



A note on optimizing the economy of the country to increase national power

Hojjat allah Ebadizadeh¹✉ • Behzad Gholizadeh² • Mohammadreza Khosravi³

¹ Basic Science of Imam Ali University, Tehran, Iran

² PhD in Statistics Persian Gulf University of Bushehr

³ Department of Institute of Logistics, Defense Technology and Passive Defense, Higher National Defense University, Tehran, Iran

✉ ebadizadeh.h@gmail.com

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Abstract There have been numerous attempts by experts to measure countries' power. The results of the research indicate that one of the most important indicators affecting national power is the economic factor. A survey of the empowering parameters of many powers in the world shows that economic prosperity, national production, and industries export are among the most important reasons for empowering a number of countries. Therefore, in order to plan for the promotion of the national status and power of the country, it is necessary to examine the factors affecting the economic factor and patterns of world economic trade. So studying the trends of the world economy and its influential resources in order to plan for optimal management of resources and planning necessary to increase the economic and defense power of the country is necessary. In this regard, the current research examines the patterns of world economic trade, transport, and infrastructure, water, and their interactions.

Keywords Patterns of World Trade, National Power, Economic Factors.

1. Introduction

Measuring and evaluation of national power of countries to determine the place of the country in the geopolitical system and comparing the power of countries have always been a concern of political geographers, political scientists, and international relations [Hafeznia et al. \(2008\)](#). In the classical definition, national power is the sum of all available resources of a nation to pursue its national goals. According to this definition, national power is composed of various elements. These elements can be subdivided into national (geography, resources, population) and social (economic, political, military, psychological, and intelligence) groups based on their origin [Jablonsky \(2010\)](#).

There are many ideas and opinions on how power is defined and, in the shortest and most succinct definition, it is the ability to influence and influence the behavior of others. As with power itself, there are various differences and attitudes about its constituent elements. So far many scholars have spoken about the elements of power. It seems that the most comprehensive classification of the elements of power is to place it into two categories of material and spiritual factors. Geographical location, natural resources, industrial and economic development, military readiness and population are the material factors of national power and national character, national morale, quality of government performance, international prestige, ideology or leadership style, and diplomacy are spiritual factors of power [Afshordi and Madani \(2009\)](#).

[Hafeznia et al. \(2008\)](#) presented a model including 9 factors for measuring national power including economic, social, political, cultural variables, by examining 28 theoretical models presented by national and international experts on the bases and sources of power of countries. It was territorial, scientific, spatial, transboundary and military. With further study of this model, it can be seen that economic variables influence national variables more than other variables and can also have a positive or negative effect on other variables. Therefore, in this study, some economic indicators affecting the size of national power are investigated.

Economics is one of the fundamental components of strengthening national power in the present complex world [Adelman et al. \(2007\)](#). An examination of the empowering parameters of many powers in the world shows that the prosperity of the economy, national production, and industries export are the most important reasons for the empowerment of a number of countries. In addition, the experience of past wars shows that some resources play an important role in military power, whose deficiencies cause national power to fail so that countries sometimes invade those resources and also attack military resources. Other countries will not have enough defense against military attack. For example, obtaining natural resources was a major war goal for Germany and other Allied countries, but the lack of such resources had an impact on their war strategy. Only one country during World War II had the industrial, agricultural, and resource resources of World War II, which is why the United States was reluctant to participate in World War II. The industrial foundations of the Soviet Union had expanded considerably, but its food production was hampered by poor agriculture and famine [CIA \(2008\)](#).

This study examines the patterns of production and exports around the world and examines common used commodities and factors influencing the patterns of trade. In the following, water as one of the most influential factors in the economy is considered.

2. Important resources and patterns of world trade

The dramatic changes in patterns of production, trade, and use of natural resources (energy, water, agricultural products, and minerals) have led to major changes in national relations and policies and international relations. Resource security is a dynamic concept. For example, innovations in technologies and systems can improve the cost of access to resources. Also, domestic policies and international relations can also affect the

relationships of producers and consumers, which in turn impacts on the security of resources.

One of the key factors, cost, and capacity available, is security of access to resources. Environmental and social changes are gradually affecting the production and consumption of resources. However, not all changes are gradual, and sometimes sudden changes can disrupt the production and supply of natural resources. For example, popular revolutions or natural disasters. Increasing volatility indicates that there is a significant relationship between environmental sustainability, geopolitical stability, and economic prosperity, and it is harder to predict changes due to the lack of international actors' behavior.

Figure 1 shows the percentage increase in the prices of different products between 2000 and 2010. As shown in the graph, the growth rate of demand for resources has been unprecedented over the past ten years, although the rate of growth of human resources varies, nevertheless, a general trend can be observed for each of the products under consideration.

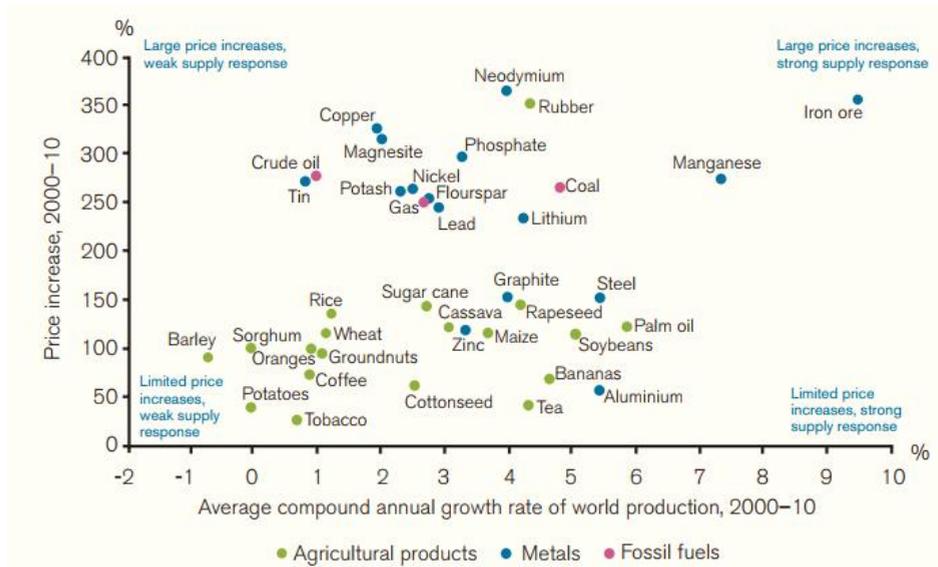


Figure 1. Price increases and supply growth for various commodities, 2000–2010.

The biggest percentage increase in the price was related to iron ore. Also, the use of coal, palm oil, and iron ore grows between 5 and 10 percent annually, while oil, copper, wheat and rice consumption increase by 2 percent a year and only a few numbers of global resource prices such as barley or potatoes were decreased.

In addition to the demand for resources, the availability and price of a resource have a direct and significant impact on the production of related materials. For instance, the energy sector consumes a significant amount of water. About 35 percent of global water consumption in the industrial sector is related to mining, transportation, production, and

energy transmission. Of course, water is also essential for agriculture. For example, wheat production in Saudi Arabia relied entirely on fossil water. In 2009, the country abandoned its policy of self-sufficiency of wheat as unrecoverable groundwater was falling sharply. Therefore, the mere demand for a resource cannot be the sole reason for its production. However, the need for some resources (such as food or fuel, etc.) is unimaginable, and in the absence of the required capacity in the area under consideration, it may be necessary to address the need to transfer the same resources to other areas. At first glance, attention to nearby areas to compensate for the scarcity of resources seems obvious.

Long-term mainstream forecasts predict high demand growth and price fluctuations for most sources by at least 2030 (Table 1). The economic boom created by higher demand has also changed the outlook for resource trade and deepened international interactions. Table 1 shows the outlook for natural resources for 2030. Considering the level of demand change over the long term, it can be used for planning to prevent resource shortages and make the most of other countries' demand.

Table 1. Outlook for natural resources by 2030.

Food	Cereal prices increase by 70–90% compared with 2010; up to 130–170% with climate change. Crop demand reaches 2.7 billion tonnes, from 1.9 billion tonnes in the 1990s Meat demand growth between 2001 and 2030 estimated at 1.7% per year. Fish-as-food demand grows by 20–30% compared with 2010.
Energy	Demand for energy grows by 29%. Coal demand grows by 20% and gas by 44%. By 2035 a total of over \$37 trillion of investments is needed in the energy sector, half of which will go to the power sector. Prices for oil are at \$100–140 per barrel in real terms.
Metals	90% demand growth for steel, 60% for copper (2010 baseline). Demand for aluminum more than doubles. Copper could face a 50% supply gap in absence of considerable additional investment. Potential for temporary shortages of speciality metals with wider deployment of novel technologies.

Sources: Prepared by Chatham House for the NIC. Main data sources: FAO (food), IEA 2012 New Policies Scenario (energy), and industry sources (metals).

In the energy sector, all things will go up in price, especially in the gas issue, and it is necessary to pay attention to the production issue. Iran's metals sector produces 18.5 million tons of steel per year, with a one-percent share of the world, and is projected to grow by 6 percent between 2020 and 2030 in domestic consumption. Many reports on resource relationships reveal that there is a significant relationship between different resource systems and the placement of energy, food or water at the center of a relationship. Increasing population and increasing income will increase the demand for fossil fuels, steel, food, and water. Even now, the environment is heavily under pressure for food production. As a result, agricultural land is increasingly being used on the margins of poorer soils by changing lifestyles and increasing urbanization and industrial use or converting forest resources to biofuel and deforestation. This is especially true in sub-Saharan Africa, which still has the largest reserves of arable land.

2.1. Transport and its interactions

To facilitate trade in natural resources, global transport capacity has doubled since 1980. Several heavy and relatively abundant sources, such as those used for cement production, are usually locally produced and can only be sold to nearby consumers. However, for most natural resources, trade is increasingly global. For instance, the United States exported 845 different kinds of resources to South Korea in 2010, and India exported 583 products to the United Arab Emirates.

Few resources, including valuable agricultural and horticultural products and important chemicals, are transported by air. Throughout the land, railways and waterways are often the cheapest way of transferring large resources from production sites to end-use or transportation. Road transport plays an important role in the final distribution of oil and food.

In terms of resource security, there are three major issues raised by business growth and the expansion of transportation networks. First, with the increasing flow between production and consumption centers, a large share of the world trade of resources now passes through a limited number of ports and shipping channels. Disruption to these critical paths, such as severe weather events or disputes, affects the price and potential physical access to resources.

Companies often include limited resources and require timely delivery of materials, which increases their economic productivity. The quality of infrastructure for transportation of resources is the key to the competitiveness of countries - on both sides of supply and demand - but many countries face the challenge of attracting the needed investment in rail, road and sea infrastructure (ports). Key manufacturers have seen rapid growth in transportation resources in recent years, notably Brazil, Australia, and China. Resource investment in Africa is also closely linked to the development of new railway capacity. On the demand side, infrastructure is critical to maintaining access to global resource markets at competitive prices and transferring resources from where they are produced or to the point of demand. For example, long-term fuel shortages and rising prices in Uganda occurred in 2008 and 2009, even after world oil prices declined sharply due to supply chain disruption from Kenya.

2.2. Water

The availability of water and its price is a determining factor in investing. There are many sources of water on a global scale, on the other hand, water is a source of renewable potential. However, the distribution of water resources is not uniform and includes time and space constraints. In fact, water is an indispensable source of growing demand for various uses (agriculture, industry, etc.) and due to climate change and its different effects on the amount of water available in different regions, there is a great deal of confidence in its future supply, so integrated water resources management is a serious issue, and the link between security and the environment and the availability of water resources is unavoidable. In fact, water has become a strategic resource and various strategies have been developed to control it.

In recent years, growing concerns about the uncertainty of water availability have reinforced a greater understanding of it as a strategic resource. As a result, strategies have been developed to control the process of surface and groundwater.

Water security as its population capacity, to protect sustainable access to sufficient quantities of water acceptable for sustaining livelihoods, welfare, and socio-economic development, to ensure protection against water-borne and water-related pollution and to maintain ecosystems in peacetime and political stability is defined.

Water is irreplaceable for many socio-economic activities, such as irrigation, industrial use, and electricity generation, and since there is a close relationship between water and energy, so water is a strategic resource for other important sectors, and freshwater scarcity is one of the most important mutual challenges of future.

While global water consumption has tripled in the last 50 years, the amount of water supply has remained relatively constant over the same period. According to the Water Resources Group's 2030 scenario, global demand for water is now well beyond sustainable supply, and given the unrestricted consumption of non-renewable water resources, water demand can be up to 40% higher by 2030.

One of the most important debates about water and its importance is the concept of "water war". While there is a lot of empirical evidence in the scientific literature to support the concept of "water war" - given the growing global population, the overwhelming increase in water, the energy of climate change impacts - the changing nature of war, especially the increasing importance of riots, conflicts Civil, terrorism and civil disturbances have largely ignored the importance of the issue of water security and its importance in strategic and defense issues.

For example, there were four years of droughts before the outbreak of the Syrian civil war in 2011, affecting the lives of one million and three hundred thousand people, causing many to migrate to urban areas where many immigrants were extremely poor (including Factors that can influence the start of the Syrian civil war).

On the other hand, agricultural and extractive activities make this the most important factor for freshwater pollution. This can be explained by 95% of the world's untreated wastewater.

By 2050, a quarter of the world's population may face a shortage of potable water. This is especially the case in the Middle East, where 5% of the world's population has less than 1% of the world's freshwater resources. By 2050, the amount of available water in the region is projected to be halved and likely to be acute by early 2025.

In this regard, it is necessary to pay attention to the treatment of wastewater treatment and the reduction of water and food waste as well as the improvement of irrigation technologies. According to Miskensai statistics, drip irrigation and irrigation systems could reduce water consumption by 2030 to 250 billion tons by 2030 compared to the

current situation. Other water issues include water that is shared between different industries and has an uncertain legal status.

2.2.1. Dehydration in Iran

While only 5 percent of Iran's land is cultivated, about 2 percent of Iran's water consumption is in agriculture, while only 10 percent of the country's gross domestic product comes from agriculture, and 5 percent of the country's workforce. Are busy.

Because of its reliance on oil-based economies, Iran has ignored its economic productivity in the agricultural sector in recent history. The desire to increase agricultural production has encouraged the development of cultivated areas throughout the country. The agricultural sector in Iran is economically inefficient and its share of GDP has declined over time. This sector is not yet industrialized and the country suffers from obsolete agricultural practices leading to very low productivity in irrigation and production. The dominant form of agriculture in Iran has irrigated agriculture and the economic return on agricultural water consumption is low. Crop patterns across the country are inappropriate and in many areas incompatible with water access conditions.

Given the amount of water resources and per capita consumption, Iran is one of the countries in the group of countries facing physical water shortages. This group includes countries that are experiencing water shortages every year. This means that even with the highest efficiency and efficiency in water consumption, they will not have enough water to meet their needs. About 5 percent of the world's people, including Iran, are subject to this group. According to the Falcon Mark Index, Iran is on the brink of a water crisis. With about 5% of total renewable water consumed annually in the 1980s and 1980s, according to the UN index, Iran is still in a state of a severe water crisis. According to the International Water Management Institute index, Iran is in a state of severe water crisis. According to the aforementioned indicators, Iran needs to be able to add 5% to its available water resources to maintain its current status by year 3, which seems impossible given the available water resources.

2.3. Perspective of scarcity of resources

Fluctuations in agricultural markets for agricultural goods will continue until 2030. The balance of consumption and production of agricultural products means that the price of these commodities generally increases. However, among the cereals, maize is likely to have the highest international price increase, rising by about 80% in 2030 (compared to recent long-term prices). Increasing demand for biofuels and animal feeds will have a major impact on corn prices as climate change is expected to significantly increase crop production by 2030.

Dependence on corn as a biofuel raw material means that the price of corn will remain high. This will also affect the price of meat. It also transfers fluctuations to other grains due to substitution effects. In addition, there is a risk of price volatility shifting to white corn - the mainstay of Mexico - through the intermediary effect of the feed market. Because while corn prices are relatively high, producers will switch to white corn to

yellow corn. Also, price fluctuations in the wheat market are likely to continue until 2025.

Although the amount of aquaculture production has increased compared to recent decades, it is still expected that aquaculture will have the largest production in the coming years and the fishery and its products will have a large market. The price increase is expected to continue in line with growing demand, increased production costs and limited growth in the fishing industry. Specifically, the prices of farmed fish will increase by 50% in 2025 compared to average prices in 2008-2010, while non-farmed fisheries are expected to increase by 23%.

Food prices from fish and corn will also likely increase (43% and 19%, respectively), with implications not only for fish (feed) but also for other sectors such as livestock or agriculture.

With the boom in North American oil supply, coupled with the economic slowdown in Asian countries and the development of new technologies in oil extraction, price stability in the oil market will continue until 2030. Failure to do so between 2025 and 2030 could result in severe shortages of oil in importing countries, including the United States, China, and India. Although the demand for oil may be reduced by changing and updating internal combustion engines and by increasing electric motors, they are unlikely to have a major impact on global fuel demand by 2030.

The gas markets will not change significantly in line with the shale oil market until 2030, but reduced investment in LNG could raise prices. Due to the abundance of coal resources due to the water industry, water scarcity and water stresses can reduce investment in this energy source. However, renewable energies are seen as a threat to fossil fuel energy markets.

Oil prices are likely to remain around \$ 80- \$ 120 a barrel by 2025, as unforeseen factors such as political crises can affect supply. Oil prices are expected to decline after 2030 as alternative technologies will reduce oil demand.

Global demand for metals is expected to decline as China's demand for metals declines. Particularly given the project of green land in countries such as Mongolia and Afghanistan in the copper extraction industry will increase the supply of this important metal, which is expected to continue to be high due to the possibility of copper replacement with aluminum in some industries.

In the face of these potential supply and resource concerns, the world is currently witnessing a range of preventive measures by governments and industries to ensure access to affordable natural resources or reduce dependency on specific resources. The political nature of the resource markets complicates the challenge, as is the rigid outlook for global cooperation.

3. Analysis of findings

Manufacture According to Figure 1, it can be seen that iron ore, with an average annual growth rate of 10% and a price increase of 400%, simultaneously has the highest production growth rate and a price increase. Iron ore is also a raw material for iron production and was one of the strategic materials in World War II.

Magnesium is the second most abundant element after iron with an average growth of 7.5% per year and a price increase of 300%. Steel can be considered the third highest growth material alongside aluminum, although steel prices have grown by 50% more than aluminum.

According to Table 1, demand for steel will increase by 90% and copper by 60% in 2030 compared to 2010, while demand for aluminum will double, so given the geography of Iran and the capacity of the country's mines, we can gain a position. Higher planned for materials such as iron ore, magnesium, steel, aluminum, copper, oil and gas.

Crude oil is a strategic commodity due to its use in internal combustion engines. In addition, it has an irreplaceable role in the transportation of goods and the transfer of resources. Iran accounts for 2 percent of the world's crude oil. However, oil consumption in the country increases by 4% annually.

Meat, fish and dairy are the third most important source of trade value. While China and Norway's fish exports as the first two countries in the industry were \$ 14.1 billion and \$ 8.8 billion, respectively, Iran exported only \$ 510 million, with very high production capacity. This is while Iran alone has the capacity to produce 4.5 million tonnes of caged fish in the Oman Sea and the Persian Gulf, with only 1.5 million tonnes used. Also, according to Table 1, fish demand for food increased by 20-30% compared to 2010, while growth in meat demand remained at 1.7% per year between 2001 and 2030.

Location and transport and its interactions were among the items discussed in the previous section. As stated in this section, to facilitate trade in natural resources, global transport capacity has more than doubled since 1980, and the quality of infrastructure for transportation of resources is the key to competing countries.

Given Iran's geographical reach and access to open waters, as well as its proximity to 7 countries by land and eight countries by water borders, with improved transportation infrastructure, in addition to improving the security of resources transfer within the country which enhances the efficiency and productivity of industries. As it becomes domestic and improves its food security, Iran can assume the role of regional hub in the transfer of resources.

Water is irreplaceable for many socio-economic activities, such as irrigation, industrial use, and electricity generation, and since there is a close relationship between water and energy, so water is a strategic resource for other important sectors, and freshwater scarcity is one of the most important mutual challenges. Therefore, in addition to the

need for planning to improve and optimize water consumption, preventive measures are needed to prevent the water shortage crisis in the coming years.

4. Conclusion

The main purpose of this study was to examine the trends of world trade and its influential resources in order to plan for optimal management of resources and planning necessary to increase the economic and defense power of the country.

Examination of demand trends and rising commodity prices shows that planning to increase the production of each of the aforementioned items can increase the country's revenues and more ever, on the other hand, countries' dependence on the country's production resources will be raised that is impressive on increasing the national power of the country. Also, attention to the findings of the research, it is observed that in order to prevent potential crises in the field of water scarcity and also with regard to the interaction of water with other industries, consideration should be given to the planning of water desalination and wastewater treatment. In addition, paying attention to the country's transport infrastructure is crucial both in terms of demand and supply in order to secure access to resources.

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