calculations for a Socialist

<Table 1> DPRK Official Targets versus Soviet Bloc Estimates of Results: Key Economic Indicators, 1978-1989

Indicator (mil.tons)*	Target Goal		Achieved Result		
	2nd 7-yr.plan (1978-84)	3rd 7-yr.plan (1987-93)	1978	1987	1989
electricity(bil.kwh)	56.0	100	23.0	33.0	28.0
coal	70	120	42	52	51
iron ore	16	18	11	13	13
steel	7.4	10.0	3.2	4.2	4.3
cement	12.0	22.0	7.0	7.8	8.0
fabrics(mil.sq.meters)	800	1500	450	535	540
chemical fertilizers	5.0	7.2	3.4	4.0	3.8
grain	10.0	15.0	6.8	6.8	6.8
rice	5.0	7.0	3.9	3.8	4.2
sea products	3.5	11.0	1.6	2.0	2.1
meat	—	1.7	0.15	0.19	0.20
tractors(thousand)	45.0	50.0	24.0	24.5	22.0

* = unless otherwise indicated

Note: plan targets are official; for source of achieved result estimates see text.
Source: Hans Maretzki, *Kim-ismus In Nord Korea: Analyse Des Letzten DDR-Botschafters In Pjongjang* [Kim-ism in North Korea: Analysis of the Last GDR Ambassador to Pyongyang] (Boblingen, Germany: Anita Tykve Verlag, 1991), p. 155.

system beg the issue of valuation and cost in a non-market setting. But according to the estimates also displayed in Table 1, DPRK planning targets over time have grown ever more divorced from the actual or even the feasible levels of local production. According to those particular estimates, for example, electricity output in the DPRK in 1987 was fully 40 percent below the target set for the completion of the second Seven Year Plan set for 1984: yet the Third Seven Year Plan, which began in 1987, raised the official production target by a further 79 percent, so that a true fulfillment of the plan would have required a tripling of electrical power generation in the ensuing seven years!

Those external estimates of actual commodity production, incidentally, were reportedly assembled on a cooperative basis by the staffs of CMEA embassies in Pyongyang.⁶ Given the CMEA countries' once intimate involvement with particular DPRK state enterprises that accounted for so much of the output in the heavy industry, we might expect estimates for products from that sector to be especially reliable.

These "enormous discrepancies between plan and reality", according to one North Korea watcher from the former Soviet bloc, are systemic. Marezki calls them "numerical gymnastics", and asserts that they serve a threefold purpose: "self-deception of the country's economic policymakers; falsification of information for the local populace, and the passion for [regime] credibility overseas". [Marezki 1991, p. 154]

Whatever their specific purposes, however, those discrepancies are strongly suggestive of an environment of extreme political pressure within the DPRK to create a numerical "reality" that concedes with an officially imagined ideal. Not surprisingly, that same environment appears to conduce to a broad official tolerance for counterfeit official statistics.

Political incentives for exaggeration, misrepresentation, and distortion of statistical information are of course common to all centrally planned economies. Generally speaking, however, the doctoring of data in such systems seems to take place at the level of the enterprise or the region. Central statistical authorities, by

⁶ Interview with Hans Marezki, Potsdam, Germany, May 1993.

contrast, are responsible for validating or correcting those local claims, and providing planners with an accurate representation of actual results.

This is not to say that Socialist states make a point of broadcasting unwelcome statistical news. Under Socialist governments, however, sensitive or inconvenient data are typically suppressed rather than adulterated: authorities generally attempt to maintain the integrity of the numbers they use, even if these are only circulated internally. [Li 1962; Grossman 1963; Chung 1974; Blum 1994] Those concerns for the faithfulness of the data, one may note, are grounded in an entirely practical consideration: when Socialist planners lose track of the actual situation of the economy they are guiding—as happened during China’s Great Leap Forward [cf. Becker 1998]—disaster beckons.

The DPRK insists that it maintains “our own style of Socialism” (urisik sahoejuui)—one that purportedly differs fundamentally from “real existing Socialism” elsewhere. So too Pyongyang seems to compile ‘our own style of statistics’. And in the blunt estimate of an economist from the former Soviet Union with long experience in Pyongyang, the distinction that separates North Korean numbers from the statistics of other Socialist countries is that DPRK “official reports falsify the real state of affairs”. [Trigubenko 1991, p. 2]

If that judgment seems harsh, it would appear to be corroborated by Table 2, which presents North Korea’s claimed grain harvests from 1946 to 1997. [SEE TABLE 2] For 1984 and 1987, DPRK authorities reported a harvest of 10 million metric tons; for 1996 and 1997, the claims were a mere 2.5 million tons and 2.69 million tons, respectively. Such figures would imply a decline of output of 75 percent over the course of nine years (1987-96)—this for a country that was at peace, under continuous governance by a single state, and relying upon irrigated agriculture for the cultivation of its major staple cereal during the period in question. They would further imply that the level of grain output in 1997 was lower in the DPRK than it had been forty years earlier—and that the 1996 harvest was smaller than the harvest in 1949, the first full year of DPRK rule! Since those implications are patently implausible on their very face, the figures underlying them cannot be entertained

<Table 2> Officially Claimed vs. Indirectly Estimated DPRK Trade Performance

	1985 (current US \$ million)		
	Exports	Imports	Balance
Official DPRK Figures	6,060	5,620	+440
Indirectly Estimated Trade By Region			
USSR	525	935	-410
CMEA minus USSR	145	37	+108
Japan	159	250	-91
OECD minus Japan	64	83	-19
China	242	260	-18
Third World	95	109	-14
Indirectly Estimated Total	1,230	1,674	-444
Memorandum Item: Claimed Total / Indirectly Estimated Total	4.92	3.36	-0.99

Notes: "indirect estimates" derived from trade partners' reports on merchandise commerce with DPRK. To account for c.i.f. costs indirectly estimated DPRK "exports" are scaled down from reported trade partner imports by a factor of 1.1; conversely, indirectly estimated DPRK "imports" are scaled up from reported trade partner exports by a factor of 1.1. Figures rounded to nearest US \$million. Indirectly estimated trade is based upon official currency exchange rates with US \$ in 1985.

Sources: Official DPRK data; Pang, 1987, p. 150-151.

Indirect Estimates: Eberstadt, North Korea International Commercial Trade Data Base.

seriously.

To be sure: there is good reason to believe that the DPRK has suffered a genuine decline in agricultural output over the past decade. The figures in Table 2, however, clearly do not depict that decline: rather, they seem instead to reflect the shifting political imperatives inspiring a government with a Procrustean attitude toward statistics.

Before the collapse of the USSR, North Korean leadership was ardently proclaiming the superiority of its version of Socialism, and was routinely pulling up numbers to buttress that position. In the mid-to-late 1990s, by contrast, Pyongyang was canvassing the international community for maximum donations of emergency humanitarian food aid—and thus had developed an interest in mak-

ing its food situation look as grim as possible.

In other Communist economies, as Chung has noted, "Statistics in absolute or physical terms such as the output of major industrial and agricultural commodities and transportation data seem to be far more correct and reliable than those in index numbers". [Chung 1974, p. 171] For the DPRK for the time being, however, available official data on physical output cannot be expected to represent the actual level, trend, or even direction of production. Furthermore, if official DPRK data are vulnerable to deliberate misrepresentation for reasons of state—as we may strongly suspect to be the case—that dynamic may itself accentuate observational distortions. For the very figures North Korean authorities may wish to release would also be the numbers most prone to deliberate official adjustments.

It is impossible for outsiders to know whether North Korean statistical authorities submit to policymakers in Pyongyang the same numbers on physical output that are presented by the DPRK to the outside world. Maintaining multiple central ledgers as a matter of course is not an impossible proposition—although it would be a unique, time-consuming, and perhaps also confusing process. If the DPRK's central planners do indeed work with the same numbers on domestic commodity production that their government publicly announces, however, we must recognize that the CBS would no longer be capable of carrying out one of the primary functions for which it was originally established: namely "to conduct statistical investigations concerning the pursuance of economic planning and [to] study the causes for plan failures". [Chung 1974, Appendix B]

Foreign Trade and Finance

Like other Socialist governments, the DPRK treats international commercial and financial activity as a monopoly of the state; in principle, each and every transaction with the outside world is tallied by the state trading company or government institution engaged in the contract. Under such circumstances, it would seem a relatively straightforward matter to tabulate official trends for the

DPRK's external economy. Since 1963, however, North Korea has released virtually no data on its international trade and financial performance. The data that have been released, moreover, are at dramatic variance with the results estimated by foreign researchers.

In 1997, for example, North Korean authorities informed a visiting delegation from the International Monetary Fund (IMF) that the country's external debt at "US \$3.6 billion plus Rubles 2.9 billion". [IMF 1997, p. 13] At the Soviet-era official exchange rate of US \$1.6 per hard currency ruble, those numbers would imply a total foreign debt of US \$8.24 billion. The IMF, by contrast, preferred an estimate of "about \$12 billion...which includes the ruble debt converted at what is regarded as a 'reasonable' exchange rate". [Ibid., pp. 13-14]

While this difference may reflect in part the considerable methodological uncertainties about both the appropriate valuation of the old ruble and the appropriate pricing of the hard currency debt upon which the DPRK had effectively defaulted, we should also recognize that DPRK authorities at that time did not even agree with their Russian counterparts [who inherited the USSR's international financial assets and liabilities] on the size of Pyongyang's stock of ruble-denominated debt. In 1996, the Russian deputy Prime Minister stated that "North Korea's debt to Russia totals 3.3 billion hard currency rubles".⁷

Determining the volume of trade turnover should be less complex than agreeing upon the value of an outstanding inventory of foreign debt: the former are transactions completed, while the latter, in North Korea's case, are still under active, adversarial negotiation. Nevertheless, the variance between Pyongyang's estimate of its trade volume and outside attempts to reconstruct North Korean trade trends is even greater than the difference between internally and externally generated estimates of North Korean foreign debt. This can be seen in Table 3. [SEE TABLE 3]

To the author's knowledge, over the past generation North

⁷ Vitaly Ignatenko, interviewed by Choson Ilbo April 13, 1996. Choson Ilbo, April 15, 1996, p. 8; translated as "ROK: Russian Deputy Prime Minister On DPRK Visit", in US Foreign Broadcasting Information Service (hereafter FBIS), FBIS-EAS-96-074, April 15, 1996.

Korean sources have only reported total trade turnover for a single year: 1985. [Pang 1987, pp. 150-151] That source denominated DPRK trade in US dollars, placing exports for the year at \$ 6.06 billion and imports at \$ 5.62 billion, for an implied balance of trade surplus of \$ 440 million. The author's own attempt to estimate North Korean trade turnover on the basis of "mirror statistics" from reporting DPRK trade partners⁸ arrives at a wildly inconsonant result: exports of only \$1.23 billion; imports of just \$1.67 billion; and a balance of trade deficit of about \$440 million.

The official estimate for total trade turnover is fully four times higher than the estimate based on "mirror statistics". The magnitude of the discrepancy differs substantially between imports and exports (a factor of about 3.4 for the former and a factor of 4.9 for the latter). The absolute value of the official and the estimated balance of trade happens to be very close: unfortunately, the two have different signs!

It is not apparent how one can account for the tremendous incongruities witnessed in Table 3. Part of the gap between the offi-

<Table 3> Officially Reported DPRK Budget And GNP

1992-1996 (billion won, current prices)

	Year				
	1992	1993	1994	1995	1996
Budget Revenue	39.6	40.6	41.6	24.3	20.3
Budget Expenditure	39.3	40.2	41.4	24.2	20.6
GNP	44.8	45.0	31.2	27.5	22.8
Ratio(GNP=100)					
Budget Revenue	88	90	125	88	89
Budget Expenditure	88	89	125	88	9

Note: GNP converted from US dollars to DPRK won at rate specifically indicated in accompanying table.

Source: IMF 1997.

⁸ These estimates draw upon "mirror statistics" reported by the USSR, China, and the countries participating in the UN International Commodity Trade Database, valuing trade in current US dollars at official exchange rates and adjusting results to account for presumed CIF costs. For more details, see Eberstadt 1998 and Eberstadt, Rubin and Tretyakova 1995.

Other efforts to derive North Korean trade patterns from "mirror statistics" have been undertaken by JETRO in Japan and KOTRA and the Ministry of National Unification in the ROK; although there are some differences between these various estimates, they track very closely.

cial and the estimated figures for DPRK trade turnover might be explained by “illicit” commerce (weaponry, narcotics and other transactions not identified by trading partners)—if DPRK statistical authorities included such business in their official trade ledgers. It seems doubtful that they would, though, and in any case such traffic would likely only account for a small portion of the large differentials illuminated in Table 3. North Korea maintains a regimen of multiple exchange rates, with a “commercial” (trade) won-dollar rate of 2.15:1 and an “official” (essentially ceremonial) rate of about 1:1. Revaluing won-denominated import and export volumes in accordance with the “official” rather than the “commercial” rate would tremendously inflate the calculated value of foreign trade: but even that questionable technique would still leave a disparity of over \$5 billion between the officially claimed and the indirectly estimated trade turnover—a disparity equal to nearly half the claimed trade turnover itself. The author, indeed, has been unable to devise any method or approach to reconcile these to contrasting sets of trade figures—or to replicate the officially claimed North Korean results.

One can only guess whether North Korean policymakers utilize the same international trade and finance figures for decision making that they have provided to foreigners. If they have, we may surmise that they would have been seriously misinformed about the DPRK’s international economic performance: they would have been under the impression that North Korea’s trade is far more robust, its balance of payments situation much healthier, and its foreign debt burden less worrisome than any indirectly gathered information on these trends would have suggested.

State Budget Revenues and Expenditures

For several decades after the onset of North Korea’s official “statistical blackout”, the report on the state budget—read annually at the SPA every spring, and summarized in the DPRK media—was one of the few regularly released bits of data on social or economic conditions in the DPRK. By the early 1990s, it was the only regularly release of official DPRK data whatsoever. After Kim Il Sung’s

death in July 1994, the SPA did not meet for over four years. In April 1999, a report on the 1998 budget was delivered to the SPA⁹—but final figures for the budgets for 1994–97 were not broadcast. In 1997 DPRK authorities did provide a visiting IMF group with state revenue and expenditure totals for the “missing” years 1994–6—but not for calendar year 1997. Thus, as of now, not even one continuous statistical series on postwar social or economic trends in the DPRK is available in the outside world. The budgetary data that have been released, moreover, include obvious anomalies that raise as yet unanswerable questions about the limited data on public finance and national output that Pyongyang has officially disclosed.

By the identities of national income accounting, a country’s government budget cannot exceed its national output. According to the data transmitted to the IMF, however, North Korea managed to overcome that definitional constraint in 1994, when both state revenues and state expenditures reportedly exceed the country’s GDP by fully 25 percent. [SEE TABLE 3]

At a minimum, this impossible “accomplishment” indicates that North Korea’s budget data and national accounts data were prepared entirely independently of one another—without even so much as a check for internal coherence. (Something about the nature of current statistical work in the DPRK may also be revealed by the fact that such a glaring irregularity was not detected, and corrected, before these data were transmitted to the IMF.) But exactly how, in actual practice, did DPRK statistical authorities arrive at this particular erroneous calculation?

We cannot know the answer, but a variety of methodological mis-steps and procedural problems suggest themselves. One obvious issue, for example, could be completeness of coverage in the two data series: if a substantial share of the country’s economic activity were excluded from the national accounts ledgers, for example, it would be possible to generate numbers whereby the budget numerator seemingly exceeded the national output denominator.

Completeness of coverage, however, is an issue not solely

⁹ For details, see the account in *People’s Korea*, which can be accessed electronically at <http://www.korea-np.co.jp/pk/090th_issue/99041407.htm>.

begged by that denominator. There are reasons as well to wonder whether the DPRK's state budget encompasses the entire scope of governmental expenditures and revenues.

The DPRK is an extraordinarily militarized state. That reality is officially acknowledged: in 1976, indeed, Kim Il Sung declared that "of all the Socialist states, ours shoulders the heaviest military burden...." [Kim Il Sung, vol. 31, p. 76] Yet according to official North Korean budget reports, the share of defense spending in North Korea's state budget fell precipitously in the early 1970s—from over 31 percent in 1971 to 15.4% in 1973. For over two decades thereafter, it reportedly remained around or below that level—reaching an official nadir of under 12% in the early 1990s, and most recently registering an official 14.6% for 1998.

By longstanding practice, many Socialist states—and some non-Socialist states as well—under-reported their defense budgets by hiding particular kinds of military spending within other, ostensibly "civilian" budget categories. [Eberstadt and Tombes, forthcoming] That accounting subterfuge, however, typically seems to have left overall state budget totals accurate and intact. The suspicion that Pyongyang may by contrast have entirely exempted large amounts of its military spending from its reported totals for the budget arises because North Korean authorities did just that for other reported statistical totals.

Between 1970 and 1975—during the same years that North Korea reported the great drop in its "military burden"—DPRK population statistics ceased registering total population, and began instead only to enumerate civilian population. [Eberstadt and Banister 1991; Eberstadt and Banister 1992] According to a CBS representative with whom the author conversed in Pyongyang in May 1990, moreover, North Korean statistical authorities at that date simply did not have access data about the size of the country's armed forces. (So much for the CBS's original mandate to "unify and standardize [the] statistical computational system"! [Chung 1974, Appendix B])

Ironically, Pyongyang's decision to extract military personnel from the country's population registration system enabled foreign researchers to reconstruct trends in non-civilian male population

for the late 1970s and 1980s. Those estimates suggested that the directive excluding North Korean soldiers from counted population totals was followed by an immediate and dramatic buildup of military manpower [SEE TABLE 4]—to the point where, by 1986, North Korea would have had the highest ratio of armed forces to population of any country in the world. [SEE TABLE 5]

By those same estimates, as of 1986 fully one out of five North Korean men between the ages of 16 and 54 would have been serving in the military. [Eberstadt and Banister 1992, p. 93] If officially reported defense expenditures had absorbed over 30 of DPRK state spending back in 1970—when by some outside estimates only about a tenth of the men in that same age group would have been under arms¹⁰—the share should presumably have been still higher in 1986, *ceteris paribus*. Yet North Korea's 1986 budget claimed that only 14.1 percent of state expenditures had been devoted to defense!

North Korea's state budget was thus by then masking a large portion of the country's military spending—perhaps even the great majority of it. But exactly how? Outsiders can only guess. It is possible that these quantities were entirely concealed within the reported budget.

**<Table 4> Estimates of Males Not Reported: DPRK, 1975-1987
(in thousands)**

Date Year-end	Reconstructed Total Male Population	Reported Male Population	Total Males Missing	Missing in Ages 16-54
1975	8,147	7,433	714	NA
1980	8,918	8,009	909	NA
1982	9,234	8,194	1,040	NA
1985	9,737	8,607	1,130	NA
1986	9,912	8,710	1,202	1,201
1987	10,090	8,841	1,249	NA

Notes: The reported totals are the civilian male population of North Korea.

The missing males constitute our estimate of the size of the male military population of the DPRK. NA means not available.

Source: Eberstadt and Banister 1991, p.1104

¹⁰ Derived from Eberstadt and Banister 1991 and Eberstadt and Banister 1992.

Alternatively, it is possible that the country's military authorities were routinely denying information on defense spending to state budgeters—just as they were routinely withholding data on military manpower from the CBS. Under other Socialist systems, such seemingly “Bonapartist” tendencies might be difficult to imagine. But then again, in other Socialist systems the military services are carefully subordinated both to the Party and the highest organs of the State, whereas under the current DPRK constitution the “highest post of state” is that of Chairman of the National Defense Commission.¹¹ And considering the enormity of the North Korean

<Table 5> Military Mobilization, Estimated 1986 Percent of Population in Armed Forces, North Korea and “Top Ten” Other Countries by Source of Estimate

Source			
Country	Ranked by IISS	Country	Ranked by ACDA
North Korea	*6.0	North Korea	*6.0
Iraq	5.5	Iraq	4.9
Syria	3.5	Israel	4.3
Israel	3.4	Syria	3.7
United Arab Emirates	3.1	Jordan	3.2
Jordan	2.6	Qatar	3.0
Nicaragua	2.2	Cuba	2.9
Singapore	2.1	United Arab Emirates	2.6
Taiwan	2.1	Nicaragua	2.3
Greece	2.0	Oman	2.2
Qatar	2.0	Singapore	2.2

Notes: Estimate for North Korea refers to year-end 1986. Estimates for other countries refer to midyear 1986. IISS estimates refer to active duty military manpower, and ACDA estimates refer to armed forces.

*Eberstadt and Banister estimate.

Sources: Derived from Arms Control and Disarmament Agency, 1987, Table 1, pp. 27-28; International Institute for Strategic Studies, 1987, pp. 15-127, Tables 30 and A-1. Eberstadt and Banister 1992 p.94

¹¹ Cf. “General Secretary Kim Jong Il Elected State Head—Constitution Altered”. People's Korea, September 7, 1998; accessible electronically at <http://www.korea-np.co.jp/pk/72nd_issue/98120206.htm>

military effort, the withholding of data on the military from DPRK statistical authorities could only stand to impress severe and far-reaching distortions upon their work.

Per Capita "National Income" And National Output Data

As we can already see, there is no reason to invest any great confidence in official DPRK claims about per capita national income or national output. Reliable calculations of those quantities presuppose accurate assessment of physical production—hardly a given in North Korea today. They further require completeness of coverage of economic activity—but completeness of coverage may be compromised in the DPRK today both by North Korean authorities as a matter of principle, and also as a practical matter by the rumored rise of an unofficial “second economy”. [On the later score, see Chun 1998]

To complicate matters further, the virtually complete absence of price series for North Korea makes interpretation of any reported national income or output numbers an exercise dominated by conjecture. And even if all these problems were somehow resolved, there would remain the question of international comparability—for despite heroic efforts to square the circle [most memorably, Bergson 1961], there is no single technique by which to represent unambiguously the output of centrally planned economies in a market-style framework, insofar as it is impossible to offer a common unit of valuation for systems with such fundamentally different approaches to pricing and resource allocation. [Rosefielde and Pfouts 1995, Eberstadt and Tombes forthcoming]

Nevertheless: we must note that Pyongyang has made available some data on its per capita “national income” and per capita national output. Although North Korea has never published a won-denominated national accounts series, it has announced or implied (through reported intertemporal ratios) figures about per capita “national income” and national output for various benchmark years. Those figures are presented in Table 6. [SEE TABLE 6]

Before 1989, all DPRK official figures on national income or output were presumably prepared in accordance with the Socialist

countries' national accounts schema, the System of Material Product Balances (SMPB); per capita "national income" (kukmin soduk) is thus presumed to indicate per capita net material product. For the years 1989 to 1995, Pyongyang has also released some numbers for what is explicitly termed per capita "GNP"—calculations that should therefore have been prepared in accordance with the market-oriented national accounts framework, the System of National Accounts (SNA). (In addition, North Korea has transmitted to the IMF some figures on "gross domestic product" by broad sector for the period 1992-96 [IMF 1997]—but the transmission did include the population data that would be necessary for computations of per capita output.)

The per capita "national income" series is marked by a major discontinuity: it is denominated in won for 1946 to 1974, but in US dollars for 1979 to 1991. That discontinuity, fortunately, reveals the method utilized in calculating the latter numbers: to go by DPRK data for the year 1987, annual reported net material product in won was divided by the reported (i.e., civilian) yearend population and then converted into dollars at the very most favorable of the DPRK's multiple exchange rates.¹² Unfortunately, the approach revealed is fundamentally flawed. And while uncovering the approach may permit us to reconstruct an implicit won-denominated "national income" series for the DPRK for 1946 to 1991, the trends and levels that it might indicate per se can tell us almost nothing about the actual evolution of the DPRK macroeconomy.

Adding to the muddle is the utter discordance between the recent per capita "national income" and per capita "GNP" figures—and indeed between the per capita "GNP" figures themselves. For the year 1989, for example, one has three completely different official observations: a per capita "national income" of \$2,580; a per capita "GNP" of \$798—and another per capita "GNP" of \$911. It is quite simply impossible to reconcile these figures. We may guess that "national income" and "GNP" were converted into dollars at

¹² Dividing the DPRK's 1987 reported "national income" of 47.02 billion won by its reported 1987 yearend population of 19.346 million yields a value of 2430 won per capita. The DPRK's "official" exchange rate with the US dollar was then 1=1. The DPRK reported per capita "national income" figure of \$2,400 for 1987 is very close to that total—and given the proclivity for DPRK commentators to round numbers off, perhaps identical to it.

<Table 6> Official DPRK Reports of Per Capita “national Income” for Various Years, 1946-1995

Year	National Income Per Capita	Source
1946	64.44 Won	“1967 national income is 9 times bigger than that of 1946” in DPRK Central Yearbook, 1980
1949	131.82 Won	“1967 national income is 4.4 times bigger than that of 1949” in DPRK Central Yearbook, 1980
1962	416.67 Won	“1966 national income is 1.2 times bigger than that of 1962” in DPRK Central Yearbook, 1968
1966	500 Won	The Fourth Supreme People’s Committee Meeting Dec.16 1967
1967	580 Won	Chosun Central Broadcasting (Sep. 17, 1979)
1970	605.73 Won	“1970 national income is 9.4 times bigger than that of 1946” in DPRK Central Yearbook, 1974
1974	1,029.75 Won	“1974 national income is 1.7 times bigger than that of 1970” in DPRK Central Yearbook, 1976
1979	1,920 USD	Kim. Il Sung’s New Year’s Message (Jan.1 1980)
1982	2,200 USD	Kim, Woo jung, Deputy Director of External Cultural Committee interview with Japanese Journalist (Sep. 12, 1993)
1986	2,400 USD	Bang, Whan-joo “Chosun Gaekwan-DPRK Country Book” (1988)
1987	2,400 USD	Lee, Myung-soh, Professor at the Social Science Academy
1988	2,530 USD	New York Times (quoted from DPKR Newspaper) July, 1989
1989	2,580 USD	Author’s meeting with DPRK CBS representatives, May 25, 1990
1989	798* USD	DPRK submission to United Nations, Oct. 1992
1989	911* USD	DPRK submission to the United Nations, May 1997
1991	2,460 USD	Kim Jung-woo, Deputy Director of DPRK External Economic Committee, interview with Japanese journalist (Yonhop, Feb. 24, 1992)
1995	719* USD	Kim Jung-woo, in address to a conference in Washington, DC, April 1996
1995	239* USD	DPRK submission to United Nations, May 1997

Notes: *= GNP per capita

Sources: Koh 1999, Kim 1997, Eberstadt meeting with DPRK CBS representatives 1990.

rather different exchange rates. But applying the “commercial” rather than the “official” rate to the “national income” datum would still result in a per capita level of \$1200—a level far higher than the alternate per capita “GNP”s for the same year. Net material product, however, excludes “nonproductive” services that are encompassed within the conception of gross national product—and thus by definition the former must always be smaller than the latter. How the DPRK’s computed net material product manages to exceed its GNP remains an unanswered mystery.

The DPRK’s per capita “GNP” numbers, for their part, present their own as yet unanswerable mysteries. Depending upon which figures one uses, one can conclude that per capita “GNP” declined by only 11 percent between 1989 and 1995—or by just over 70 percent.¹³ To make matters worse, the “gross domestic product” data transmitted to the IMF, in conjunction with totals from the “1993” population census, imply a per capita “GDP” for 1993 of \$987. Assuming Pyongyang’s net factor income from abroad in 1993 to be negligible, that figure would seem to indicate a distinct improvement in DPRK per capita output between 1989 and 1993!¹⁴

The severe inconsistencies between North Korea’s few recent figures on per capita “national income” and national output would seem pose the question of whether DPRK authorities maintain multiple, conflicting accounts of their country’s aggregate economic performance—and if so, whether any series among them can offer

¹³ The DPRK “national income” datum for 1987, in combination with the “gross domestic product” numbers transmitted to the IMF, imply a nominal decline of 62 percent for North Korea’s net material product between 1987 and 1995—and if the country’s population were larger in 1995 than eight years earlier, an even greater decline in per capita net material product.

[1995 net material product calculated by combining reported dollar-denominated output for agriculture, industry, and construction, and converting the total into won at the commercial exchange rate.]

It is difficult to surmise just what this calculated decline should be taken to signify: in relative magnitude, after all, this would be roughly twice as great as the drop in calculated Chinese net material product in the aftermath of the Great Leap Forward!

Among other things, the North Korean total raises issues about price trends and changes in the completeness of coverage of economic activity—perhaps with respect to both economic sectors and geographic regions.

¹⁴ The anomalies in the DPRK national accounts data, alas, do not end here. The data transmitted to the IMF, for example, report a dollar-denominated drop in agricultural output between 1994 and 1996 of about 26 percent. But DPRK authorities also told the IMF team that grain harvests fell by over 64 percent—from 7 million tons to 2.5 million tons—during those same two years. [IMF 1997, pp. 10, 17] Even positing tremendous price gyrations, it is not clear how trend differences of such a magnitude could be reconciled.

a credible impression of the country's overall economic performance. If policymakers in Pyongyang rely upon the same numbers that the DPRK has furnished the outside world, they will currently be unable to determine either the level, or the tempo, or even the direction of change in national income and output on the basis of the numbers themselves.

Concluding Observations

In 1974, Joseph Sang-hoon Chung, in his classic study of the North Korean economy, offered this qualified assessment of available official statistics from the DPRK:

Published data seem to be by and large internally consistent relative to certain obvious mathematical and technical relationships existing among different variables. Several consistency tests performed on industrial output data seem to bear out this point. To be sure, internal consistency is not the same as statistical accuracy. [Chung 1974, p. 171]

A quarter century later, a distinctly less optimistic appraisal is warranted. For now internal inconsistency and is the hallmark of the few official quantitative data that the DPRK does divulge. The overall credibility of available North Korean statistics today can currently only be described as low, and (as we have seen) not a few statistical claims in recent decades appear to be utterly fantastical. The official "statistical blackout" that has suppressed the issue of quantitative information has evidently also severely suppressed both the standards of statistical work in the DPRK and the very capabilities of the North Korean statistical system.

Under half a century of DPRK governance, North Korean statistical capabilities have been shaped by conflicting pressures. On the one hand, the country's highest authorities have avowed that accurate statistical returns were (as an early official slogan put it) "the Necessary Condition for the Development of the People's Economy". [Chung 1974, p. 170] No less a commentator than Kim Il Sung instructed that "it is essential to have accurate statistics for the country as a whole, for each ministry, and for each factory and enterprise under the ministries". [Kim Il Sung, Selected Works, vol. I, p.

359] On the other hand, Kim Il Sung himself also warned that “the [DPRK] statistics bureau is an important agency of state secrets”. [Kim Il Sung, vol. 24; cited in Koh 1999] Correspondingly, statistical work was also to be governed by national security considerations—as those were interpreted by Pyongyang. Over the course of DPRK rule, those national security considerations have weighed ever more heavily upon the North Korean statistical apparatus, with entirely predictable consequences for the quality of statistical work. Today, indeed, it is far from clear that the DPRK CBS is even in a position to prepare a comprehensive and accurate description of socio-economic trends in North Korea. And even if separate, special internal ledgers were actually being prepared for confidential perusal by the country’s top leadership, one can only wonder how the DPRK’s highest circles could possibly glean a precise and detailed impression of economic performance and social conditions in the country they command from the information at their disposal.

In 1974, Chung expected that the highest authorities in the DPRK would strive to maintain the integrity of their statistical system because “[p]utting out false information regarding the economy will mislead the planning process and...create general chaos”. [Chung 1974, p. 171] On the first score, he has been proved wrong; on the second, however, he seems to have been chillingly prescient. For although we lack precise figures on its situation, it is no secret that North Korea’s economy is in grave condition today. Throughout the 1990s it has been set on a course of dire, and apparently continuing, decline.

North Korea’s present economic straits, of course, have many causes. In this venue, we may note that North Korea’s manifest and mounting economic failure is inextricably related to the failure of its statistical system. In a command economy, “planning without numbers” (to borrow a phrase from Wolfgang Stolper) can only invite tremendous economic losses—and the more ambitious the plan, the more monumental the costs. When economic disaster strikes, moreover, a lack of reliable information can only impede the effort to chart a course toward economic recovery—by concealing the impact of destructive policies and practices, impairing efforts to optimize or prioritize, and limiting the careful considera-

tion of alternative paths and strategies.

There are some indications that North Korean authorities have at last come to recognize the threat that the current disarray within the DPRK's statistical apparatus poses to their Socialist economic system, and may now regard the improvement of the country's statistical capabilities as a matter of some urgency. In April 1999, the SPA passed a new Law on People's Economic Plans.¹⁵ Most of the language of that law re-affirmed the (presumably existing) authority of the Socialist state to control and direct the operations of the national economy. Many of the articles in this law, however, concerned the collecting, transmitting, and processing of accurate economic and social data to statistical authorities, and from statistical authorities to policymakers. Article 12 of that law specifically states, "A people's economic plan cannot be formulated without basic information".

Whether Socialist command planning of the style envisioned in this new law will be adequate to the task of sparking economic revival in the DPRK, of course, remains to be seen. We may confidently venture, however, that North Korea's economic rehabilitation cannot occur without a rehabilitation of the North Korean statistical system.

A rehabilitation of the DPRK's statistical system, for its part, cannot occur without a decisive rejection of the atmosphere of internal secrecy and external isolation in which statistical work has been conducted over the past many decades. Irrespective of whether North Korean leadership intends to cleave to its strict and classical variant of command Socialism or to entertain a move toward greater market orientation, the statistical system upon which it relies stands in need of a thoroughgoing overhaul and a wholesale retraining of personnel. Technical assistance from abroad and international cooperation with foreign specialists are the obvious avenues for beginning such a process in earnest. Such contacts, however, would embark the North Korean system, however implicitly, on a path toward greater openness and transparency-and to date, DPRK authorities have vigilantly and explicitly

¹⁵ For the text of that law, see People's Korea, April 21, 1999, accessible electronically at <http://www.korea-np.co.jp/pk/091st_issue/99042105.htm>

opposed precisely those tendencies as inimical to the integrity of “our style of Socialism”.

From the standpoint of North Korean leadership, it would seem, profound perils lie not only in the decay of the country’s statistical capabilities—but also in their prospective recovery. It remains to be seen how North Korean policy will attempt to resolve this thorny contradiction. ■■■

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