

An Analysis of Patterns of World Economy: Consumption and Economic Growth

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Abstract

The purpose of this paper is to assess the effect of consumption (consumer spending) on economic growth, based on 222 countries/territories in the world, while the effect of other variables that are also assumed to affect economic growth is statistically controlled. The four factors (patterns) of economic growth identified are as follows:

- Factor 1: Consumption-driven economy
- Factor 2: Savings-based
- Factor 3: Oil-resource based
- Factor 4: Government-spending

Empirical evidence shows the predominance of the consumption-driven economy in affecting economic growth across the world, whether developing or developed. Eight variables were found to be significantly loaded in the pattern of the consumption driven economy: consumption, globalization, economic freedom, knowledge economy, global competitiveness, corruption, foreign direct investment, and economic growth. This means the consumption driven economy affects economic growth in multiple ways.

Keywords: Consumption driven economy • Globalization • Knowledge economy • Economic freedom • Factor analysis • Logistic regression analysis

Introduction

There are many theories of economic growth/development. Consumption is one of them. Consumer spending is the amount of money spent by individuals or households in an economy. Consumption is a major growth engine. One of the ways to determine how much economic growth is accomplished is to measure the GDP (Gross Domestic Product). The GDP is based on the following formula:

$$GDP=C+I+G+NX$$

Where C=Consumer spending; I=Business investments; G=Government spending; NX=Net exports.

The equation indicates that, the consumer spending is a vital part of economic growth along with capital investments (both Foreign Direct Investment/FDI and domestic private investment), government spending, and trade (net export). Supply-side economics as a macroeconomic theory explains that economic growth can be most effectively created by investing in capital and lowering barriers on the production of goods and services. The investment and expansion of

businesses will increase the demand for employees and therefore create jobs, which also mean to increase in consumer-spending. Foreign Direct Investment (FDI) inflow does increase economic growth of the recipient countries. This is particularly notable in developing countries where Multinational Corporations (MNCs) via their respective Foreign Direct Investment (FDI) are doing their businesses. Several economists have emphasized physical investment for the accumulation of structures, machinery, business plant and equipment and other tangible assets. Economists have emphasized the accumulation of human capital. Even physical investment is not possible or effective without the human capital.

Literature Review

Theories of economic growth

Globalization does affect economic growth and development. Yet there are pros and cons of the role of globalization in enhancing economic growth and quality of life. Al-Jarrah was critical of globalization, as it has deepened global inequality between the haves

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and have-nots, especially in less developed countries. Al-Jarrah argued for a positive effect of economic globalization *via* free trade, which helped to enhance human well-being. The Global Competitiveness Index (GCI) measures the ability and competitiveness of countries based on their respective 'national/domestic' institutions, administrations, and policies. Terms of trade (export and import) affect economic growth. A favorable term of trade, which is based on an increase in export prices relative to import prices, allows a larger volume of imports to be purchased with a given volume of exports. Thus, favorable terms of trade imply an increase in the real purchasing power of domestic production, which is equivalent to a transfer of income from the rest of the world. They can have large impacts on consumption, savings, and investment as well. On the other hand, unfavorable terms of trade will result in a negative or low economic growth particularly in developing countries, as they rely on the export of a single or a few primary commodities [1].

Types of political system affect the quality of life. Democratic political system with a 'free' market-economy (economic freedom) enhances the quality of life. Russett found that democracies, reflecting political freedom, are efficient in generating wealth and economic growth. While political liberalizations and reforms, with minimal corruption, are required for a sustainable economic growth, China and Singapore, for examples, with their respective 'authoritarian capitalism' have still documented a rapid economic growth without undertaking significant political liberalization. South Korea was able to rapidly develop in the 1970s and 1980s while its political system remained authoritarian. Domar argues that a stronger role for the state is advantageous for equal distribution of income. And the most vulnerable members of societies can be safeguarded by the role of a stronger authoritarian government.

Government spending stimulates economy. The government's purchases of goods and services affect the economy. This theory suggests that the "government spending multiplier" is greater than 1, meaning that the government's spending of \$1 leads to an increase in Gross Domestic Product (GDP) of more than \$1. The other view is rather negative. Government spending may "crowd out" economic activity in the private sector. An excessive defense spending disproportionate to economic capacity siphons off resources, which otherwise could have been used for economic development. There is a trade-off between defense spending and economic growth. Based on 44 developing countries, Benoit argued that there is a positive correlation between military expenditures and economic growth over the period 1950-65, which was still the cold-war period [2]. Benoit establishes trade-offs between the defense spending and domestic investment: every additional dollar spent on defense in developing countries reduces domestic investment by 25 cents and agricultural output by 20 cents. Negative relationship is in between government consumption share and the growth of real per capita GDP. Al-Jarrah examined the causal relationship between defense spending and economic growth for 1970-2003, in which he found that a higher defense spending lowered economic growth in the long run. Kim found countries with greater defense burden retain a lower quality of life regardless of population growth, urbanization, and ethnic diversity.

Urbanization does affect consumer-spending. Urbanization based on concentrated geographic region, cities and towns generate an

aggregate demand, which increases consumer spending as well. The urbanization generates 'agglomeration economies' that benefit cost advantages not only to consumers but also to producers. Knowledge-economy is based on the notion that knowledge, creativity, innovation, and information are the key factors of prosperity and economic development. A superior knowledge capitalization is the driving force of economic growth and productivity, which can offer a sustainable competitive advantage. A resource-based economy depends on natural resources. Dupor and Mehkari Saif [2] shows that the resource wealth has tended to make countries better off. Dupor and Mehkari Saif [2] however, suggest that this may be due only to the income that was generated by resource-rents rather than the growth of output of material. They espouse both 'resource curse' and 'resource trap' theories. The curse theory suggests that countries with abundant natural resources, such as oil, often fail to democratize because the elite can live off the natural resources rather than depend on popular support for tax revenues. The trap theory argues that countries, particularly in Africa, that are dependent on oil, gas, and mining have tended to sustain weaker long-run growth, higher rates of poverty, and higher inequality in comparison with non-oil, non-mineral dependent economies at similar levels of income [3]. Some countries with natural resources are not necessarily creating employment opportunities either. Even oil and mineral revenues have often fueled corruption, which has a severely negative impact on a country's development. Despite the wealth of natural resources, they are rather 'trapped' in poverty and unemployment, as well as corruption.

Both savings and economic growth are closely related with each other. According to the Harrod-Domar growth model, every economy must save a certain proportion of its national income. And the saving was to replace worn-out or impaired capital goods for economic growth. The main obstacle to economic development was a relatively low level of new capital formation, including the savings, in most poor countries. Corruption distorts market, undermining development and making business unsustainable as well. Corruption means to be a lack of market transparency, which can easily have negative impact on consumer spending. According to the World Bank, corruption increases the cost of doing business up to 10% globally. Corruption is clearly detrimental to the global competitiveness of countries. The anti-corruption crackdown could help level the playing field and will also raise foreign capital investment (inflow).

The review of literature thus far indicates there are many theories as well as variables thereof in explaining economic growth and development. Many approaches to the theory of economic growth and development reviewed indicate that the cause/determinant of economic growth/development coalesces around a single or a few variables. This study is based on a multivariate analysis, in which many theories and variables thereof are used simultaneously. The multivariate analysis will be based on factor analysis, which soon will be detailed in the 'Methodology' section below, which produces factors (patterns) out of the diverse variables.

Based on the review of literature and theories, the following 15 variables were selected. Each of the variables is operationalized/measured as follows. Globalization based on the KOF Index of Globalization, which measures the three dimensions of globalization: economic, social, and political. Global Competitiveness Index (GCI) measures a set of domestic institutions and policies for their

respective global competitiveness: The index indicates 'national/domestic' competitiveness worldwide [4]. It is calculated by dividing the value of exports by the value of imports, then multiplying the result by 100. Favorable term of trade is over 1, while unfavorable. Economic freedom/Economic Freedom Index based on trade freedom, business freedom, investment freedom, and property rights. A measure that accounts for both private and public savings, government expenditure as a percentage of GDP. Natural increase per 1,000 populations based on the difference between birth and death rates of given population. This study is cross-national comparative analysis of the 222 countries in the world. The data cover the 2012-2018 periods. Countries have different time/year for their respective data availability for each of the 15 variables during the period covered. The cross-national (cross-sectional) comparative analysis does merit the followings. The benefit of a cross-sectional study design is that, it allows researchers to compare many different variables at the same period. Since so many variables across the 222 countries are used in this study, the longitudinal analysis amenable to a few variables for a longer period cannot be a suitable research design. Second, the cross-sectional studies based on many cases (countries) as well as on many variables can also sort out causal relations between the variables *via* statistical control, such as regression or factor analyses. This non-experimental cross-sectional design, like an experimental design, can still establish a causal relation between variables *via* statistical, not experimental, control.

Results

Table 1 presents a factor analysis, in which four factors were found out of the 15 variables. The purpose of factor analysis is to identify different pattern/s of economic development out of the 15 variables which are assumed to affect economic development. The four factors (patterns) identified are as follows:

- Factor 1: Consumption-driven;
- Factor 2: Savings-based;
- Factor 3: Oil-resource;
- Factor 4: Public/government spending.

Eight out of the 15 variables were significantly loaded in Factor1, while in Factor 2 with three variables, in Factor 3 and 4 each two variables, respectively. Out of the four factors in Table 1, Factor 1 is the only factor that significantly loads consumption/consumer-spending. The factor loading of each variable that is >0.50 is considered significant, although that criterion varies depending on different analysts. The cutoff points are somewhat subjective, which should be determined by researcher. Eigenvalue (%) at the bottom of each factor indicates the percent of total variance accounted for by each factor.

Table 1: Patterns of world economy patterns of economy.

Variables	Factor 1	Factor 2	Factor 3	Factor 4
Corruption	0.941	(ns)	(ns)	(ns)
PPP	0.941	(ns)	(ns)	(ns)
GCI	0.893	(ns)	(ns)	(ns)
Consumer	0.885	(ns)	(ns)	(ns)
Ecofree	0.882	(ns)	(ns)	(ns)
KEI	0.854	(ns)	(ns)	(ns)

Global	0.802	(ns)	(ns)	(ns)
FDI	0.783	(ns)	(ns)	(ns)

For example, Factor 1 with the largest Eigenvalue (45.7%) indicates that the Factor 1/factor was found the most predominant pattern of economic growth, followed by Factor 2 (19.3 %), Factor 3 (10.7%) and Factor 4 (7.1%) in descending order. The consumer-spending/consumption variable is significantly loaded in Factor 1 along with other seven variables: Economic Growth (GDP/PPP), corruption, Global Competitiveness Index (GCI), economic freedom, Knowledge Economic Index (KEI), globalization, and Foreign Direct Investment (FDI) variables. This cluster of eight variables, including the consumption, underlined goes together. These variables are significantly loaded in Factor 1, which is named as 'consumption driven economy.'

The consumer-spending was found significantly associated with not only economic growth but also globalization (both 'domestic' and 'international'), corruption, economic freedom, knowledge economic index, and Foreign Direct Investment (FDI). This means the consumption-driven economy is 'multidimensional' in affecting economic growth. The consumption affects economic growth in association with globalization. The globalization measured by the KOF Index does indicate 'international/external' world-wide interdependence and interconnectedness of a country, while the global competitiveness measured by the Global Competitiveness Index (GCI) is based on 'national/domestic' institutional and policy/political areas that are compatible with the global standard. Both globalizations, international/global and domestic, are not only highly correlated each other, but also they each are highly correlated with the consumer-spending as well. A high corruption index indicating a high (not low) transparency in free market system was found to have positive effect on economic growth. A high transparency associated with a lower corruption is one of the conditions required for a free market to be efficient as well. Lower corruption indicates a fairer market and economic freedom. The lower the corruption, the higher the 'fairness' in the free market, all of which facilitate consumer-spending as well, which has positive effect on economic growth [5].

Both Knowledge Economy (KEI) and Foreign Direct Investment (FDI) were found conducive to enhancing the globalizations, global/external and domestic/institutional, all of which were found to facilitate consumer-spending. The Knowledge Economy Index (KEI) which is based on information, communication, technology, economic innovation, and incentive was found as a very significant and positive ingredient in facilitating the consumption-driven economy. The Foreign Direct Investment (FDI) as an ingredient of the economic globalization was found significantly associated with the consumption driven economy that is positively associated with economic growth as well. Factor 1 is labeled as a "consumption-driven economy. Factor 2 loads three variables: domestic savings (Savings), domestic investment, and Terms of Trade (TT). There is a positive correlation between the three variables: domestic savings, domestic investment, and terms of trade. Countries with a high savings feature a high domestic investment as well as with sustaining export-oriented economy as well as favorable terms of trade. Yet none of the correlations between the three turns out to have significant 'independent' effect either on economic growth or on consumption [6-8].

None of the three variables loaded on F2 was found to have a significant effect on the consumption. Factor 3 was found to have both oil (Oil) and military expenditure variables significantly loaded, indicating oil resource is very important sources of defense spending. Yet none of these two highly correlated variables, oil and defense spending, was found to enhance economic growth nor do they have any significant effect on consumption. Neither the oil richness nor the heavy defense spending was found to affect economic growth and consumer spending. Factor 3 is called 'oil resource based economy. Factor 4 was found to significantly load population growth and government spending, indicating that population growth was found significantly correlated with the government (public) spending. Yet the correlation between the two is negative. This means that the population growth diminishes the 'size' of the government spending. The government spending-based economy, which is affected by population growth, was found to have significant effect neither on economic growth nor on consumption.

This dichotomous (binary) classification is applied for the remaining continents as well. The dichotomous variable is treated as dependent variable, while all the eight variables loaded significantly in Factor 1 (consumption- driven economy) as independent variables. Those eight variables are: corruption, PPP, Global Competitiveness Index (GCI), Consumption (consumer), economic freedom, Knowledge Economy Index (KEI), Globalization (Global), and Foreign Direct Investment (FDI). And the Waldo statistics indicates the level of significance of each independent variable in contributing to the likelihood or unlikelihood of the uniqueness to each continent. Again, Asia in Table 2 shows that out of the eight independent variables, GCI (Global Competitiveness Index), PPP, and Globalization were each found to significantly differentiate between Asia and the rest of world/countries. The GCI (4.319) means that Asian 'economies' has been sustained by a high 'domestic' political, institutional, and policy competence needed for global competitiveness, which is more likely to differentiate between Asia and the rest of the world countries. Yet globalization indicates that Asia documents a lower 'external' globalization than the rest of the world countries.

Table 2: Globalization, corruption, and knowledge economy in Europe.

Indications	B	Wald	Sig
Global	0.285	3.746	0.044
Corruption	-1.915	7.235	0.038
KEI	0.023	4.9	0.033
Consumer	0	1.409	ns
FDI	98.441	1.974	ns
PPP	-0.401	0.153	ns
GCI	0.146	0.007	ns
Ecofree	-0.136	2.654	ns
Constant	-14.646	2.855	0

Conclusion

Pattern of world economic growth was found diverse. Four patterns were identified:

- Consumption-driven
- Savings-based
- Oil-rich based
- Government spending

The consumption-driven economy is the most predominant pattern of world economic growth. The four continents (Asia, Europe, North America, South America) in the world were found to commonly be based on the consumption-driven economy, which is associated with economic growth. The continent of Africa was found to have no significant effect of the consumption-driven economy on economic growth. The consumption-driven economy based on the consumption is multidimensional, which was found to be significantly affected by knowledge economy, globalization (global and domestic/national), global competitiveness, economic freedom/free market system, urbanization, and corruption indicating fairness of market (a high transparency), and Foreign Direct Investment (FDI/inflows). In its effects on economic growth, the consumption-driven economy is not one-dimensional solely based on the consumer-spending. It was found multidimensional beyond a singular consumer-spending variable in affecting economic growth. As far as consumption-driven economy is concerned, none of the five continents, except Africa, was found to be differentiated from each other by the consumption-driven economy. This means consumption-driven economy is virtually universal, rather than continental, in its effect on economic growth.

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