

## Measuring Power and the Rise of East Asia

Eric M.P. Chiu\*

*National Chung Hsing University*

Thomas D. Willett\*\*

*Claremont Colleges*

*National Chung Hsing University*

### ABSTRACT

This chapter provides a guide to many of the most important quantitative measures of economic and financial power. We offer a brief critical survey of many types of quantitative measures that have been or could be used to analyze the economic and financial power of rising Asia. We argue that while aggregate measures are useful in terms of documenting the economic rise of East Asia, they are of quite limited use in analyzing actual power relationships which can vary tremendously from one issue area to another. We find that East Asia's effective use of power, while certainly ascendant, has generally not yet increased commensurate with the magnitude of its economic rise. We illustrate a number of areas where careful analysis shows that attention just to aggregate quantitative measures alone can be highly misleading. Quantitative analysis needs to be combined with case-specific qualitative and analytic analysis. Measures of aggregate resources must be combined with analysis of countries' political capacity and willingness to make use of their resources for power purposes.

---

\* Associate Professor of the Graduate Institute of National Policy and Public Affairs at National Chung-Hsing University. Email: [ericchiu@nchu.edu.tw](mailto:ericchiu@nchu.edu.tw)

\*\* Horton Professor of Economics, Claremont Graduate University and Claremont McKenna College, Claremont, CA 91711, and chaired external professor, National Chung Hsing University. Email: [thomas.willett@cgu.edu](mailto:thomas.willett@cgu.edu)

Field Code Changed

## **1. Introduction**

This chapter offers a brief critical survey of many types of quantitative measures that have or could be used to analyze the rising economic and financial power of East Asia and provides illustrations of the strengths and weaknesses of many of these measures. As emphasized in the Introduction to this collection, there are many different concepts of power. Data on such matters as the growth of exports, imports, GDP, and foreign investment are quite useful in documenting the economic rise of nations and regions. On such measures the burgeoning importance of emerging market economies in East Asia, especially China, is obvious and explains the greatly increased attention being paid to the region. Our analysis finds that to date East Asia has not come close to exerting economic and financial power in proportion to the increases in its economic importance.

Given the understandable concerns from countries whose relative economic size is diminishing, it is likely quite wise that East Asian countries have so far generally used restraint in flexing their new found economic muscles. The economic rise of East Asia, while a valuable development from the standpoint of human welfare, inevitably also places strains on the operation of the global economy. Conflicts of course have and will continue to arise. That economic development and international trade are positive-sum games does not mean that everyone gains. Restraint on the direct uses of economic and financial power to resolve disputes make an important contribution to assuring that the economic rise of East Asia will be peaceful. Therefore, the question of whether the fairly limited use of economic and financial power by East Asian countries is due to deliberate restraint or, alternatively, to the failure of economic growth to translate directly into economic power is an important issue for analysis.

It is clear that part of the answer is that aggregate economic and financial measures are much less useful in capturing actual changes in power relationships than they are in documenting economic rise and decline. For example, despite all the hype given to forecasting the date when China's aggregate GDP will pass the that of the United States, the event will have little if any substantive impact on actual power relationships. China has already grown to the size that it has become a major component of the world economy.

How aggregate economic and financial developments translate into effective power can vary enormously from one issue area to another. Substantive analysis of power relationships must be context specific. One needs to analyze power in terms of the ability to get who to do what and when (i.e., to project influence) and the power to protect oneself from various types of external events (i.e., to defend autonomy). These external events may be the actions of other countries deliberately seeking to influence

a country's behavior or the unintended consequences of policy developments abroad that were pursued for their own sake. Also of importance is the behavior of non-state actors. It has been popular to argue that globalization has sharply diminished the power of states to pursue their policy objectives. While this is certainly true with respect to many types of policies, the strength of some types of policies can actually be increased by globalization. For example high international capital mobility can help a country finance budget deficits, at least up to the point where the credibility of a country's debt comes into question. Thus the effects of globalization on the power of countries must be analyzed for specific issues. Both theoretical and empirical analyses are of considerable importance. For example, many empirical studies have found that globalization has reduced important aspects of many countries' power much less than frequently assumed.

Aggregate measures of economic and military power based on factors such as population, gross domestic product (GDP), steel production...etc have become much less useful than in the days of balance-of-power relationships during the 18th and 19th centuries. Two major developments have led to a great reduction in the usefulness of such measures – to the point we argue, that fashionable measures of overall power that combine various types of statistical indicators have become virtually meaningless – except for the attention they attract to those who produce them.

The dramatic growth of technology has made traditional measures such as population size almost meaningless as a component of military power among major nations. Nor does aggregate GDP give an adequate measure. The time needed to convert general economic resources to military uses are much greater today than in the vastly less technologically advanced days of the 18<sup>th</sup> and 19<sup>th</sup> centuries when balance-of-power analysis became popular. Furthermore changing attitudes about the legitimacy of using military force has greatly reduced the transfer of such power to economic and financial areas. Of course, the ability to use economic resources to promote economic, financial, and security goals is still quite important. Capacity measures of power are still useful, but only when they are combined with analysis of the ability and willingness to use such resources in specific situations. This in turn depends heavily on domestic political considerations. While the realist tradition in international relations has tended to focus on the external strength of nations, recent developments in the study of international political economy have focused attention also on the importance of the domestic strengths of governments and how these are influenced by political and institutional factors.

The decline in the role of military power in influencing economic and financial power is a vivid illustration of how norms about acceptable behavior can influence crucially the use of power. Also of considerable importance are other aspects of the

world views or mental models that influence countries' behavior both in terms of their normative goals and their perceptions of how the world works.

In section 2, we offer a brief critical survey of various types of aggregate measures of power. We argue that aggregate measures are useful in terms of illustrating the economic rise of East Asia, but are much less useful for analyzing effective power across different issue areas. Measures of the political capacity to translate resources into actions are discussed in section 3. In section 4 we discuss measures of microeconomic sources of power and vulnerability primarily in terms of the use of economic sanctions. In section 5 we turn to the uses and limitations of macroeconomic and international financial measures of power for East Asia relative to the United States. In a number of instances we discuss methods of quantitative estimation of relationships in addition to basic data. Section 6 concludes.

## **2. Some Aggregate Measures of Power**

### *2.1. Issues of Measurement*

Obtaining measures of economic growth is fairly straight forward compared with many of the other measures to be discussed. For most countries basic economic data such as rates of economic growth, inflation rates and, exchange rates are easily available from a number of sources such as the International Financial Statistics of the International Monetary Fund (IMF) and the World Bank's World Economic Indicators. Not all countries' statistics are of equal quality, however. China's inflation and economic growth statistics have been the subject of particularly strong criticism, with many experts arguing that official growth rates tend to be systematically overstated while inflation rates are understated (Rawski 2001; Wang and Meng 2001). Focus should clearly be on real rather than nominal economic growth, and there are several different types of price indices that are used to convert nominal into real growth rates.<sup>1</sup> For example, real GDP equals nominal GDP divided by consumer price index (CPI) or producer price index (PPI), or Wholesale Price Index. CPI measures the average change over time in the prices of a basket of goods and services. Due to national differences in the selection of a basket of goods and services, using CPIs can cause bias in cross-national comparisons. There is also an issue of the importance of aggregate economic growth that includes the effects of population growth versus per capita growth that correlates highly with the growth of productivity.

The same types of issues affect the measurement of the aggregate size of economies. A particularly vexing issue concerns the problem of converting economic

---

<sup>1</sup> The new World Bank data from its comparability project lowers its estimates of China's Real GDP considerably.

and financial magnitudes into different currencies for purposes of comparison. While this also affects calculations of growth rates, the magnitudes of the differences in the figures from different methods are of course much greater when comparing the overall size of economies. The easiest method of comparison is to translate at current exchange rates. One difficulty with this method is that exchange rates can often vary substantially over short time periods. Hence averages of exchange rates are often used. Another problem occurs when governments' maintain exchange rates at disequilibrium levels. This has been a major issue with respect to China's heavily managed exchange rate. There are many different methods for calculating equilibrium exchange rates and no consensus on which one is best. Thus, not surprisingly, estimates of the extent of undervaluation of the RMB vary substantially.<sup>2</sup>

A more subtle issue is that different levels of income and rates of productivity growth can substantially affect the relative prices of traded versus non-traded goods. Due to the Balassa-Samuelson effect, the use of equilibrium market exchange rates can substantially underestimate the real purchasing power of individuals in low income and high growth economies such as China. For measuring individual welfare and how well economies are performing, there is a strong case that some forms of purchasing-power-parity (PPP) adjusted comparisons are the most relevant. Data from the Penn World Tables is often used for this purpose. However for looking at the magnitude of a country's direct influence on the global economy, a measure based on nominal exchange rates is more appropriate. Thus the best measures for internal and external issues differ once again.

There are also many treatments of quantitative measures of various important components of GDP such as amount of energy used, levels of manufacturing production, amount of education offered, and number of patents obtained, etc (Fagerberg 1994; Barro 1996; Lee 2005). These also can be useful for analyzing specific aspects of power. All too often, however, they are presented as if they are self-evident measures of power without careful analysis of how they actually relate to the different major concepts of power. Especially questionable in this context are composite measures that purport to measure overall power through adding together a set of quantitative measures. We argue in the following discussion that such composite measures are virtually worthless for measuring effective aspects of power. We illustrate these concerns with a critique of one of the most recently proposed composite measures by economist Arvind Subramanian (2011).

## *2.2. Composite Measures*

---

<sup>2</sup> Cheung et al 2010; Zhang 2001; Preeg 2003; Funke and Rahn 2005.

In his recent work Subramanian (2011) challenges what he sees as “a one-sided US-centric perspective” and predicts that China will soon become “economically dominant”. Subramanian bases his argument heavily on his index of economic power which combines three factors – GDP, trade, and net creditor or debtor position. These three variables are clearly important, but his claim that “No other gauge of dominance is as instructive as these three” is highly dubious. Subramanian ignores that economic relationships are often highly situation-specific. As illustrated by the concept of “complex interdependence” developed by Keohane and Nye (1977), interdependence is often asymmetrical. In the modern world effective power resources may vary substantially from one issue to another, and in the same issue area a country’s power may vary greatly in relation to different countries. Therefore, aggregate indices of economic power, while perhaps fun to debate, are of quite limited usefulness in analyzing actual issues.

Subramanian follows a tradition of constructing composite measures that include economic or financial concepts as a part of their power dimensions. Many of these measures focus primarily on military power and include economic variables as they are seen to relate to conversion into military power. One of the most widely used composite measures in studies of international relations is the Composite Index of National Capability (CINC). This is comprised of a country’s total population, urban population, iron and steel production, primary energy consumption ratio, military expenditure ratio, and military personnel ratio. The National Power Index (NPI) is another measure combining weighted factors of GDP, defense spending, population, and technology. It is calculated by the International Futures computer model and purports to measure a country’s relative share (percentage) of all global power. Comprehensive National Power (CNP) is a power index developed in China. It takes both military factors (hard power) and economic and cultural factors (soft power) into consideration. As we argued above, such aggregate measures are of quite limited value for serious analysis since they fail to recognize the issue-specific nature of many types of power in a world of limited transfer of power across different issue areas and also fail to capture the willingness or ability of various countries to translate power capacities into effective actions.<sup>3</sup>

### **3. Political Transformations**

Having great economic capabilities yields a country power only to the extent that it has the political capacity to exploit these resources. This in turn depends heavily on the political strength of the government. There are a number of important dimensions

---

<sup>3</sup> For more discussions on power and its measurements, see Baldwin 2002 and Treverton and Jones 2003.

to government strength or weakness. One of the most important is a government's ability to implement the policies that it desires. The stronger are domestic institutional constraints on what the executive branch can do without requiring approval from the legislature, the less freedom of action an executive has. And for policies that must be approved, how easy or difficult this will be can depend both on the forms of government -- whether the executive has a majority in the legislature -- and how strong is party discipline. There may also be a broader range of veto players and interest groups that can block positive actions or pressure governments to take actions that they would prefer not to undertake. Underlying the power of such pressures are the natural concerns of government leaders to keep themselves and their party in power. In stable democracies such concerns take the form of efforts to win elections. In authoritarian and less stable democratic regimes the threat of coups is also relevant.

Governments have more scope for action the greater is their popularity and the further away are the next elections. Concerns about staying in power can substantially influence a government's scope for action and often induce it to adopt policies that are winners over short time horizons, but which may undercut a country's economic strength over the longer term. Excessive deficit spending is a prime example. Ability to tap financial markets to supplement tax revenues in response to a new challenge is an important aspect of economic power. A weak government typically finds it difficult to fight off the demands for increased spending and reduced taxes that lead to fiscal deficits. Once deficits have accumulated to the point where a country's ability to honor its debts comes into question, its scope for action can become severely limited. While the willingness of investors to buy additional sovereign debt has a strong psychological component, there are quite a number of various types of quantitative measures that can be quite useful for assessing a country's "fiscal space" (Heller 2005; Heller et al. 2006; Nooruddin and Chhibber 2007). Their stronger financial positions played an important role in the ability of Asian countries to minimize the adverse effects on their economies of the global financial crisis in comparison with the Asian crisis of 1997-98.

While taking more complex forms, interest group and popular pressures appear in authoritarian as well as democratic political systems. For example, even though China has an authoritarian political system the government is quite concerned about social instability; fears about possible adverse effects on export industries have been a major factor strongly limiting the government's willingness to appreciate the RMB. More generally the Chinese leadership fully understands the need for a rebalancing of the economy toward more consumption rather than an export-led model, but the slowness with which this is being accomplished has been due in no small part to the power of entrenched interests to block reforms that would harm their positions.

A final important aspect of government strength is how well the authorities can implement the policies that have been adopted. This depends on such factors as the quality of the bureaucracy - the extent of corruption and the strength of the rule of law more generally. A government's political strength or weakness can sometimes shift dramatically within a short period of time, and there is no substitute for informed political judgments about various facets of a government's political capacity. But there are areas such as a government's ability to raise tax revenues and carry out effective administration that often change only slowly and which can be the subject of useful quantitative measures that can be a valuable complement to informed judgments by experts.

There are now available a number of data sets that attempt to measure government strength including various aspects of government effectiveness such as the concept of relative political capacity, number of veto players, and levels of political instability which have been developed. The quality of these measures varies, however, and they cannot capture all of the nuances of current political situations. Thus they should be used as complements rather than as substitutes for qualitative political analysis when investigating specific situations.

### *3.1. Strength of Government and Political Instability*

Government strength can be measured in a number of ways. One is by the composition of the government. A single party majority government is considered as a stronger government than a coalition government. In addition, a minority government is less likely to achieve strong public performance (Huber, Kocher and Sutter 2003). This is usually referred to in terms of the number of veto players, where a multiparty government based on a fragile coalition will have less capacity to respond to challenges than the leader of a presidential system whose party also controls the legislative<sup>4</sup>; or else by the concept of divided government, where the executive body in a unified government is more capable of performing efficient policy outcomes and less likely to obstruct initiatives from the legislative body than a divided government. A unified government is therefore able to offer better performance (Lohmann and

---

<sup>4</sup> In an insightful analysis of government responses to the Asian currency and financial crises of 1997, Andrew Macintyre (2001) suggests the presence of a U-shaped relationship between effectiveness of responses and the degree of constraints on executive action. An absence of constraints can lead to instability and lack of credible commitment (Indonesia), while too many constraints can lead to gridlock (Thailand). Countries with an intermediate degree of constraints such as Korea responded much more effectively. Angkinand and Willett (2008) test this U-shaped hypothesis concerning responses to crisis for a set of 39 developing countries for the period 1980-1999 and find strong support for it. Proxies for the number of veto players are available from two datasets: the *Database of Political Institutions* (DPI) from the World Bank collected by Beck et al. (2003), and *Political Constraints* constructed by Henisz (2000).



O'Halloran 1994; Edwards III, Barret and Peake 1997; Coleman 1999).

A second is that a government with a higher quality of bureaucracy will be in a stronger position to overcome political or legal obstructions, realize public policies, and translate resources into effective power. The Worldwide Governance Indicator (WGI) collected and maintained by the World Bank can serve as a good reference on this aspect. The dimension of "government effectiveness" in the WGI highlights bureaucratic efficiency and performance.<sup>5</sup> A government that has a more efficient bureaucratic system is more likely to wield its power effectively.

A third is political instability. This is difficult to define, but in general there are two broad types of concepts. The first type looks at instability in the physical sense of riots, destruction, and coups. Many measures of political instability are constructed as functions of the number of episodes of politically motivated violence and unrest, such as riots, coups and coup attempts, revolutions, strikes, assassinations and assassination attempts, and so on.

The second type of political instability may occur within even the most peaceful environments. This is the probability of changes in government through elections or parliamentary realignments (Walton et al. 2008).

Country reports produced by the International Country Risk Guide (ICRG) are useful tools that systemically investigate the two abovementioned concepts. The report assesses a country's situation by evaluating its political risk confronted by concerned parties. Social conditions, such as "ethnic and racial divisions" and "regional and class divisions" are included while the likelihood of political change is calculated and assessed in each country's report. If the risk confronted is higher in a certain country, according to the ICRG's country report, the country is more likely to be confronted with political instability.<sup>6</sup>

Analyses of such issues are often highly subjective and subject to differences of opinion among experts. A useful way to combine such subjective analysis with the rigor and consistency provided by formal modeling is to use the "expected utility" or "agent based modeling" approach developed by researchers such as Kugler, Bueno de Mesquita, and Abdollahian. Bueno de Mesquita et al. (2004) constructed a concept of political survival with game-theoretic models to evaluate changes of political leaders in a country. This approach can also be used to evaluate the ability of governments to reallocate resources within the public sector and to expand the public sector to

---

<sup>5</sup> WGI can be found at <http://www.govindicators.org/>.

<sup>6</sup> The government stability is defined as a government's ability to carry out its declared program, and its ability to stay in office. In particular, government stability depends on the type of governance, the cohesion of the government and governing parties, the closeness of the next election, the government's command of the legislature, popular approval of government policies, and so on. For detailed discussions on ICRG's index, see Chiu and Willett (2009).

respond to new challenges.

### *3.2. Relative Political Capacity (RPC)*

Another useful concept is that of taxable capacity as developed by the IMF. This basic concept was expanded by Kugler and Organski (1980: 72) into the concept of relative political capacity, which in turn has gone through a number of refinements. Formulated by Kugler and Organski, this concept looks at levels of revenue collection relative to estimates of taxable capacity. This measure assumes that the more a country taxes and spends, the greater the capability of a government. For countries at low and moderate levels of income, this type of measure has proven to have considerable power in explaining economic performance (Arbetman and Kugler 1997). As income increases, however, more government is not always to be preferred. In such cases, a large gap between government revenues and taxable capacity can mean a preference at the margin for private over public sector activities rather than a weak government.

A conceptual problem, however, is that this approach implicitly assumes that more taxation is better than less. In lower income countries with modest levels of government capacity to raise revenue, this is a reasonable assumption. For the advanced industrial countries, however, levels of taxation are more a reflection of political choice than political capacity. Thus, this approach is much more attractive for application to lower income countries. Furthermore, different accounting and taxing systems adopted by different countries might distort their actual financial extraction capability as well. An unstable domestic economic situation leading to short-term fluctuations of inflation might also result in a biased measurement of government capacity.

## **4. Economic Sanctions and Microeconomic Sources of Power and Vulnerability**

As we have stressed the various aspects of a country's power can vary greatly from one issue area to another. Here we discuss the uses of quantitative analysis in several important microeconomic areas with particular focus on economic sanctions.

The structure of international trade and finance can be quite important for power relationships. Control over strategic items for which there are limited substitutes can give a country substantial leverage while dependence on such types of imports can be a source of vulnerability. Data on the composition of trade both by country and by commodity type are readily available for many countries from the IMF's Direction of International Trade. There are also many industry-specific and region-specific sources as well as national statistics available.

The extent of industry level data that are available varies quite a bit from country

to country and often is too broad to give the level of detail needed for some types of analysis. For example, the dramatic expansion of international sourcing and just-in-time inventory policies has led to a substantial increase in economic efficiency during normal periods but also greatly increases vulnerability to major supply disruptions.

The recent earthquake and resulting tsunami in Japan provided a vivid example. Since many industries in East Asia depended heavily on components produced in Japan the tsunami led to production breakdowns. It proved very difficult for governments and indeed many firms to predict how many and where these disruptions would occur because this would have required a level of statistical detail that was just not available.

In considering the ability of countries to impose costly economic sanctions on other countries – as well as a country's own vulnerability to external supply disruptions – analysis usually begins with a look at the statistics of industry-specific trade flows.<sup>7</sup> Economists stress, however, that there can be a low degree of correspondence between such flows and countries' actual leverage or vulnerability. The extent of substitutability is the key here. If supplies from friendly trade partners are easily available, heavy reliance on imports of a strategic product is of little importance unless there is a serious threat of a blockade. Likewise, if domestic substitutes can be produced fairly quickly at only a modest increase in costs, a country's vulnerability to a foreign supply disruption will be low. In turn these conditions in the importing country give the exporter little leverage.

The ability to respond flexibly to the imposition of sanctions and other types of shocks is an important aspect of the autonomy dimension of power. Policy flexibility is important for macroeconomic as well as microeconomic shocks, as will be discussed further below. The conditions for the successful formation and sustainability of cartels are quite similar to those for the success of economic sanctions. Indeed the huge sustained increase in oil prices in the early 1970s was the result of economic sanctions imposed by the Arab members of OPEC rather, not a deliberate effort to act as a profit-maximizing oil cartel. Of course, in response to this demonstration of market power OPEC did begin to behave much more like an income maximizing cartel.

Analysis of these types of issues requires econometric estimation of supply and demand elasticities and/or careful case studies. A recent example of this type of analytical challenge involved China's control of most of the world's supply of rare earth metals. China restricted exports in order to place pressure on Japan to release

---

<sup>7</sup> For economic sanction literature, see Martin 1993; Dury 1998; Pape 1997; Kirshner 2007; Hufbauer, Schott, Ellio and Oegg 2007.

the captain of a fishing boat that Japan argued had been caught in Japanese waters. Since such a use of sanctions is outlawed by the rules of the World Trade Organization (WTO), China officially denied that it was imposing sanctions and claimed that technical supply problems were the cause of the shutdown in shipments to Japan. Such leverage is largely relevant only for the short term as there are many other sources of rare earths globally that could be brought on stream over time. In cases of substantial supply lags, domestic stockpiles of strategic materials are often the best strategy.

In addressing economic sanctions, aggregate effects may often be less important than their distribution. The latter may include not only the direct economic effects but also the governments' ability to cushion adverse impacts on favored groups. For the former, quantitative studies can be quite valuable. Of course, also of crucial importance is the way in which the political institutions operate to convert economic impacts into effective political pressures. Again we see the importance of combining economic and political analysis. Also important is the fact that sanctions, even where quite costly economically, sometimes may actually increase the political position of the target governments. Besides this possible rally-around-the-flag effect, it is often important to consider the likely distributional effects within both the target and sending country. Internal distributional effects are also often quite important when selecting the industries on which to impose trade restrictions to counter trade measures abroad. Sometimes quite sophisticated quantitative analysis is used to select the most politically sensitive products such as those where there are high levels of production in a legislative leader's district. Such studies are often similar in methodology to the many studies of the domestic political forces that generate protectionist trade policies (Hillman and Ursprung 1988; Lohmann and O'Halloran 1994; Rodrik 1995; Bailey, Goldstein and Weingast Barry 1997; Mitra 1999).

##### **5. The Uses and Abuses of Quantitative Analysis of International Monetary and Financial Issues between China and the U.S.**

The importance of issue-specific analysis can be further illustrated by examples from the macroeconomic and international financial areas. Large holdings of international reserves are often included in indices of a country's power. Large reserve holdings certainly do give countries a greater capacity to protect themselves from currency crises, enhancing their autonomy. They also provide a war chest to finance increased military expenditure. China's huge reserve holdings also give it a much greater ability to finance foreign economic activities such as providing foreign aid and investment in Southeast Asia or Africa.

Very high reserves, however, reduce a country's freedom to adjust the levels and

composition of their reserves without running the danger of provoking severe repercussions. The popular argument that China's huge dollar holdings give it great leverage over the United States is grossly misleading. This is an area in which large size can reduce some dimensions of power. A small country with a moderate level of reserves has great freedom to adjust the composition of those reserves without fear of affecting exchange rates. A huge dollar holder like China does not enjoy that luxury.

An issue that has received a good deal of recent attention concerns fears that China's huge holdings of US government debt greatly increase its leverage over the US. This concern is often exaggerated. Any Chinese actions to dump dollars would harm not only the US but also depreciate the value of China's huge dollar holdings and threaten generating an international financial crisis that would be harmful to both countries as well as to many others. Thus this is a case of strong mutual dependence. Whether in this case one country has a greater bargaining power over the other would depend on their willingness to make credible threats. This would be a game of chicken whose outcome is theoretically indeterminate. In other words this is a case of strong mutual dependence, not clear Chinese dominance.

Another area that is more complicated than it seems at first appearance concerns countries' exports. The volume of a country's exports is frequently used as a measure of power. This is consistent with traditional mercantilist thinking. Of course, control over the exports of strategic items is a source of power, as discussed previously. But a high level of exports relative to GDP can be a critical source of vulnerability as it makes a country's macroeconomic performance heavily dependent on external developments such as the rate of growth of the global economy. This is discussed further below in the context of the global financial crisis. The Chinese government recognizes this problem and is committed to rebalancing its macro economy to rely more on domestic spending and less on foreign demand. That is consistent with international pressure for such actions to reduce global imbalances. However, China's slow movement in that direction is likely due much more to recognition that this is in its interests than to the effects of international pressure per se. High export dependence is a feature of quite a number of East Asian economies

In contrast to the mercantilist view of the primacy of exports, high levels of imports (of non strategic goods) may give a country more power than high levels of exports. In a quasi-mercantilist world in which other countries place great weight on expanding exports, controlling market access can give a country considerable leverage. This has been important for both China and the US. This also illustrates the importance of taking note of the willingness and ability of countries to take actions to make use of their power potential. While the US certainly does at times take actions to

limit foreign access to its markets, it does so much less than China.<sup>8</sup>

It is also important to note that actions taken by both China and the United States are frequently due to pressures from domestic interest groups rather than the result of concerns with national power as assumed by nationalist models of international political economy.<sup>9</sup> Nor is China fully immune to pressures from special interests. Thus trade restrictions are often a reflection of weak rather than strong governments.

Another important issue concerns the growing size and regionalization of Asian international trade. These trends had led many commentators to argue that Asia (and the BRICs) had largely decoupled from macroeconomic developments in the advanced economies, giving them much more economic autonomy. No longer when the US sneezed would the rest of the world catch a cold. The recent global financial crisis has shown this decoupling hypothesis to be greatly overstated. A point overlooked by many of the decoupling advocates was the intra-industry nature of much of the increase of intra-regional trade within Asia.

A high proportion of China's imports from other Asian countries are not final products but inputs into the exports that China sells to the advanced economies. Thus when the advanced economies fell into recession, China's exports plunged. In turn, its imports of intermediate goods from the rest of Asia plunged. This of course meant that the exports of the rest of Asia to China fell. The result was a much greater decline in intra-Asian trade than might have been expected from the drop in China's rates of economic growth.

Exchange rate regimes and capital controls can influence how shocks are transmitted internationally and how much domestic monetary autonomy a country can maintain. The increase in globalization certainly increases economic interdependence, but is far from forcing governments to fully give up policy autonomy to the market. However, neither flexible exchange rates nor capital controls are fully effective in insulating economies from foreign shocks.<sup>10</sup> Low levels of holdings of toxic assets did strongly limit how much East Asian countries had to pull back on their international investments after 2008. While there is disagreement over how strongly flexible rates provided Asian economies with insulation from the global financial crisis, as compared with pegged exchange rates, neither currency regime was capable of insulating these economies from the effects of the third stage of the crisis, the

---

<sup>8</sup> For measuring trade restrictions, see Anderson and Neary 2005; Kee, Nicita and Olarreaga 2009; Hauk 2012. World Bank also creates indices called "Trade Restrictiveness Indices" (TRI) for measuring trade restrictiveness, which can be accessed at <http://go.worldbank.org/CSVQJIV3H0>.

<sup>9</sup> Eukland and Tollison (1982) show that special interests also played a strong role in the heyday of mercantilism prior to Adam Smith.

<sup>10</sup> For surveys of quantitative measures of capital controls and exchange rate regimes see Clark et al (2012), Willett et al (2012) and Potchamanawong et al (2008).

global recession that was generated by the financial meltdown. This led to a sharp fall off in exports to the crisis economies and put an end, at least temporarily, to the popular view that East Asia and other emerging market economies had effectively decoupled from macroeconomic developments in the advanced economies. The stronger financial positions of many of the East Asia countries allowed them to adopt offsetting monetary and fiscal expansions that helped keep their economic downturns much milder than during the Asian crisis of 1997-98. This is a case where holdings of high levels of international reserves considerably enhanced Asian countries' autonomy.

The effects of the global financial crisis provide an important example of how quantitative analysis can be extremely useful. Consider the widespread impression that China's massive stimulus programs allowed it to escape the effects of the global recessions to a much greater extent than most countries. Such perceptions are heavily shaped by the fact that China continued to enjoy rates of economic growth that were the envy of most of the world. But this is not a valid measure of the impact of the crisis on China. For that purpose, what is relevant is how much China's growth rate fell from what it might otherwise have been. Of course, we cannot know exactly what this counterfactual would have been. But econometric studies can give us ballpark estimates, and these indicate that the fall in China's growth rate caused by the crisis was of the same order as that in the US (Li et al. 2012). This offers quite a different perspective on the degree of China's macroeconomic autonomy.

Another area where quantitative studies are essential concerns discussions of the loss of countries' monetary autonomy. It has frequently been argued that large financial inflows were the major cause of the asset bubbles that preceded the Asian crisis of 1997-98. Undoubtedly these did play a role. But the primacy often ascribed to them is belied by the evidence that the monetary effects of these inflows were largely sterilized by national central banks so that the effects of these inflows on domestic money and credit creation were sharply limited. It is interesting to note that such sterilization was possible even though the Asian countries had previously eliminated many of their capital controls.

More recently it has been argued that by pegging to the U.S. dollar China has in effect turned over control of its monetary policy to the United States. As emphasized by the so-called Trilemma or Unholy Trinity, that would be true in conditions combining a hard fix, no capital controls, and fully integrated financial markets. However, none of these conditions hold in China. Though Beijing has abandoned its fixed peg to the dollar, it continues to heavily manage its exchange rate and also retain an extensive system of capital controls. And there is strong evidence that China has been able to sterilize most of the domestic monetary effects of its huge balance of

payments surpluses as well, thus allowing it to maintain an effectively independent monetary policy.<sup>11</sup>

As a final example, consider an area where economic power is most transparently quantified. It is in countries' quotas in the IMF, World Bank, and the regional development banks. There is often stickiness in institutions, so that quotas are often more reflective of past than current situations. This is certainly true with Asia's quotas at the IMF and World Bank. While Asian nations have at last received substantial increases in percentage terms, it is still widely perceived that the region is substantially underrepresented in terms of voting rights. Much more important is the fact that especially in the IMF, voting shares usually are a very poor indicator of influence. It is widely perceived that the United States, and to a lesser extent, Europe may have much greater influence than their shares of voting rights would suggest. This is because of the great importance of informal decision making at the IMF (Stone 2011). From this perspective increased participation from Asia in management and senior staff positions at the IMF is likely to prove more important than increases in formal voting rights. Movement in this direction has begun but still has a good way to go before Asia is "properly" represented.

## **6. Concluding Remarks**

In conclusion, we should note that we have not been able to cover all of the areas where quantitative measures of power can be used. Soft power is an example. While there have been some efforts to use quantitative measures such as foreign aid, university rankings etc, to measure soft power, and even efforts to construct aggregate indices, we view these as being of highly limited usefulness except for illustrative purposes (Nye 2004; Gill & Huang 2006; Kurlantzick 2004; Paradise 2009). Perhaps the most useful quantitative measures are surveys of attitudes or perceptions. We have no doubt that soft power can be of importance. For example, the US subprime crisis clearly diminished the attractiveness of the US financial system as a model for other countries and strengthened anti-reformers within China's leadership. The lack of good proxy variables for soft power makes us skeptical, however, that this will prove to be a useful area for quantitative research.

Our aim has been to demonstrate that while there are many areas in which quantitative analysis can be useful for the analysis of economic and financial power, considerable caution is needed in using such measures. Important economic aspects of power must always be analyzed within their political context. Aggregate levels of economies' capacity and the economic effects of shocks may have quite different

---

<sup>11</sup> For discussion and references to empirical estimates of sterilization and measures of international financial interdependence more generally see Clark et al 2012.



impacts on policy depending on how the political process operates. For example, even for a country with great resources, if these resources have already been overcommitted, the country will have little scope to respond to new challenges. Thus we emphasize the importance of the domestic process of political transformation of resources into action.

We stress that the context-specific nature of most aspects of economic and financial power. A country may be quite strong in some issue areas and weak in others. The ability to link issues so as to use strength in one area to counterbalance weakness in another is much more limited today than in the 1700s or 1800s.. Thus countries can have quite different levels of power across different issue areas. Both this and the need to be able to transform resources into actions highlight the danger of paying too much attention to aggregate measures of power. These are much too blunt to be useful for almost any specific purpose.

We have offered a number of illustrations to suggest that the methodological debate over the superiority of quantitative versus qualitative analysis should not be taken seriously. Each approach has its uses and limitations, and these will vary across issues. There are few, if any, cases where these approaches should not be viewed as complements rather than substitutes. Qualitative analysis is typically needed to put in context the meaning of various types of quantitative data. For example, China's huge international reserves increase its power in some areas but can diminish its effective power in others. Thus vis-à-vis its power relationships with the United States there is a situation of mutual dependence rather than dominance. Likewise both the US and China have limited leverage to get the other to adjust macroeconomic and exchange rate policies, but by the same token each has considerable autonomy in these areas.

The extraordinary economic rise of Asia to date has not yet been transformed into anything like a comparable increase in power across many of the world economy's most important issue areas. But these are early days. East Asia's economies are still on the rise. How the region's ascent will affect a wide range of power relationships over the coming years will be a crucial issue for the dynamics of our global political economy.

## References

- Akamatsu, Kaname. 1962. A Historical Pattern of Economic Growth in Developing Countries, *The Developing Economies* 1(s1):3-25.
- Anderson, James, and J. Peter Neary. 2005. *Measuring the Restrictiveness of International Trade Policy*. Cambridge, MA.: MIT Press.
- Angkinand, Apanard, and Thomas Willett. 2008. Political Influences on the Costs of Banking Crises in Emerging Market Economies: Testing the U-Shaped Veto Player Hypothesis, *Macroeconomics and Finance in Emerging Market Economies* 1(2):279-297.
- Arbetman, Marina, and Jacek Kugler. 1997. *Political Capacity and Economic Behavior*. New York, NY.: Westview Press.
- Bailey, Michael, Judith Goldstein and Barry Weingast. 1997. The Institutional Roots of American Trade Policy: Politics, Coalitions, and International Trade. *World Politics* 49(3):309-338.
- Baldwin, David. 2002. Power and International Relations. In *Handbook of International Relations*, edited by Walter Carlsnaes, Thomas Risse and Beth Simmons, 177-192. London: SAGE Publications Ltd.
- Barnett, Michael, and Raymond Duvall. 2005. Power in International Politics. *International Organization* 59(1):39-75.
- Barro, Robert. 1996. Determinants Of Economic Growth: A Cross-Country Empirical Study. *NBER Working Paper 5698*. Cambridge, MA.: National Bureau of Economic Research.
- Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh. 2003. *Database of Political Institutions*. Washington D.C.: World Bank.
- Bird, Graham, and Thomas Willett. 2011. Currency Wars. *World Economics* 12(4):121-136.
- Bueno de Mesquita, Bruce, Alastair Smith, Randolph Siverson, and James Morrow.

2004. *The Logic of Political Survival*. Cambridge MA.: The MIT Press.

- Burdekin, Richard, and Pierre Siklos. 2012. Enter the Dragon: Interactions between Chinese, US and Asia-Pacific Equity Markets, 1995-2010. *CAMA Working Papers* 2011-35, Australian National University, Centre for Applied Macroeconomic Analysis.
- Cheung, Yin-Wong, Menzie Chinn, and Eiji Fujii. 2010. Measuring Renminbi Misalignment. *Korea and the World Economy* 11(2):1-34.
- Chiu, Eric M.P., Jeff Kim, Sirathorn Dechsakulthorn, and Thomas D. Willett. 2011. Classifying International Aspects of Currency Regimes. *Journal of Financial Economic Policy* 3(4):288-303.
- Chiu, Eric M.P. and Thomas D. Willett. 2009. The Interactions of Strength of Governments and Alternative Exchange Rate Regimes in Avoiding Currency Crises. *International Studies Quarterly*, 53(1):1001-1025.
- Chou, W. L., and Y. C. Shih. 1998. The Equilibrium Exchange Rate of the Chinese Renminbi. *Journal of Comparative Economics* 26(1):165-74.
- Clark, William, Mark Hallerberg, Manfred Keil, and Thomas D. Willett. 2012. Measures of Financial Openness and Interdependence. *Journal of Economic and Financial Policy* 4(1):58-75.
- Coleman, John. 1999. Unified Government, Divided Government and Party Responsiveness. *American Political Science Review* 93(4):821-835.
- Drury, A. Cooper. 1998. Revisiting Economic Sanctions Reconsidered. *Journal of Peace Research* 35(4):497-509.
- Ekelund, Robert and Robert Tollison. 1982 *Mercantilism as a Rent Seeking Society* College Station, Texas A&M University Press
- Edward III, George, Andrew Barrett, and Jeffrey Peake. 1997. The Legislative Impact of Divided Government. *American Journal of Political Science* 41(2):545-563.
- Eichengreen, Barry. 2011. *Exorbitant Privilege: The Rise and Fall of the Dollar and*

- the Future of the International Monetary System*. Oxford: Oxford University Press.
- Eichengreen, Barry, Andrew Rose, and Charles Wyplosz. 1996. Contagious Currency Crises, First Tests. *Scandinavian Journal of Economics* 98(4):463-484.
- Fagerberg, Jan. 1994. Technology and International Differences in Growth Rates. *Journal of Economic Literature* 32(3):1147-1175.
- Funke, Michael, and Jörg Rahn. 2005. Just How Undervalued is the Chinese Renminbi? *The World Economy* 28(4):465-489.
- Gill, Bates, and Yanzhong Huang. 2006. Sources and Limits of Chinese 'Soft Power'. *Survival* 48(2):17-36.
- Hauk, William. 2012. Trade restriction indices and US trade policy. *Applied Economics Letters* 19(8):795-799.
- Heller, Peter. 2005. Understanding Fiscal Space, *IMF Policy Discussion Paper PDP/05/4*. New York, NY.: International Monetary Fund.
- Heller, Peter, Menachem Katz, Xavier Debrun, Theo Thomas, Taline Koranchelian, and Isabell Adenauer. 2006. Making Fiscal Space Happen: Managing Fiscal Policy in a World of Scaled-Up Aid, *IMF Working Paper WP/06/270*. New York, NY.: International Monetary Fund.
- Henisz, Witold. 2000. The Institutional Environment for Economic Growth. *Economics and Politics* 12(1):1-31.
- Hillman, Arye, and Heinrich W. Ursprung. 1988. Domestic Politics, Foreign Interests, and International Trade Policy. *American Economic Review* 78(4):729-745.
- Hirschman, Albert. 1945. *National Power and the Structure of Foreign Trade*. Berkeley CA.: University of California Press.
- Hostland, Doug and Philippe Karam. 2006. Assessing Debt Sustainability in Emerging Market Economies using Stochastic Simulation Methods. *World Bank Policy Research Working Paper No. 3821*. Washington, D.C.: World Bank.

- Huber, Gerald, Martin Kocher, and Matthias Sutter. 2003. Government Strength, Power Dispersion in Governments and Budget Deficits in OECD Countries. A Voting Power Approach. *Public Choice* 116(3/4):333-350.
- Hufbauer, Gary, Jeffrey Schott, Kimberly Ann Elliott, and Barbara Oegg. 2007. *Economic Sanctions Reconsidered, 3<sup>rd</sup>*. Washington D.C.: Peterson Institute for International Economics.
- Kaminsky, Graciela, and Carmen Reinhart. 1999. The Twin Crises: Causes of Banking and Balance-of-Payments Crises. *American Economic Review* 89(3):473-500.
- Kee, Hiau Looi, Alessandro Nicita, and Marcelo Olarreaga. 2009. Estimating Trade Restrictiveness Indices. *The Economic Journal* 119(534):172-199.
- Keohane, Robert and Joseph Nye. 1973. World Politics and the International Economic System. In *The Future of the International Economic Order: An Agenda for Research*, edited by C. Fred Bergsten, 115-179. Lexington, MA.: D.C. Heath.
- Keohane, Robert and Joseph Nye. 1977. *Power and Interdependence: World Politics in Transition*. Boston, MA.: Little, Brown.
- Kirshner, Jonathan. 2007. The Microfoundations of Economic Sanctions. *Security Studies* 6(3):32-64.
- Kugler, Jacek and A.F.K. Organiski. 1980. *The War Ledger*. Chicago, IL.: University of Chicago Press.
- Kurlantzick, Joshua. 2004. *Soft Power: The Means To Success In World Politics*. New York, NY.: PublicAffairs.
- Lee, Chien-Chiang. 2005. Energy Consumption and GDP in Developing Countries: A Cointegrated Panel Analysis. *Energy Economics* 27(3):415-427.
- Li, Linyue, Nan Zhang, and Thomas Willett. 2012. Forthcoming. A Survey Measurement of Interdependence in Financial Markets and the Real Economy. *Journal of Financial Economic Policy*

- Lohmann, Susanne, and Sharyn O'Halloran. 1994. Divided Government and U.S. Trade Policy: Theory and Evidence. *International Organization* 48(4):595-632.
- MacIntyre, Andrew. 2001. Institutions and Investors: The Politics of the Financial Crisis in Southeast Asia. *International Organization* 55(1):81-122.
- Martin, Lisa. 1993. *Coercive Cooperation: Explaining Multilateral Economic Sanctions*. New Jersey, NJ.: Princeton University Press.
- McClory, Jonathan. 2011. *The New Persuader II: A 2011 Global Ranking of Soft Power*. London: Institute for Government.
- Mitra, Devashish. 1999. Endogenous Lobby Formation and Endogenous Protection: A Long-run Model of Trade Policy Determination. *American Economic Review* 89(5):1116-1134.
- Nooruddin, Irfan, and Pradeep Chhibber. 2007. Unstable Politics: Fiscal Space and Electoral Volatility in the Indian States. *Comparative Political Studies* 41(8):1069-1091.
- Nye, Joseph. 2004. *Soft Power: The Means To Success In World Politics*, New York NY.: Public Affairs.
- Nye, Joseph. 2008. Public Diplomacy and Soft Power. *The ANNALS of the American Academy of Political and Social Science* 616(1):94-109.
- Ouyang, Alice, Ramkishan Rajan and Thomas Willett. 2010. China as a Reserve Sink: The Evidence from Offset and Sterilization Coefficients. *Journal of International Money and Finance* 29(5):951-972.
- Pape, Robert. 1997. Why Economic Sanctions Do Not Work. *International Security* 22(2):90-136.
- Paradise, James. 2009. China and International Harmony: The Role of Confucius Institutes in Bolstering Beijing's Soft Power. *Asian Survey* 49(4):647-669.
- Pinker, Steven. 2011. *The Better Angels of our Nature*, New York, NY.: Viking.

- Potchamanawong, Pariyate, Arthur T. Denzau, Sunil Rongala, and Joshua C. Walton, and Thomas D. Willett. 2008. A New and Better Measure of Capital Controls. In *The Design and Use of Political Economy Indicators: Challenges of Definition, Aggregation, and Application*, edited by King Banaian and Bryan Roberts, 81-102. Palgrave Macmillan.
- Preeg, E. H. 2003. Exchange Rate Manipulation to Gain an Unfair Competitive Advantage: The Case Against Japan and China. In *Dollar Overvaluation and the World Economy*, edited by C. F. Bergsten and J. Williamson, 267-284. Washington, D.C.: Institute for International Economics.
- Rawski, Thomas. 2001. What is happening to China's GDP statistics? *China Economic Review* 12(4):347-354.
- Rodrik, Dani. 1995. Political Economy of Trade Policy. In *Handbook of International Economics, Volume 3*, edited by Gene Grossman and Kenneth Rogoff, 1457-1494. Amsterdam: North Holland.
- Soesastro, M. Hadi. 1989. The Political Economy of Deregulation in Indonesia. *Asian Survey* 29(9):853-869.
- Stone, Randall. 2011. *Controlling Institutions: International Organizations and the Global Economy*. Cambridge, MA.: Cambridge University Press.
- Subramanian, Arvind. 2011. The Inevitable Superpower: Why China's Dominance is a Sure Thing? *Foreign Affairs* 90(5):66-78.
- Treverton, Gregory, and Seth Jones. 2005. *Measuring National Power*. Santa Monica, CA.: RAND Corporation.
- Walton, Joshua, Penny Angkinand, Marina Arbetman, Marie Besançon, Eric M. P. Chiu, Suzanne Danis, Arthur Denzau, Yi Feng, Jacek Kugler, Kristin Johnson, and Thomas Willett. 2008. Government Structure, Strength, and Effectiveness. In *The Design and Use of Political Economy Indicators: Challenges of Definition, Aggregation, and Application*, edited by King Banaian and Bryan Roberts, 187-215. Palgrave Macmillan Press.
- Wang, Xiaolu and Lian Meng. 2001. A reevaluation of China's economic growth.

*China Economic Review* 12(4):338-346.

Willett, Thomas D., Eric M.P. Chiu, Sirathorn (B.J.) Dechsakulthorn, Ramya Ghosh, Bernard Kibesse, Kenneth Kim, Jeff (Yongbok) Kim and Alice Ouyang. 2011. Classifying International Aspects of Currency Regimes. *Journal of Economic and Financial Policy* 3(4):288-303.

Zhang, Z. 2001. Real Exchange Rate Misalignment in China: An Empirical Investigation. *Journal of Comparative Economics* 29(1):80-94.