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The Driving Forces Underlying the Growth of Total Factor Productivity in Cambodia

Quantitative and Qualitative Studies

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Abstract: This case study explores the driving force of the productivity growth in Cambodia, one of the least developed countries. Quantitative and qualitative studies were used to analyze the source and impact of the input factors on the nation's productivity growth. For a quantitative study, a small panel data set was formed that allowed the adoption of a simple linear regression and a non-parametric approach of divisia index as the main methodologies for the quantitative analysis. Beside the conventional inputs of the growth model, the study selected the energy consumption and the aid and investment in the telecommunication sector to be additional factors of the growth. The selection of additional factors was based on the consistent precedents in literature that highlighted the important of each variable, and the availability of the data and the background of the country. The properties of the estimation were used for another empirical step to examine Total Factor Productivity (TFP), which in this study is a proxy of the national economic growth. The focus of the study was to explore the direct contribution factors of the productivity in Cambodia by performing the second regression of TFP. For qualitative analysis, a successful country case will be reviewed and used as development references. Referring to the results of both analyses, suggestions and policy implications are offered.

Keywords: Regression analysis, total factor productivity growth, economic growth, benchmark parameter, Korean economic development.

JEL Classification Numbers: C23, C30, C33

1. Introduction

1.1. Overall Concept of Productivity

Productivity growth due to technological innovations makes it possible for firms/countries to produce more goods and services with the same amount of input units. According to the Economic Commentaries No. 1, 2009 on Understanding Productivity Growth, higher productivity growth indicates and allows a nation to grow faster without increased cost pressures and, ultimately, inflationary pressures. The question can be raised as to what are the necessities and the driving forces (challenges) for a nation to have higher productivity growth? John Van Reenen analyzed the reason for productivity divergence between Europe and the US. He offered two broad classes of explanations in the literature for the cause of the US productivity miracle. First, there was a natural advantage for firms being located in the US where the geographic, business, or demographic environments (such as more space or younger works) are favorable conditions. Second, the US firms have better organizational or management practices.

Another interesting paper written by Thomas Barnebeck Andersen and Carl-Johan Dalgaard (2006) relates to analysis of TFP determinants. Cross-border flows of people, technology diffusion, and aggregate productivity highlighted the vast differences in TFP across countries, which, in turn, provided a proximate explanation for the vast differences in GDP per capita across countries. An important part of the differences in TFP presumably reflects true technological differences, raising the question of why countries differ in their ability to adopt innovations. The authors argued that empirically, cross-border flows of people are centrally important in explaining flows of ideas and knowledge. The idea is that societies that are more exposed to foreign influences, as measured by inflows and outflows of travelers, can better obtain technologies and organizational strategies from abroad. The authors also highlighted that an increase in travel intensity substantially raises the level of TFP in a country. In particular, the country with the highest travel intensity has a level of TFP that is more than twice the level in the least integrated country.

Background of Cambodia's Productivity Sector. Up until now, one can see that Cambodia is still facing the problem of achieving sustained rates of productivity growth that could help it to alleviate widespread poverty. The contribution of the industrial sector was the main engine of growth, and that includes tourism and garment manufacturing as the major sources of finance for the country. Like many other developing countries, Cambodia also relies on foreign aid which is another core source for the country's economy sustainability. With these conditions, Cambodia was experiencing double digit growth rates such as 12.6%, 10%, 13.4% in 1999, 2004 and 2005¹ respectively, with similar growth asserted by the Prime Minister in the last few years.

The address of the Prime Minister to the Cambodia Investment, Trade and Infrastructure Conference during November 30th to December 1st 2005, could have been an indication of the story behind this economic success in these years. The indication that the

¹ Source: National Institute of Statistics of Cambodia

Prime Minister addressed in the conference was that “during the last ten years, Cambodia has gone through a sweeping change not only in political but also in economic and social landscape. The country has achieved successfully its transition from a centrally planned economy to a market economy, from a one-party regime to a democratic and liberal multi-party regime, from political instability and a war torn country to a peaceful country. To restore and rehabilitate an economy ravaged by the war, a close partnership between the Royal Government of Cambodia, the Private Sector and Civil Society has been established with the generous assistance of our international development partners, through the continuous consultation and dialogues of the various reforms and technical working groups.”

He also added that Cambodia needs to establish a solid foundation for economic growth and ensure Cambodia’s long-term comparative advantages according to the priorities for the development of the following sectors:

- Agriculture and Agro-Industries by giving priority to agricultural irrigation;
- Transportation and telecommunication infrastructure;
- Energy and electricity;
- Labor-intensive and export industries;
- Tourism; and
- Human resources development.

Nonetheless, Cambodia was not succeeding in maintaining consistent growth rates for all these years. There were several factors influencing the fluctuating rates in this economy. The opaque policy/regulatory reform and the dramatic global economic crisis determined Cambodia’s economic raise and fall.

1.2. Analysis of the Scatter/Overall Status in Cambodia

Cambodia has come along remarkably well in recent years. The flourishing economic and social performance continues to prevail in Cambodia after the end of the civil war, which lasted from 1970-79 and completely devastated the country, with its effects still being felt today. The victorious signing of the Paris Peace Agreement in October 1991 effectively opened Cambodia’s borders to the outside world after almost two decades of isolation. (For example, the Clinton administration left economic trade embargo on Cambodia in 1992).

Cambodia cannot ignore the trend towards regional integration. Under the commitment from the government, Cambodia became a full member of the Association of South-East Asian Nation (ASEAN) in April 1999. This brought Cambodia close to its development premise. Likewise, most formerly closed economies are now increasingly market-oriented, Cambodia has also embraced economic reform with an unusual firmness. Cambodia has already enacted an investment law, and laws establishing a commercial register and a chamber of commerce were passed in 1995. A law on the organizational conduct of the National Bank of Cambodia was also passed that year. With these fresh reforms, Cambodia was regarded as a business-friendly government in a country that lies at the heart of the only region in the developing world that has shown clear promise of graduating from the

development class. It has much to offer investors who are ready to brave the challenges that an underdeveloped economy invariably offers.

Nevertheless, Cambodia still has more than a few challenges, as concluded by several research reports from the United Nation, the World Bank and other international foreign donors. The UN mentioned in An Investment Guide 2003 research report that in the case of Cambodia, the major challenges are not hard to identify. Perhaps the most importance is human resource development. The advantage of being located in a dynamic region is counterbalanced by the competition that the neighborhood offers. The innate capacities of Cambodians have been on display at Angkor for a thousand years. Their development of skills that power a modern economy is something yet to be accomplished. Although investors speak positively about the trainability and capacity for hard work of the country's labor force, they also stress repeatedly that the training it has received is clearly inadequate. This is why Cambodia needs to develop and modernize its education to meet the required skills.

Until now, Cambodia is still regarded as a country that lacks an infrastructure, both soft and physical. Although the investors note the improvements in and near the urban centers, most of the population is rural. Access to rural areas is a serious problem, especially if investment related to agricultures is to be expected. There are also challenges less daunting but nonetheless fundamental in the inadequacy of the regulatory and institutional framework. It must be said that the government has been making a sustained effort to fill legal and regulatory gaps, in particular with a view to the country's accession to the WTO. Two other issues requiring attention are porous borders and non-transparent governance.

1.3. The Structure of Cambodia's Economy Context

Growth in the Cambodian economy has averaged 7% on an annual basis since the government began its measured shift towards free market economic policies in the late 1980's. Through this time, the country has been supported financially by many international organizations, including the Australian government, to promote economic and social development. The Cambodian economy continues to make a significant transition from a traditionally agrarian economy to one based on industry and services. Since 1995, the agricultural sector's contribution to GDP has fallen from around 45% to 31%. Despite this, agriculture still plays a pivotal role in society, accounting for 70% of employment. Rice is grown by approximately 80% of rural families and accounts for 90% of Cambodia's total cultivated land. However, the sector remains significantly exposed to weather conditions in most areas of the country. Government policies aimed at reducing the volatility of agricultural production is having some success, with a significant growth in crop production in 2005 assisted by investment in irrigation projects. These efforts have started with the 2006 budget providing for increases in expenditures directed toward the modernization of agriculture and irrigation infrastructure.

Over the last decade, the rapidly expanding industrial sector has been a key driver of economic growth for Cambodia. This sector is dominated by manufacturing and construction. Construction has accounted for around 5-6% of GDP since 1995, primarily

due to infrastructure, residential and hotel construction. However, it is the manufacturing sector, and in particular garments/textiles production, that has driven the industrial growth. Over the last decade, the garments industry has grown from just over 1% of GDP to around 15% as of 2005. Relatively low wages have kept garments competitively priced, such that they are Cambodia's key export, and also its largest earner of foreign exchange. It is also the single largest non-agricultural employer with around 230,000 employees and 200 factories.

Significantly, the industry has been able to weather the ending of the Multifibre Agreement (MFA) in early 2005, which had given the industry preferential treatment to US and EU markets. The conclusion of the MFA had been widely expected to severely impact the industry. However, since January 2005, the Cambodian garment industry has actually been able to increase its market share of imports into the US and domestically, more garment factories have opened than have closed. Cambodia's garment manufacturers are now reaping the rewards of significant labour market reforms that have markedly improved domestic working conditions and productivity. The International Labor Organization, which monitors the improvements in Cambodia's factories under the Better Factories Cambodia initiative, cites improvements in conditions and efficiencies that have allowed the industry to flourish in the post-quota trade environment.

With the agricultural sector falling to around one-third of GDP and industry climbing to over a quarter, the constant over the last ten years has been the services sector. Through trade, hospitality, business and financial services, and real estate, this sector generates over 35% of GDP, and has done so for the last decade. The sector has been able to grow in line with the overall economy due to the significant growth of tourism. Visitors continue to flock into Cambodia, increasing over 43% in 2005 and have so far expanded over 17% in 2006 to July (compared to the same period in the prior year). Tourists predominantly come from the Asian region, accounting for over 50% of tourist arrivals, while Europe and the US are also significant tourist sources.

Table 1. Composition of GDP-Expenditure (% of total)

	2002	2003	2004	2005
Private Consumption (%GDP)	84.30	84.10	83.70	85.70
Annual growth rate (%)	5.90	8.10	12.50	12.30
Government Consumption (% of GDP)	5.30	5.50	5.40	4.60
Annual growth rate (%)	9.80	6.20	-5.70	2.70
Gross Fixed Capital Formation (% of GDP)	16.30	19.20	18.50	18.40
Annual growth rate (%)	25.00	4.70	9.00	15.40
Imports (% of GDP)	62.90	67.80	70.90	77.30
Annual growth rate (%)	14.40	13.70	19.80	18.00
Export (% of GDP)	54.00	57.50	59.00	68.90
Annual growth rate (%)	13.10	11.30	28.40	16.80

Source: This table was extracted from the ANZ economic report.

Based on the above economic description, this study aimed to investigate the major enhancing factors of the growth of productivity in Cambodia through regression models, using a macroeconomic time series data set and case studies from successful leading countries.

2. Literature Review

Over time, the concept of total factor productivity (TFP) growth is more emphasized in research. The advantage of this concept is in its ability to explain productivity for all the inputs used in the production process. TFP can also reflect technological progress that takes place in a country. Even though TFP growth does not mean only technological improvement, but also improvement in the quality of inputs or efficiency due to factors such as management, the development of skilled labor etc. There is abundant case study literature documenting how new technologies and know-how are adopted by firms and industries.

The changes in the global economy required recent academic research to extend the subject on the content of growth when conventional sources were just using capital and labor. Several researchers have been interested in discovering the relationship between globalization and productivity growth. Others have drawn attention to the contribution of information communication technology (ICT) in the development of the country. The general concept of globalization² is a multifaceted, multidisciplinary topic in its broadest sense. It includes not only economic topics, but also political, social, cultural, and ideological ones. Deciding to focus on the economic aspects of globalization still leaves many doors open since economic globalization has both microeconomic and

² Stallings B.: Globalization and Liberalization: A view from the developing countries.

macroeconomic aspects. In the economic empirical research, trade openness, the flow-in of FDI, and aid are employed to be a proxy of globalization. The globalization index which is the aggregated dimension of the economic, political and social fields is available to be used for a comprehensive study of globalization and productivity growth research.

Baskara and Vadlamannati (2009) observed the growth effects of globalization in the low income African countries. The authors used a globalization index developed by Dreher (2006) with a systems generalized method of moment (GMM) panel data approach for the period 1970 to 2005. The results showed a small but significant positive association between globalization and economic growth for a panel of 21 low income African countries. FDI is also supposed to be a growth-enhancing factor in financing the country. A number of empirical studies have tested this by investigating the impact of FDI on economic growth. Balasubramanyam (1996) incorporated FDI into the augmented production function as an additional explanatory variable and examined the impacts of FDI on growth in 46 developing countries adopting different trade regimes. He found that the effects of FDI on economic growth are higher in outward-oriented economics relying on import substitution policies.

Cuyvers et al (2008) studied the productivity spillovers from FDI in the Cambodian manufacturing sector. They estimated an augmented Cobb-Douglas production function using a detailed data set at the firm level from the 2000 survey of industrial establishments covering two cities and nine provinces of Cambodia. Through several statistical diagnostic tests, the study results showed that the increases in foreign equity participation are positively correlated with increases in labor productivity. The analysis also shows that the coefficients of the two proxy variables for the influence of foreign owned enterprises are positive and highly significant, signifying that FDI played a positive role in enhancing labor productivity in the Cambodian manufacturing sector. Similarly, capital intensity was also shown to positively affect domestic labor productivity.

The evolution of the ICT has transformed the global society into a more information and knowledge-based place. The comprehensive research by Jalava J. and Pohjola M. (2007) on using ICT as a source of output and productivity growth seems to corroborate the statement. In their study, the Tornqvist index is used in aggregations and computations of growth contributions. The volume growth is weighted with the average t and $t-1$ nominal shares. The result shows that the ICT production's GDP share is 5.10 per cent and its volume growth 17.74 per cent. The growth contribution is 0.87%. The manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy had a ratio of value-added to GDP of 4.1% and boasted a volume growth of 19.73% per annum from 1995 to 2005. Moreover, the decomposition of aggregated multi-factor productivity reveals that, of the total increase at the rate of 2.07%, 1.41% came from ICT production and 0.66% from other production. Hence, almost 70% of the aggregate MFP growth can be attributed to the new technology.

The above literature review gives an idea about the two different trends of researchers who have different interests in the productivity growth studies. There are quite a number of references on Cambodia's productivity study that mostly employed only economic indicators such as GDP, FDI, labor intensity and so on for the analysis. Therefore, this

study will mix both the ICT dimension and all economic dimensions discussed in the data section. This research explicitly investigates the determinants of economic growth in Cambodia using quantitative and qualitative approaches. First, these approaches allow one to identify the factors explaining the productivity performance in Cambodia over the period of 1993 to 2006. Second, a case study from successful advanced countries will be presented. Therefore, based on this formal statistical inference and learning from case studies, the research will propose a policy implication which is the best fit to the Cambodia case.

In the remainder of this document, the data and determinants of the models are described in the next section. In the fourth section, the detailed methodology for the analyses are presented. The fifth section contains the empirical results, and the sixth section has conclusions and suggestions.

3. Data and Model Determinants

Unlike in the previous growth essay, this study uses only one non-parametric approach for TFP measurement. The reason for selecting a non-parametric approach is due to the limited data in Cambodia. The provincial/sectoral data is not available; hence macroeconomic data is used instead from the World Bank and International Energy Agency for the period of 1993 to 2006. A small simple data set of 14 observations was formed and used for the empirical study. A few missing data are generated using an imputation method.

There are 8 variables are used for the empirical analysis. They are GDP, gross capital formation, total labor force, energy uses, foreign direct investment, aid, investment in telecommunications, and arable land.

GDP. In some studies, gross national product (GNP) is used to assess the performance of a nation's development. In this study, gross domestic product (GDP) is used as a measurement of the size of Cambodia's economy. GDP is the market value of all the goods and services produced in the country, which is a direct indicator for evaluating the growth. This complies with the neoclassical theory of economic growth; gross capital formation and labor force are used as initial resources.

Gross capital formation. Formerly called gross domestic investment, it consists of outlays for additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and includes "work in progress." According to the 1993 SNA, net acquisitions of valuables are also considered capital formation.

Total labor force. It is comprised of people who meet the International Labour Organization definition of the economically active population: all people who supply labor

for the production of goods and services during a specified period. It includes both the employed and the unemployed. While national practices vary in the treatment of such groups as the armed forces and seasonal or part-time workers, in general the labor force includes the armed forces, the unemployed and first-time job-seekers, but excludes homemakers and other unpaid caregivers and workers in the informal sector.

Energy consumption. Energy also has the attention of scholars who believe it contributes to economic growth. In this study, energy consumption is used to be the proxy of energy indicator. WDI defines energy consumption as the use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport. This data was obtained from the International Energy Agency (IEA).

Total aid (current \$USD). A question about the effectiveness of the financial gap approach³ mentioned that most aid advocates agreed that aid could have promoted investment instead of all going into consumption. They are also likely to suggest that aid should have been made conditional on matching increases in a country's saving rate. This way would have given the governments in poor countries incentives to increase their own savings and to promote private savings. The latter can be done by a combination of tax breaks for income that is devoted to savings and a tax on consumption. The increase in savings would have kept the aid recipients out of debt troubles and would have promoted an increase in investment. Having aid increase with the country's saving is the opposite of the current system, where a country with lower savings has a higher financial gap and so gets more aid. In this analysis, the data of total aid includes both official development assistance (ODA) and official aid obtained from WDI.

Foreign direct investment (current \$USD). In the developing countries like Cambodia, FDI is considered a major driving force of capital sources in the country. The International Monetary Fund (IMF) defines foreign direct investment as the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows in the reporting economy.

Investment in telecommunications (current \$USD). According to a report of Cambodia's Minister in the Ministry of Economic and Finance, the aid received is allocated to develop ICT in order to comply with the national rectangle strategy. Therefore, the study uses the investment in telecoms with private participation (current \$USD) data as a proxy of ICT development in the growth analysis. According to the WDI definition, it covers infrastructure projects in telecommunications that have reached financial closure and directly or indirectly serve the public. Movable assets are excluded. The types of projects included are operations and management contracts with major capital expenditures,

³ Reference: Easterley, William. 2001. *The Elusive Quest for Growth, Economists Adventures and Misadventures in the Tropics*. The MIT Press. p37-38
http://www.ecomlink.org/NetGrowth/ICTWorkshop/FAQ_global.asp?CategoryID=a73&FAQID=658&PartnerLong=OpenCityPortal&Language=English

greenfield projects (in which a private entity or a public-private joint venture builds and operates a new facility), and divestitures. Investment commitments are the sum of investments in facilities and investments in government assets. Investments in facilities are the resources the project company commits to invest during the contract period either in new facilities or in expansion and modernization of existing facilities. Investments in government assets are the resources the project company spends on acquiring government assets such as state-owned enterprises, rights to provide services in a specific area, or the use of specific radio spectrum.

Arable land. The agricultural sector is one of the main sources of growth. The 2004 statistics shows the growth rate was estimated to have slowed to between 4 to 4.5% on account of a lower increase in agricultural production and also protracted structural weaknesses in the non-agricultural sector. The arable land in Cambodia is consistent with the same area of 3,700,000 sq. km. for the entire period of study. Therefore, it is not effective to include the arable land variable in this estimation model. The analysis on arable land is provided in the qualitative study in the later section.

Foreign direct investment. is not a double counting on Gross capital formation. Foreign direct investment, first year flown is reported as investment however, it (some parts) may end up being an asset for a nation which might be integrated with capital formation. The possible mix in the two variables may happen after one year and subsequently not affecting the contemporaneous estimation result negatively.

For three of these variables, a GDP deflator is used to convert the nominal data of the variables for investment in telecommunications, foreign direct investment, and aid.

3.1. Methodology for Analyses

3.1.1. Quantitative analysis

The focus of the research is to investigate the influencing factors of the productivity growth in Cambodia. The Divisia index method is adopted for computing the Solow residual productivity growth. Divisia indexes are non-parametric and have a number of attractive properties. It can be shown to be unbiased, subject to certain assumptions regarding underlying production, and thereby eliminating index-number bias related to base year choices.

The basic formula is introduced below:

$$DivisiaTFP = \dot{y} - \sum_j S_j \dot{X}_j \quad (1)$$

Where $\dot{y}$ is the growth of GDP in year t ($\dot{y} = (y_t - y_{t-1}) / y_{t-1}$), S_j is the co-efficient

value of input j and $\dot{X}_j$ is the growth of input j . S_j is obtained from the simple regression model which is performed on the GDP and Capital, labor, energy consumption, FDI and Land. The equation of OLS estimation is presented below:

$$y_t = \beta_o + \beta_k K_t + \beta_l L_t + \beta_e E_t + \beta_a A_t + \beta_i I_t \quad (2)$$

This model uses a translog base.

3.1.2. Qualitative Analysis

Although several studies on how generating sustained economic growth in ASEAN countries remains the most pressing challenge to global development, little is known about the direct determinants of economic growth in Cambodia. Owing primarily to the lack of the data (reliable data) or assessing growth based on a small set of data, evidence on economic development in Cambodia has mostly been untrustworthy. Although the last decade has witnessed a proliferation of possible explanatory variables, there is little guidance from economic theory regarding which variables to include in the growth regression.

This research merges the results from the empirical assessment above and the country case study to explore the driving factors of productivity in Cambodia. A successful case study of Korea will be selected to benchmark the overall analysis, and policy implications will be drawn accordingly.

4. Empirical Results

Table 2. Overall Data of Cambodia Used for the Empirical Study

Year	Gross Capital Formation	Total Labor	Energy Use	Total Aid	FDI	GDP	Invest. in Telecom
1993	298590624.00	4686591.17	294.32	3756375.00	676550.00	2211198976.00	218750.00
1994	299862976.00	4801936.62	295.71	4123026.32	906578.95	2412406272.00	125000.00
1995	410408640.00	4942286.62	297.10	6482352.94	1774117.65	2567835392.00	17647.06
1996	427017280.00	5092386.20	298.50	4733295.45	3336363.64	2706815232.00	90909.09
1997	472748800.00	5258887.04	304.80	3644891.30	2214130.43	2858932736.00	847826.09
1998	361938688.00	5465993.77	312.00	3340990.10	2208217.65	3002137600.00	136633.66
1999	568449344.00	5625215.76	311.50	2691456.31	2166473.10	3359684864.00	10679.61
2000	640548224.00	5795700.99	312.80	3958700.00	1419105.48	3654221312.00	24000.00
2001	758904000.00	5976596.79	322.40	4029320.39	1379703.66	3947970816.00	233009.71
2002	850468800.00	6157009.56	326.70	4701456.31	1350294.79	4206135040.00	275436.89
2003	1032252992.00	6317105.16	332.00	4898190.48	707806.20	4564028928.00	161904.76
2004	933389824.00	6537773.61	339.90	4392090.91	1101574.81	5021293056.00	68181.82
2005	1219483648.00	6732901.73	344.00	4625641.03	3204292.23	5697206272.00	588034.19
2006	1472994176.00	6945245.85	351.30	4339672.13	3892029.19	6314452480.00	409836.07

4.1. Quantitative Analysis

4.1.1. Analysis of the Overall Data

Table 3 summarizes the minimum, maximum, standard deviation and mean of the remaining seven variables. It shows that Cambodia is unlike other developing countries

that rely heavily on international aid to sustain their economic development. In this analysis, the total aid received ranges from USD 2.69millions to USD 6.48millions which is almost twice as high as the foreign direct investment in the study period. According to the table, the investment in the telecommunication sector ranges from USD 0.01 million to USD 0.85million which accounts for 0.01% of the total GDP and around 13% of the total foreign aid. The source of this investment is the contribution of the allocation of official aid together with the private participations.

Table 3. Summary Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Year	1,999.50	4.18	1,993.00	2,006.00
GDP ^a	3,751.74	1,272.54	2,211.20	6,314.45
Gross Capital Form. ^a	696.22	364.22	298.59	1,473.00
Total Aid ^a	4.27	0.88	2.69	6.48
Foreign Direct Invest ^a	1.88	1.01	0.68	3.89
Invest in Telecom ^a	0.23	0.24	0.01	0.85
Labor Force ^a	5.74	0.73	4.69	6.95
Energy consumption	317.36	19.02	294.32	351.30

^a: in Million

Figure 1 shows the trend of growth in FDI and telecommunication investment. In the early studied period, the investment in telecommunications infrastructure reveals a downward trend which is opposite the trend of the FDI. The reason is that the telecommunications sector is yet to be considered an important and immediate needed for the country's development. The government seems to have an attitude toward adopting FDI instead by creating an environment for private sector investment. The government is fully aware that if the country is to achieve its development goals, it cannot rely on foreign aid and assistance indefinitely because the real economic growth and development lie in the private sector.

In 1994, the law on investment was created with the aim of streamlining the foreign investment regime and providing generous and competitive concessions for direct private sector investment. This is positive for attracting the flow-in of FDI to the country. The graph reveals the upward trend of the FDI from the starting year until 1996 where it dropped down about 34%, and 48%⁴ due to the economic crisis in 1997 and the impact from the global oil crisis in 2003 respectively. The majority of FDI comes from the neighboring countries of Vietnam, Thailand and from others within the region like Korea, China, Malaysia, and Taiwan. FDI is largely concentrated in the garments and tourism sectors. Most of the foreign owned assets are in the hotel, restaurant and other manufacturing sectors.

⁴ The table of the figure will be in the appendix (Table 6).

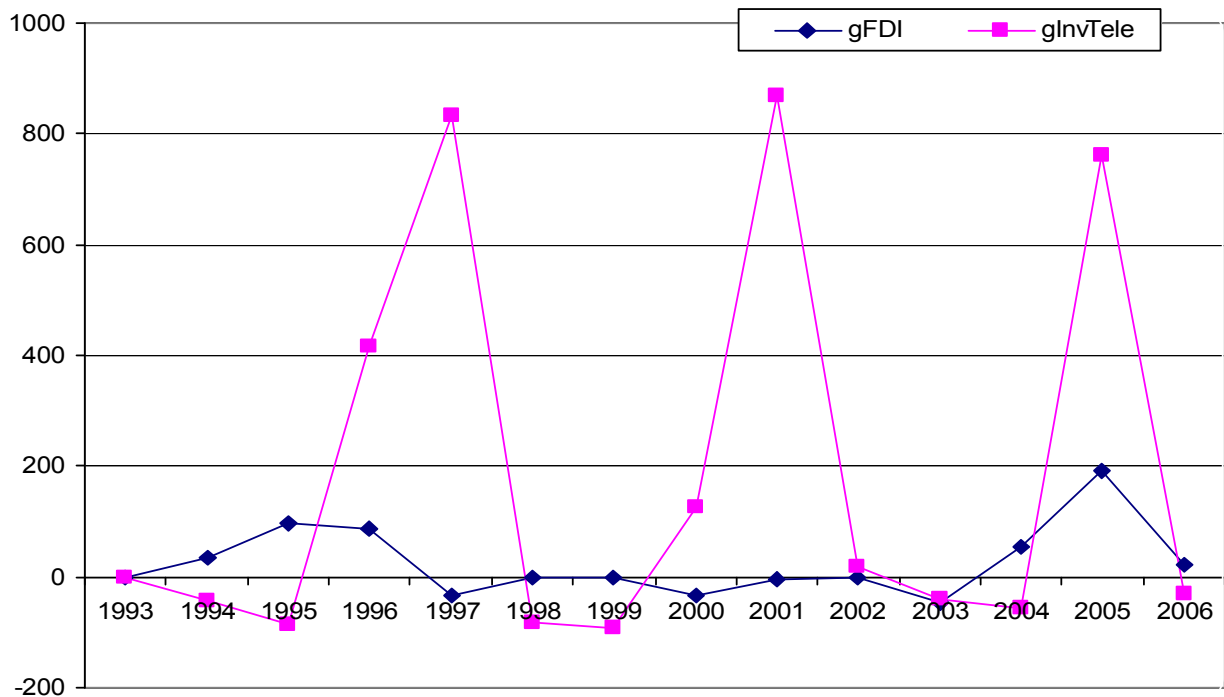


Figure 1. Trending Growth of FDI and Telecommunication Investment

4.1.2. The Relationship Between Indicators

Table 4 shows the relationship between the seven variables. Four out of seven variables are statistically significant and are high correlated with time. Gross of capital formation, labor force, energy consumption and GDP are approximately 95% increasing over time. However, the variables of FDI, total aid and investment in telecommunications infrastructure show no correlations or with time. GDP reveals a high and positive correlation with the other variables of capital formation, labor and energy consumption at 98%. Statistically, energy consumption also shows a high relationship with labor force at 99% and with gross of capital at 96%. However, FDI, total aid and investment in telecommunications does not seem to show a relationship with any other variables. This is proved by the indefinite fluctuations of these variables over the time period 1993 to 2006.

Table 4. The Relationship Between Indicators

Variables	Gross of Capital	Labor Force	Energy consump.	Total Aid	FDI	GDP	Telecom Invest.	Year
Gross of Capital	1							
Labor Force	0.95563 <.0001	1						
Energy consumption	0.96079 <.0001	0.99021 <.0001	1					
Total Aid	0.16993 0.5614	0.04214 0.8863	0.05325 0.8565	1				
FDI	0.38997 0.1681	0.32215 0.2613	0.31656 0.2702	0.0044 0.9881	1			
GDP	0.98481 <.0001	0.98091 <.0001	0.98735 <.0001	0.10141 0.7301	0.3938 0.1636	1		
Telecom Investment	0.30761 0.2847	0.23355 0.4216	0.26702 0.3561	- 0.704	0.36647 0.1975	0.2761 0.3393	1	
Year	0.94606 <.0001	0.99852 <.0001	0.98292 <.0001	0.0426 0.885	0.31814 0.2677	0.97121 <.0001	0.22852 0.432	1

4.1.3. Analysis of Behavior of the Data

Figure 2 below presents the variation of all explanatory variables used for the empirical study. Here the data is normalized to 100 as the base point. The figure reveals the unsmooth trends of all the variables.

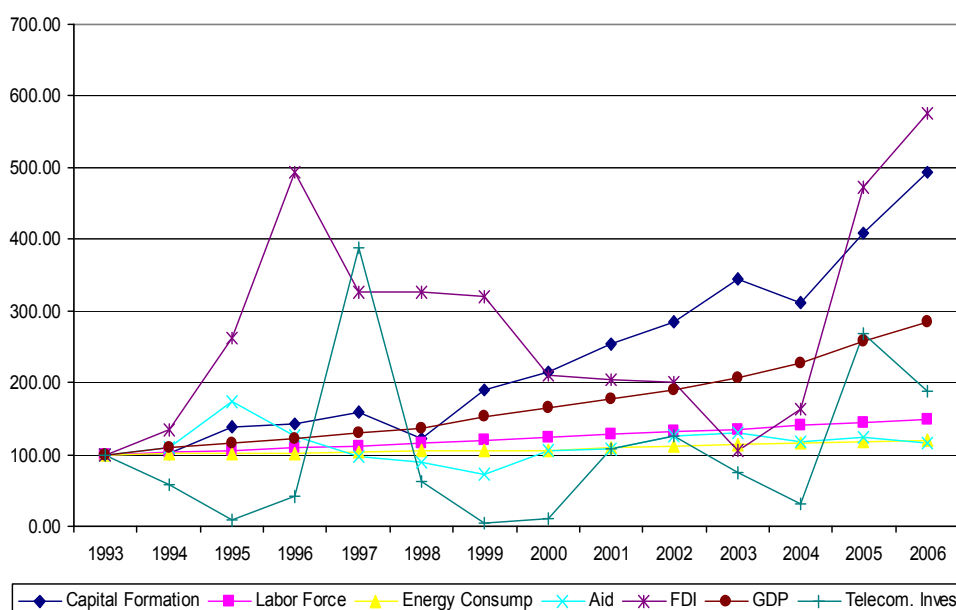


Figure 2. The Variations of the Variables

Gross Domestic Product (GDP). Even though other variables such as FDI, telecommunication investment, aid, and capital formation are showing instable trends, the GDP figure shows a positive trend over the entire study period 1993 to 2006. This precisely indicates that there are also other variables contributing to maintain this consistent growth of GDP. Likewise, other studies state that GDP in Cambodia has been aggregated by several factors such as agriculture, tourism, and garment industry. This was asserted by the Minister of the Ministry of Economic and Finance that total garment exports during the first half of 2005 reached USD \$820 million, rising by 1.4% in nominal terms over the same period in 2004. According to the Investment Guide 2003 report, there is little to contradict with our results. Based on the data source from World Development Indicators 2002 used in this report, it shows the drastic drop rates in 1997 (GDP growth rate is 1%) and 1998 (GDP growth rate is 1.8%). However in this study, even though the growth shows a little drop-down, it has around a 5.3% average for these two years. An Investment Guide To Cambodia 2003 report shows that real GDP grew well in 1995 and 1996 but declined in 1997 and 1998. It has picked up again to grow strongly (table 1)⁵.

Foreign Direct Investment. The figure shows a high growth rate for FDI in Cambodia in 1996 after the investment law was created in 1994. In Cambodia, FDI covers a range of activities from tourism through manufacturing to financial services. FDI grew from almost nothing in the late 1980s to an annual average of \$61 million in the first half and \$217 million in the second half of the 1990s. Due to the global economic crisis and civil quarrels

⁵ Table from An Investment Guide to Cambodia 2003 will be given in the appendix for the reader reference.

in the country, it dragged down the investment sharply and again in 2000. It also reduced again in 2003 due to the election period and the effects from the oil crisis.

Telecommunication investment in Cambodia. There was a barely perceptible movement in the beginning of the study period, due to this sector not being reflected as a major contributor to the national growth. However, with the growth references of beneficial ICT on economic growth from the advance countries in the region such as Malaysia, Singapore, South Korea, and Japan, the government tends to encourage the public and private sector to promote ICT use and its investment. With the incentive of the investment law, this sector grew sharply in 1997 and gradually declined in 1998, 1999 and 2000 due to the external affects from the international side of the economic recession, and was severely affected by the civil attacks that happened in the country. In 2004 and 2006, it shows declining rates that are opposite the FDI increasing trends. During this period, the construction and real estate sectors have been flourishing instead of telecommunications.

Gross capital formation. It shows an increasing trend for the entire study period except in 1997 and 2004 that was the dragged out period of the government formation after the national election.

Labor force and energy consumption. The figures reveal a steady trend for both.

Aid. It also shows a somewhat unsmooth trend, due to the global crisis and governance-related constraints such as the opaque regulation system.

4.1.4. Analysis of Productivity Drivers in Cambodia.

Based on the regression results, it is difficult to identify the determinants of productivity growth in Cambodia. The results reveal unfavorable relationships between productivity and its inputs which are aid, FDI and telecommunications investment. The reason can be clearly pointed out in the small observations used in this study. However, it can still be understood that a nation's growth is accounted for in the growth contribution of all economic sectors.

Table 5 below presents the impact of the individual sectors on the Cambodia economy for the years 1993 to 2006. The last column shows the average growth combining individual variables to boost the productivity in the country. It can be seen that, amongst all the sectors, the major contribution source to the productivity was from the telecommunications investment sector which had 185% growth as an average of 14 years. FDI contributes about 26% of average growth for 14 years. Aid, energy consumption and labor force are sharing relatively small contributions to the nation's growth. The capital formation factor contributed around 14% while GDP itself accounted only about an 8% contribution.

This empirical study outcome exposes a moderately weak relationship in seeking to identify the determinants of productivity in Cambodia. Therefore, in the following main section, the study presents a qualitative analysis of South Korea's economic development as a reference for Cambodia.

Table 5. The Growth of the Variables

Year	GDP growth	Gross of Capital growth	Labor growth	Energy consump growth	Total Aid growth	FDI growth	Telecom Invest. growth	TFP Solow
Cost Shared ⁶	-	0.15	-1.78	2.47	-0.01	-	-0.01	-
1993	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1994	9.10	0.43	2.46	0.47	9.76	34.00	-42.86	12.10
1995	6.44	36.87	2.92	0.47	57.22	95.69	-85.88	5.10
1996	5.41	4.05	3.04	0.47	-26.98	88.06	415.15	11.46
1997	5.62	10.71	3.27	2.11	-22.99	-33.64	832.61	9.81
1998	5.01	-23.44	3.94	2.36	-8.34	-0.27	-83.88	9.05
1999	11.91	57.06	2.91	-0.16	-19.44	-1.89	-92.18	8.19
2000	8.77	12.68	3.03	0.42	47.08	-34.50	124.73	12.60
2001	8.04	18.48	3.12	3.07	1.78	-2.78	870.87	8.97
2002	6.54	12.07	3.02	1.33	16.68	-2.13	18.21	7.15
2003	8.51	21.37	2.60	1.62	4.18	-47.58	-41.22	5.74
2004	10.02	-9.58	3.49	2.38	-10.33	55.63	-57.89	11.31
2005	13.46	30.65	2.98	1.21	5.32	190.88	762.45	16.27
2006	10.83	20.79	3.15	2.12	-6.18	21.46	-30.30	7.86
Average growth	7.83	13.72	2.85	1.28	3.41	25.93	184.99	8.97

4.1.5. Relationship between Productivity Factors and Selected Determinants

Table 6 presents the relationship between productivity growth in Cambodia and the individual growth determinants of GDP, labor, energy consumption, aid, foreign direct investment and telecommunications investment. The table reveals the strong relationship of GDP growth and TFP growth, statistically about 67% at the most significant quantification of 1% level. Labor force growth also shows a tight correlation with TFP with about 62% statistical significance. However, the determinants of electricity consumption and aid do not seem to associate with the productivity in Cambodia. This isn't quite conforming to the growth theory as energy is later regarded as original inputs of the productivity. The reason can be the small variances in annual energy consumption in the country or it could be caused by the lack of massive data/observations for the analysis. The globally inconsistent status drives the foreign aid in the developing country at unpredictable rates and amounts. It is seen with wide variances in some years because of this indefinite foreign aid. Therefore, aid may be disregarded as an important factor in or impact on the economic growth in Cambodia. As expected, FDI and investment in telecommunications both are related with productivity growth at a statistical 10% significance.

⁶ The coefficient values of variables from the estimation result.

Table 6. The Relationship between Productivity Growth and Selected Factor Growth

Variables	Labor growth	Energy consump growth	Total Official Aid growth	FDI growth	GDP growth	Telecom Investment growth
TFPsolow	0.6195	0.1682	-0.0932	0.4476	0.6659	0.4257
t-value	0.0181	0.5653	0.7512	0.1085	0.0093	0.1291

4.2. Qualitative Study On Driving Forces of Productivity Growth

One main objective with this research is the focus of quantitative analysis. However, the ability of enhancing the data due to unavailability of data it has limitation to only 14 observations. This is considered as relatively small time series data which discourages the author to go for further sophisticated methodologies such as comprehensive and flexible model specifications such as those used in the second essay. The inconsistent results generated from the simple linear regression and total factor productivity growth via divisa index method leads the author to support the study by doing case study. With 14 annual observations in the Cambodian study, the statistical analysis alone is unlikely to be able to fully adjudicate the plethora of the productivity determinants. Therefore, it is necessary to determine what the quantitative and qualitative components of the economic growth are, and how they can be measured.

It is clear that in the absence of any qualitative changes in the economy, a 1% increase in production requires a 1% increase in the use of primary resources. It is also clear that in the presence of technological changes and improvements in production quality, a 1% increase in production volume requires an increase in primary resource use below 1%.

In this section, this study develops an assessment relative to selected benchmark parameters for Cambodia that rely on South Korea's successful development.

4.3. Rationale For Choosing South Korea As A Study Model

The above empirical study is entirely based on the small data set obtained by the WDI 2008 of informational data at the national level in Cambodia. Some may argue about inaccuracies in the results produced. Therefore, the study makes a sensitivity analysis via a qualitative assessment based on benchmarking with South Korea's successful growth case. Korea's development process provides a sharp contrast to the lackluster growth experienced by many other developing economies. It demonstrates several unique characteristics, even in comparison with its neighbors Japan and Taiwan⁷. South Korea has improved its status in international society very quickly in the economic sense.

The main rationale for selecting South Korea as a model for Cambodia:

⁷ Edited by Jene K. Kwon, <http://www.greenwood.com/catalog/KWK%252f.aspx>

- The national economic performance has bordered on a miracle in a very short period of time over the past three decades. The potential capability of sustaining the national growth rate since the 1960s (which resulting in GDP per capita increasing more than 11-fold) is regarded as a unique occurrence on the world stage in the 20th century.
- The Monfort Plan Book (The New Architecture of Capitalism) by Jaime Pozuelo-Monfort on page 33, For three decades Korea enjoyed remarkable economic growth without significant international investment. Growth had come based on the nation's own savings and on its own firms managed by its own people. It did not need Western funds and had demonstrated an alternative route for the importation of modern technology and market access.

4.3.1. Overview of Korea's Economic Evolution

Korea possesses one of the world's longest histories as an independent nation. It has a long tradition of its own civilization and scientific achievements. This history recorded the Korean scientific and technological achievements ranging from astronomy, meteorology, physics, physical technology, and chemical technology to geography. Korean astronomy, printing, and ceramics, even though originally based on technologies imported from China, were in some sense more advanced than their Chinese counterparts. Although many basic ideas came from China, attempts were always made to fit foreign inventions to local needs and conditions, leading to significant and important new inventions and discoveries. The Koreans also appear to have been good innovators. After Korea gained independence in 1945, nearly 300,000 Koreans were experienced in mining and manufacturing. These were significant resources for participating in those key sectors than the indigenous populations in colonies under Western rule.

The three disarray/chaos periods that took place were unprecedented in Korea for almost a decade from 1945 until 1953. It is a drawback era for Korea. This relates to three major events.

First, there was the political and economic vacuum and chaos caused by the Japanese withdrawal from the Korean Peninsula when Japan surrendered to the Allied forces in 1945.

Second, the arbitrary division of the nation into North Korea and South Korea in 1945 led to the subsequent loss of the mining, metal fabrication, chemical manufacturing, and power sectors to the North which caused a radical drop in manufacturing output to about 15 percent of South Korea's 1939 level.

Third, there was massive destruction of industry and infrastructure in the 1950-1953 Korean War. The upshot of the Korean War was destruction of the majority of industrial and infrastructure facilities that Korea had inherited from the Japanese, as well as more than a million civilian casualties. Nonmilitary damage to buildings, structures, equipment, and other movable assets amounted to \$3.07 billion, between 86 and 200 percent of the estimated Korean GNP of that period of time. In the manufacturing sector, the government estimated that about 44 percent of prewar facilities were destroyed during the war. Damage was heavier in the relatively large-scale textile and cement facilities of industrial areas.

In sum, these phenomenon flattened Korea as “a nation with little left of its past and facing a bleak future.”

With substantial U.S. financial and technology assistance, Korea brought itself back together to its prewar economic level. Korea achieved phenomenal industrial development stemming largely from imitation and a dynamic innovation process. There were several driving forces underlying this dynamic process.

- The Korean war transformed Korean society, i.e. political stability
- Commitment from leadership, i.e. strong government
- Hardworking Koreans
- Large conglomerates, i.e. chaebols
- Export-oriented strategy imposed competitive pressure on Korean firms
- Crisis construction as a major means of expediting technological learning.

4.3.2. Building Benchmarking Parameters for Cambodia’s Growth

Described above as six catalysts for Korean economic growth, the study extracted some principles to model for the Cambodian case. This study benchmarks some suitable points from the Korean six catalysts above.)

Table 7.

Key Concept	Benchmarking Parameters	Detail/Description
What can be drivers for	Political Stability	1. The success in liberalization, internationalization, industrialization and democratic society.
	Role of the government	1. Steered the wheel and supplied fuel. 2. Set ambitious goals and directed the private sector with sticks and carrots, and private firms functioned as engines. 3. An array of policy instruments designed to facilitate technological learning in industry, and in turn, strengthen the international competitiveness of the economy.
	Hardworking Koreans and Skills	1. National trait of tenacity. 2. Han psych 3. Conditioning during school days. 4. Physical environment

the Cambodia productivity growth?		5. “Beat Japan” spirit 6. Experience of deprivation. All have a positive effect on Korean productivity growth.
	Export-oriented strategy	1. The favorable policy of Korean government for leveraging growth of domestic firms toward being export-oriented. 2. The government’s import-substitution and export policies

4.3.3. The Role of the Government/Commitment from Leadership

In general, the government legally initiates the use of force as the government has what is called police power. The unprecedented events that occurred during a decade significantly disrupted Korean economic development and completely reclaimed a politically independent country. During the initiating period (1962-1975), Korean government was single minded in the goal of industrializing Korea and transform its subsistent agricultural economy into an industrialized one, in spite of the odds against it. The government created a highly centralized, strong government to plan and implement ambitious economic development programs. It was a breakthrough era for Korean history and it contributed strategically to strengthen the economic development which resulted in Korea being where it is today.

The effective policies especially “the government steered the wheel and supplied fuel” and “set ambitious goals and directed private sector with sticks and carrots, and private firms functioned as engines” could work well for Cambodia. Commitment from the leadership or a so-called strong government performs a very critical role to transform a nation to a better state, from a few firms to an industrial base that drives the nation’s economic development. Of course, at the initial stage of development, the role of government is important in establishing broad development goals for the society, in mobilizing domestic and foreign resources for investment, and in developing the infrastructure. Besides in the minds of the Korean people, this strategic plan and its progress would not have been possible without the basic political stability sustained under the dedicated and effective leadership of their government. Therefore, it is a momentous function for Cambodia needing to assure its political independency (sovereignty) from foreign countries.

4.3.4. Hardworking Koreans: Sociocultural Factors

In the neoclassical model, the initial inputs for economic growth are capital and labor. During their reclamation of economic development back to before World War II levels, and with the massive U.S financial capital assistance, Koreans devoted themselves toward being labor oriented. At the individual level, Koreans worked incredibly long hours, from morning to night, like robots. In the book written by Linsu K., there appears to be at least five situational factors that compelled the hardworking Koreans:

1. National trait of tenacity
2. Han psyche: it energized Korean people to be willing working harder and even sacrificing for a better for their families and nation.
3. Conditioning during school days: most Koreans are conditioned to work hard even during their school days. Like those from other East Asian countries (Japan, Taiwan, Singapore and Hong Kong), most Korean students undergo “examination hell” from kindergarten on to win a competitive entrance examination at an upper-level school.
4. Physical environment
5. “Beat Japan” spirit

While the conditioning situation is less, Cambodia’s government can take a lesson from this by conditioning people with abundant jobs opportunities.

4.3.5. Export-oriented strategy

Being export oriented is also one of the major important strategies to achieve economic growth goals in Korea. To export means to make market diversifications which helps to avoid dependency on the domestic market and avoid the types of risks such as market conditions or a long economic recession.

The Korean government made exports a life-or-death struggle in order to attain its objectives for national development. The government designated so-called strategic industries for import substitution and export promotion. It pushed hard with ambitious goals by cajoling firms with incentives, borrowing heavily from abroad, and channeling the funds into export-oriented investments at below-market interest rates. Also, firms were granted unrestricted and tariff-free access to imported intermediate inputs and automatic access to bank loans for working capital for all export activities, even when the domestic money supply was being tightened.

Moreover, firms had unrestricted access to foreign capital goods and were encouraged to integrate vertically in order to sustain international competitiveness. When the new industry was on its feet, the government worked to create good conditions for exports. Incentives for exports included a reduction of corporate and private income taxes for exporters, tariff exemptions for raw materials imported for export production, business tax exemptions, and accelerated depreciation allowances.

The key risk to growth performance in Cambodia lies in its lack of diversity. The economy relies on the existing sources that are narrowly based on agriculture, the garments industry and tourism. They are all exposed to significant risks from the weather extremes, increased competition from the region, and avian flu, respectively. As potential conditions of Korean export policy, efforts to expand the narrow economic base have commenced and should improve medium to long-term prospects for Cambodia’s national policy. Policy should be geared towards creating a framework for growth.

4.3.6. Foreign Direct Investment (FDI)

Radical changes in the international economic environment, such as in the present World Trade Organization (WTO) and complimentary globalization conditions, will make it

difficult for Cambodia to emulate Korea's experience and grow as fast as Korea did during the early period (1962-1975). To fit the current developing situation, Cambodia needs to focus on the FDI sector even though this was not in the attention in the initial 5 years policy development plan of Korea. FDI is often seen as an important catalyst for economic growth in the developing countries. This is because FDI is an important vehicle of technology transfer, stimulates domestic investment, and also facilitates improvements in human capital and institutions.

The example from Vietnam which is the 6th largest country to attract FDI one year after joining the WTO. According to the head of the Foreign Investment Department, "to maintain its high and stable growth rate, Vietnam will continue to develop local resources and take initiatives to integrate into the global economy, especially focusing on improving international trade and investment co-operation on the basis of fulfilling our WTO commitments." Figures released at the 2008 Leap Forward Vietnam Business Leadership Forum showed the country to be only behind China, India, Russia, Brazil and the U.S. The department head also added that the Vietnamese government would abolish all regulations obstructing foreign investment including localization and export commitments. From 2006 to 2010, the Vietnamese government has set a cumulative investment target of \$150 billion. So far it attracted over 9,000 foreign investment projects.

Cambodia until recently is still regarded as a country that does not have enough infrastructures with limited institutional capabilities. Therefore, policies should focus on basic investments in technology infrastructure and demonstration projects of basic operations or exercise the basic innovation which can contribute to improvements in welfare, education, tourism, and agriculture. Cambodia's government should also focus on public-private partnerships (PPP) which are a good incentive as well as a strategy to attract the flow-in of FDI. PPP is a very popular term used by both developed and developing countries seeking sustainable economic growth.

4.3.7. Foreign Capital (Aid)

Foreign aid is an important source for economic development and its implication for poverty reduction in developing countries. The main role of foreign aid in stimulating economic growth is to supplement domestic sources of finance such as savings, thus increasing the amount of investment and capital stock in the country. According to Morrissey, O. (2001), "Does aid increase growth?" shows that 1) aid increases investment, in physical and human capital; 2) aid increases the capacity to import capital goods or technology; and 3) aid is associated with technology transfer that increases the productivity of capital and promotes endogenous technical change.

Cambodia is at the stage of heavily relying on foreign aid to complement the shortage from local savings for the operation in the country. Gross domestic investment averaged only 18 percent of GDP in the period of 1997 to 2003, the bulk of which was financed from national savings (15% of GDP) with the remainder sourced from foreign savings. Foreign aid inflows in both grants and loans have been large, averaging 12% of GDP between 1999 to 2003. Most loans have been made on concessional terms, targeted to technical assistance around 50% investment projects about 40%, and budget support and

food aid. For functional use, about half of this aid was spent on health, education, and infrastructure. Less than 10% was directed to agriculture.

5. Conclusions and Suggestions

This study investigated the driving factors of productivity growth in Cambodia using both quantitative and qualitative analysis. For quantitative analysis, the study employed the Solow residual productivity method and simple ordinary least square measures of Cambodia data from 1993 to 2006. The study used the coefficient values from OLS as the cost share weighted to compute TFP. The results of the estimating show unusual results due to the small data set. However, it also revealed the correlation between the productivity growth (TFP) with labor force, GDP, and FDI being statistically significant.

The results from the empirical study appear quite inconsistent due to the unavailability of a massive data for analysis. To back up this, the study proceeds with the qualitative assessment by benchmarking Cambodia with Korea and the example from Vietnam. The type of commitment of Korean leadership revealed the critical role of the government in pushing forward the status of the country and its development.

In addition to the conventional inputs of neoclassical growth model, FDI and foreign capital (aid) are the major driving resources for Cambodia's economy. The Cambodian government should reform its investment related laws toward creating more favorable conditions and strengthening the institutional capabilities with more comprehensive, dynamic and structured policies toward attracting FDI and foreign aid. Cambodia should focus on demonstration projects of basic innovation which can contribute to improvements in welfare, education, tourism, and agriculture. To address the national resources, while Cambodia focuses on agricultural sector, there are tremendous opportunities to get into renewable energy sector. Start paying attention to environmental issues now by assuring the remaining resource such as rain forest and other natural resources are protected and wisely utilized will pay great dividends in the future⁸.

Together, Cambodia should impose a self discipline by reducing the perversion of integrity creating functional institutions, and especially create opportunity to educate its future generations.

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⁸ <http://modernprogressivekhmer.blogspot.com/2010/05/could-this-be-turning-point.html>

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Appendix

Table A.1. The Variations of FDI and Telecom. Investment

Year	FDI growth rate	Telecom. Invest growth rate
1993	0.000	0.000
1994	34.000	-42.860
1995	95.690	-85.880
1996	88.060	415.150
1997	-33.640	832.610
1998	-0.270	-83.880
1999	-1.890	-92.180
2000	-34.500	124.730
2001	-2.780	870.870
2002	-2.130	18.210
2003	-47.580	-41.220
2004	55.630	-57.890
2005	190.880	762.450
2006	21.460	-30.300

Table A.2. Estimation Result of TFP

Variable	Parameter	Std. Error	Value	Pr > t
Intercept	-18.625	90.796	-0.210	0.842
Aid	-0.808	5.502	-0.150	0.886
FDI	2.733	2.085	1.310	0.222
Investment in Telecom.	-0.091	0.891	-0.100	0.921
trend	0.248	0.287	0.860	0.410

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