Defining Elements of Comprehensive National Power

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The Relevance of Power

Entering the 21st century, economic globalisation has not only been accelerating the process of the integration of the world economy but also competition among/between countries, especially that among big powers. International competition manifests itself mainly in the dynamic changes in the strategic resources of different countries and the open competition in the comprehensive national power (CNP). They often come into conflict with one another and are locked in contention while being, in a complex way, interdependent and interconnected. In the development process, which is quite out of balance, some countries have grown in national power while others are losing relatively. It is those changes that have brought about significant changes to the pattern of the world. The status (or position) of a country in the international community is in essence associated with the rise and fall of its national power, the increase and decrease of its strategic resources.[1]

Comprehensive national power is a concept that is based on the contemporary political thought of the People's Republic of China and refers to the general power of a nation-state. Wu Chunqin, at the Academy of Sciences, Beijing, illustrates the claim with examples from Sun Tzu, Wu Zi and others. He writes, "The discussion of warfare in Chinese ancient literature embodies national power thinking..... China's wise ancient strategists never advocated only relying on military power related to war in order to get an upper-hand."[2] According to Wu Chunqin, calculating CNP can aid a nation not just for war but also to "coordinate a political and diplomatic offensive, to psychologically disintegrate the enemy forces and subdue them." [3] The distinguishing feature of

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this concept is unlike most Western concepts of political power, Chinese political thinkers believe that CNP can be calculated numerically and there are a number of indices, which combine various quantative indices to create a single number, which purports to measure the power of a nation-state. These indices take into account both military factors (known as hard power) and economic and cultural factors (known as soft power). CNP is notable for being an original Chinese political concept with no roots in contemporary Western political theory, Marxism-Leninism, or pre-20th century Chinese.[4]

CNP and National Strategic Resources

CNP generally means the sum total of the powers or strengths of a country in economy, military affairs, science and technology, education and resources, and its influence.[5] More abstractly, it refers to the combination of all the powers possessed by a country for the survival and development of a sovereign state, including material and ideational ethos, and international influence as well.[6] Non-Chinese scholars usually use national power in its specific sense, that is, the strategic capabilities by which a sovereign state uses its overall resources to influence others.[7] It is the most important indicator in measuring the basic national conditions and resources of a country, and a comprehensive indicator of the economic, political, military and technical powers of a country. Comparing the analysis of CNP by Chinese and other scholars as well, a conclusion can be drawn as follows: CNP has a wider coverage, stressing comprehensiveness and all aspects, apparently including material strength, ideational ethos and international influence. But CNP stresses material strength or command power although it does not ignore completely the importance of ideational ethos or soft power. Both CNP and national strategic resources focus on the study of grand strategy.

There is no unified definition or method of computation with regard to CNP or national power of a country. Ashley Tellis[8] defines national power as a product of the interaction of two components, that is, the capability of a country to command its economic innovation cycle at a given time, and use such command power to form effective military capabilities and, in turn, to create a stable political environment, intensify the existing economic advantages and provide basic conditions for maintaining its strategic advantages and seek gains in the international system. In short CNP may be simply defined as the comprehensive capabilities of a country to pursue its strategic objectives by taking actions internationally and the core factors to the concept are strategic resources, strategic capabilities and strategic outcomes, with the strategic resources as the material base.

National strategic resources are defined as real and potential key resources available in realising the strategic outcomes of a country. It reflects the abilities of a country in utilising all kinds of resources worldwide and also reflects the country's CNP. Kenneth Waltz[9] defines powers as the distribution of all kinds of capabilities. In fact, CNP is the distribution of the strategic resources of a country being mobilised and utilised to realise the strategic objectives of a country. Generally speaking, CNP refers to the sum total of the strategic resources of a country while the strategic resources of a country refer to certain kinds of strategic resources.[10]

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National Strategic Resources

Michael Porter lists five major resources, that is, physical resources, human resources, infrastructure, knowledge resources and capital resources.[11] Accordingly, the national strategic resources are divided into eight categories, with 23 indictors. Those categories constitute CNP and are discussed in the succeeding paragraphs.

(a) **Economic Resources.** Economic resources are measured by the gross domestic product (GDP). It is the sum of the gross values added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Usually, there are two ways of measuring GDP. One is calculated by the official or nominal exchange rate. This method often underestimates the economic power of developing countries but overestimates the economic power of developed countries; the other is calculated by the purchasing power parity (PPP). The international comparison project recommended by the World Bank and the International Monetary Fund (IMF) takes 1993 as the base and calculates the gross national product (GNP) of 118 countries and uses PPP to estimate the value of the international dollar per capita GNP and per capita GDP. (Also see Appendix A).

(b) **Human Capital.** Human capital, especially the opportunities and capabilities of education, is regarded as the decisive factor in the process of economic growth. Generally, human capital is expressed in the number

of years of education received by a population. The more the number of years of education received, the more skillful the workers and the higher the labour productivity to stimulate economic growth. The rich human resources of developing countries find it easier to absorb and use new technologies imported from the developed countries.[12] The total human capital of a country is expressed in two categories of major indicators: one is the number of people and the number of working-age people, such as people aged 15-64; the other is human capital, which is expressed in the average number of years of education received by people. The two categories of indicators constitute the total human capital of a country, which is defined as the number of working-age people multiplied by the average number of years of education received, or defined as the multiplication of labour forces and the average number of years of education received by the population. Labour forces conform to the definition by the International Labour Organisation, that is, people of economic vitality. They include people who provide labour service to producers and services at a given stage. They include both people with jobs and people without jobs. The estimated figure of females does not have international comparability, because in many developing countries, most of the female labourers help with the farm work or engage in labour without pay in the family businesses. In general, labour forces include soldiers, unemployed people and people who had found jobs earlier, but do not include family workers or other service workers without pay, and people working in non-regular departments.

(c) **Natural Resources.** Usually, natural resources refer to the abundance, quality, reachability and costs of major natural resources. Natural resources are the necessary conditions for economic development, but they are limited, or the conditions or upper limits for restricting economic growth. Meanwhile, natural resources are regressive in marginal gains, with relatively high ecological costs and external costs in their utilisation. Besides, various resources play varying roles during different stages of development, generally assuming a downward trend (in contrast, the roles of knowledge resources assume an upward trend). There are four major indicators of natural resources: (1) Arable land, including land defined by the Food and Agriculture Organisation (FAO) as land under temporary cropping, temporary meadows for mowing or for pasture, land under market or kitchen gardens, etc., but land abandoned as a result of shifting cultivation is excluded. (2) Annual fresh water withdrawals, that is, total

water withdrawal, not counting evaporation losses from storage basins. Withdrawals also include water from desalination plants in countries where they are a signification source. (3) Commercial energy use referring to apparent consumption, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport. (4) Electricity production measured at the terminals of all alternator sets in a station. In addition to hydropower, coal, oil, gas, and nuclear power generation, it covers generation by geothermal, solar, wind, and tide and wave energy, as well as that from combustible, renewable and waste.

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(d) **Capital Resources.** According to the definition given by Michael Porter,[13] capital resources include three major indicators. (1) Gross domestic investment, that is, the net changes of the spending on fixed assets plus inventory level in the economy of a country. (2) Foreign direct investment (FDI), that is, the net inflows of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital, as shown in the balance of payments. (3) Market capitalisation (also known as market value), that is, the share price times the number of shares outstanding. It reflects the size of development of the financial market.[14]

(e) **Knowledge and Technology Resources.** Knowledge and technology resources are deemed as the most important strategic resources and, with the inset of the knowledge and information society, their importance is growing daily. Knowledge and technology resources include five major indicators. (1) Scientific and technical journal articles, that is, scientific and engineering articles published by about 4,800 international academic publications. It reflects the knowledge innovation capability of a country. (2) Patent applications by residents of a country. It reflects the technology innovation capability of country. (3) Personal computers, i.e. self-contained computers designed to be used by a single individual. It reflects the capabilities of applying new technologies of a country. (4) Internet

hosts, i.e., computers with active internet protocol (IP) addresses connected to the internet. All hosts without a country's code identification are assumed to be located in the US. It reflects the capabilities of a country in spreading information. (5) Government spending on research and development (R&D), that is, the potential knowledge and technology innovation capabilities of a country in a long run. The five indicators present a full picture of a country in promoting knowledge innovation and dissemination, technology innovation and popularisation in the information era.

(f) **Government Resources.** Due to limitations by calculable indicators, the use is of only one indicator here, that is, the fiscal spending of the central government, which includes both current and capital spending, both commercial and service spending and spending on both non-financial public undertakings and public organisations. It reflects the ability of a national government to mobilise and utilise resources.

(g) **Military Resources.** Military power is an important part of CNP. It reflects the abilities of a country in maintaining social stability and stops separatism and also reflects the external power for seeking the maximisation of interest abroad. Military power is also a kind of "output" of the national power[15] and it is, therefore, an extremely important strategic asset: military power is not only an explicit function of CNP but also an expressive function of the will of a state. Military resources have two major categories of indicators. (1) Military expenditure that covers military-related expenditures of the Defence Ministry (including recruiting, training, construction, and the purchase of military supplies and equipment), but other ministries are excluded. Military assistance is included in the expenditures of the donor country, and purchases of military equipment on credit are included at the time the debt is incurred, not at the time of payment. (2) Armed forces personnel, including paramilitary forces, if those resemble regular units in their organisation, equipment, training, or mission.

(h) **International Resources.** These include four categories of indicators. (1) Volume of exports and services. (2) Volume of imports and services. (3) Royalty and licence fees receipts. (4) Royalty and licence fees payments. They are receipts or payment between residents and non-residents for the authorised use of intangible, non-produced, non-financial assets and proprietary rights (such as patents, copyright, trademarks, industrial processe, and franchises) and for the use, through licensing agreements, of produced originals of

prototypes (such as manuscripts and films) that come from copyrights and patents. The former two indicators reflect the ability of a country to utilise and open up to the international market. The latter two reflect the ability of a country to create and utilise international technologies.

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Methods to Measure CNP

In evaluating CNP, the method adopted is characterised by (1) A dimensionless method to compute the percentage of major strategic resources of the country as a proportion of the world's total. Since CNP refers to relative national power. On this basis, comparisons are feasible. (2) Eight different kinds of strategic resources and 23 indicators are considered to constitute a computable CNP equation. (3) Different indicators to mirror their importance are incorporated. For instance, the weighted average of the strategic assets in the knowledge and information age is different from the industrial age. The first includes mainly knowledge, technology, information and other new strategic resources, whose roles are on the rise swiftly; the second includes territory, food grain, energy, iron and steel and traditional resources, whose roles are declining. (4) The equation is dynamic, changing with the times, and not only reflects CNP or the strategic resources of a country in relation to another but also the dynamic changes among them.[16] The table at Appendix B lists out the strategic resources and major indicators.

Dynamic Change of CNP of Five Great Powers, 1980-1998

The economic, political and security pattern of the modem world has been influenced by the rivalry of a few major powers. The world has not been in balance or in peace. Over the two decades, changes have taken place in CNP of the five major powers, reflecting imbalance and the rise and fall in the development among the super or big powers, with some rising, some falling and some changing not much.

The United States remains the superpower in the world. CNP of the United States in 1980 accounted for 22.48 per cent in the world's total, and 22.78 per cent in 1998. The US still ranks first in the world.

China has risen to the second world power. In 1980, CNP of China accounted

for 4.76 per cent in the world's total, lower than that of the former Soviet Union and Japan, ranking fourth in the world. But by 1998, it rose to 7.78 per cent, rising by 3.04 percentage points. The relative gap between China and the United States has been narrowed. CNP of China was only one-fifth (21 per cent) that of the United States in 1980, one-fourth (25.5 per cent) in 1990. But by 1998, it was one-third (34 per cent) that of the United States. In other words, the gap between the United States and China in terms of CNP has narrowed, from five times to three over the past two decades.

Japan ranks third in CNP; similar to China (7.74per cent), it rose first (in 1980-1995) and then fell comparatively (after the 1990s). India ranks fourth in the world, with CNP accounting for 4.36 per cent in the world. The relative gap between China and India was expanded from 1.4 times to 1.8 times. Russia is falling in CNP. It was 1.71 per cent in 1998, the lowest of the five major powers. The gap between China and Russia was enlarged from 2.2 times in 1995 to 2.8 times in 1998.

The relative changes in CNP of the five major countries inevitably caused major adjustment of national security strategies and foreign strategies of the respective countries. In the eyes of the United States, the rapid rise in China's CNP will inevitably make China its strategic rival and even a challenge. It is, therefore, necessary to adopt precautionary and containment strategies against China. Paul Kennedy, professor of Yale University, holds that China perhaps is the only country that will constitute real challenges to the dominance of the United States.[17] Japan, however, has seen China as a real strategic threat, so it has strengthened its strategic alliance with the United States against China. To India, China has always been a major strategic threat; it has for a long time maintained its military spending at about 2.4-3.5 per cent of its GDP. To Russia, due to the rapid decline in its CNP, it has found its gap with China enlarging. At present, Russia's strategy is favourable to China yet its future strategy is not clear. All the above shows that over the past two decades, China's CNP has been rising rapidly; with its strategic resources and environment improving, its CNP grows higher than its neighboring great powers. But the latent strategic conflict between China and the United States is exacerbating.

Soft Power

Soft power is as old as history. The payment of tribute, and exchange of gifts, including hostages and slaves, are forms of soft power used throughout history. Machiavelli's *realpolitik* cocktail was a mixture of persuasion (soft power) with coercion (hard power). The term entered modern diplomatic jargon by 1995.

Joseph S Nye Jr, the proponent of soft power distinguishes between "hard" and "soft" power. The former is the power to coerce, largely through military might; the latter, the power to coopt through such "intangible" factors as culture, values and institutions (the media, churches, schools and so forth). In an era of globalised information, Nye observes, the power to persuade has become almost as important as the power to compel.[18] Applied consistently over a long term, it is designed to encourage cooperation and accommodation.

Coupled with soft power that would emanate as a result of consolidation of CNP, the nation would be in a position to immunise itself from any adverse impact of globalisation.

Soft power is the ability to get what you want by attracting and persuading others to adapt to your goals. It grows out of both cultures and policies. In the case of the US, it grows from Hollywood to higher education. Civil society does far more to present the US to other peoples than the government does. Hollywood often portrays consumerism, sex and violence, but it also promotes the values of individualism, upward mobility and freedom (including of women). These values make the US attractive to many people overseas, but some fundamentalists see them as a threat. President George W Bush articulated this in the 2000 campaign when he said that if America is a humble nation, others will respect it, but if it is arrogant they will not. Hardline sceptics say that whatever the merits of soft power, it has little role to play in the struggle against terrorism. Soft power will never convert fanatics. Popularity is ephemeral and should not guide foreign policy.

The Chinese have coined the phrase "soft strength". To the Chinese, "soft strength" results from CNP strength. It reflects deep potential and international influence. This "soft strength" is not all "soft" — it is the reflection of "hard strength". Without hard strength there's no such thing like "soft strength." On the contrary, the rise in soft strength will promote the development of "hard strength".[19] In some sense, China's "soft strength" is the strength generated during the process of peaceful growing-up.

Analysis

A nation's strength lies in its harnessing a wide spectrum of its resources — from natural resources to human resources to its economic and military potential. CNP is a realistic broad based assessment of a nation's power and its ability to influence global issues as a significant 'player' — this involves positive participation in

multilateral diplomatic activities, big power diplomacy and crucial constructive role in key international and regional affairs. Coupled with soft power that would emanate as a result of consolidation of CNP, the nation would be in a position to immunise itself from any adverse impact of globalisation. The realism is that soft power remains an adjunct of hard power. The paradox of hard power for employment in soft power operations is an inherently attractive narrative. It takes into account the soft power potential of military aircraft, helicopters and relief and hospital ships in humanitarian aid as well as the military might in assisting in rescue and rehabitation necessitated by natural disasters and calamities — humanising the fierce image inevitably projected by hard power.

India as a nation cannot stand forth and claim to be a player on the international stage without becoming a frontrunner in R&D and self-reliant in security equipment as well as military hardware. Till India establishes itself as a major independent R&D hub, in all technological spheres, it will remain susceptible to strategic arm-twisting by other powers and can only be counted as a second class power.

Appendix A
Table 1: The Economic Resources of China, USA, India, Japan and Russia.

Country	**1975**	**1980**	**1985**	**1990**	**1995**	**1998**	**2000**
GDP calculated by PPP· one billion US dollars··							
China	212	414	821	1,520	3,080	3,850	4,966
India	266	441	683	1,170	1,740	2,030	2,432
Japan	598	1,050	1,490	2,350	2,910	2,940	3,354
Russia	-	-	-	1,460	1,050	948	11,68
USA	1,730	2,880	3,880	5,620	7,200	8,000	9,646
World's Total	7,623	13,115	17,955	26,967	34,730	37,595	44,506
% of GDP in world's total							
China	2.78	3.16	4.57	5.63	8.87	10.23	11.16
India	3.49	3.36	3.80	4.35	5.02	5.41	5.46
Japan	7.85	8.04	8.27	8.73	8.38	7.82	7.54
Russia	-	-	-	5.43	3.02	2.52	2.62
USA	22.71	21.96	21.60	20.85	20.73	21.29	21.64
Five in total	-	-	-	44.99	46.02	47.27	48.42

Note: Figures for 2000 are those of the Gross National Income (GNI).
Source: World Bank, *World Development Report 2001,* (New York: Oxford University Press, 2001).

Table: 2 Economic Growth Trend of the Five Countries

Country	GDP Growth 1965-1999	Per Capita GDP Growth 1965-1999	Growth Potential Index	
			GDP	Per Capita GDP
China	8.1	6.4	2.45	4.00
India	4.6	2.4	1.40	1.50
Japan	4.1	3.4	1.24	2.13
Russia	--	--	--	--
USA	3.0	2.0	0.91	1.25
World in total	3.3	1.6	1.00	1.00

Note : Growth potential index refers to the ratio of growth of all countries to the average growth in the world.

Source. World Bank, *World Development Indicator 2001*, Table 1.4 (New York: Oxford University Press, 2001).

Table 3: Long-Term Economic Growth Trend of the Five

Country	GDP billion US Dollars 1998			% in world's total		
	1998	2010	2020	1998	2010	2020
China	3,850	9,803	17,057	10.23	17.66	22.22
India	2,030	3,482	5,460	5.41	6.27	7.11
Japan	2,940	4,762	7,116	7.82	8.58	9.27948
Russia	948	1,202	1,466	2.52	2.17	1.90
USA	8,000	11,406	15,329	21.29	20.55	19.96
World in total	37,595	55,505	76,796	100.0	100.0	100.0

Appendix B
All Kinds of Strategic Resources and Major Indicators

Number	Type of Resources	Weighted average	Indicator	Weight average of indicator
1	Economic resources	0.2	GDP PPP international dollar	1.0
2.	Human capital	0.1	A. Working age population aged 15-65. B. Human capital average Number of years of	

			education received C. Total human capital = AxB	1.0
3.	Natural	0.1	Electricity royalty and licence fees receipts production	0.25
			Commercial energy use Sowing areas of farm crops Freshwater withdrawals	0.25 0.25 0.25
4.	Capital resources	0.1	Gross domestic investment	0.4
			Capital Market value	0.3
			Net foreign direct investment	0.3
5.	Knowledge and technological resources	0.2	Number of personal computers	0.2
			Internet users	0.2
			Patent applications filed by domestic residents	0.2
			Scientific and technical journal articles	0.2
			R & D spending	0.2
6.	Government resources	0.1	Expenditure of central government	1.0
7.	Military resources	0.1	Armed forces personnel	0.4
			Military expenditures	0.6
	International resources	0.1	Export commodities and services	0.3
			Import commodities and services	0.3
			Royalty and licence fees receipts	0.2
			Royalty and licence fees payments	0.2