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# The Relationship between Economic Freedom and Economic Growth: The Transition Process in Vietnam and China

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THE RELATIONSHIP BETWEEN ECONOMIC FREEDOM AND ECONOMIC GROWTH:  
THE TRANSITION PROCESS IN VIETNAM AND CHINA

A Capstone Experience/Thesis Project

Presented in Partial Fulfillment of the Requirements for the Degree Bachelor of Arts with  
Honors College Graduate Distinction at Western Kentucky University

By

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2010

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## ABSTRACT

The relationship between economic freedom and economic growth has always been frequently discussed in the economic literature. Economic freedom is often believed to enhance economic growth, which in turn creates more economic freedom. The first part of this paper studies the transition process in China and Vietnam from a planned economy to a free market economy. The transition process, which takes place over the period of more than two decades, allowing more economic freedom, and implementing some elements of a free market, has boosted the growth rate in both China and Vietnam, and increased considerably the standard of living of people in the two countries. China and Vietnam's amazing achievements raise the question about what factors have contributed to the high economic growth rates of the two countries. The second part of the paper studies the relationship between economic freedom and economic growth, employing an empirical approach. The empirical research presents evidence to support the theory of the positive relationship between economic freedom and economic growth. It is concluded from the regression model that economic freedom has a significantly positive impact on economic growth, holding everything else constant.

Keywords: Economic Freedom, Economic Growth, Transition Economy, Vietnam, China

Dedicated to my friends and family

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## CHAPTER 1

### A STUDY OF THE TRANSITIONING PROCESS IN VIETNAM AND CHINA

#### 1. Introduction

The term “economies in transition” refers to the economic processes taking place in the economies which move from a central planned economy to a free market. The late 1980s and early 1990s witnessed the fall of The Union of Soviet Socialist Republics (USSR) and the chain of socialist countries in Central and Eastern Europe, and also observed a sharp increase in the number of countries abandoning their central planning economy models and moving towards market-based economies. The transition from socialism to market based economies in the formerly communist part of the world is a unique historical process, and likely to be remembered as one of the major economic events of the twentieth century.

##### 1.1 Common negative aspects of the transition process

First, immediately following the start of the transition process there is often a tremendous jump in the prices of all goods and services, resulting in an extremely high inflation rate. The first reason explaining the high inflation rate is because as the transition economies open their borders to market economies, old price-setting mechanisms established by the government are

removed. The government takes control over only prices of some strategic goods. For the rest of other goods and services, prices are now decided by market forces. Because in the command economy, people are provided with only a limited amount of goods and services, they have not been able to consume as much goods and services as they desire. When the economy is opened and people are free to purchase what they want, the demand for goods and services rises remarkably while the supply of goods and services is still limited. As a result, inflation escalates in the short run according to the demand-pull inflation theory. The second reason accounting for high inflation rate is because of the immature financial and banking system, and the government's inability to recognize the severity of inflation. Most governments perceive inflation as a natural and unavoidable disaster, not a monetary phenomenon, so that they keep resorting to printing money as a way to finance their deficit spending (Kornai). Table 1.1.1 shows the average inflation per year for some countries with a transition economy from 1986 to 1994. All of the countries demonstrate a big increase in inflation rate.

Second, high unemployment rate appears as another unwanted consequence of the transition process. Under the command economy, the government has obligations to provide jobs for all of its citizens. However, with the decline of command economies, the case now is that the workers have to find jobs for themselves, which is a difficult challenge. On the other side, in order to reduce costs to compete in a more competitive environment, businesses need to reorganize, and lay off unnecessary laborers. Additionally, the privatization of state-owned enterprises forces businesses to relocate, or fire inefficient workers, and increases the demand for more skilled and educated workers. Consequently, unemployment becomes a social hazard (Table 1.1.2).

Third, all of the transition economies observe a tremendous decrease in total gross domestic product (GDP). The forces of privatizing state-owned enterprises and embracing new labor management, new government laws and regulations, and operating in a completely new competitive environment definitely lower the productivity, at least in the short run. At the beginning, the state economic sector's activities fail and decline while the private economic sector has not developed yet. The familiar economic organization undergoes dramatic changes, pressing workers, businesses, and the authorities to learn to adapt and compromise to it. Obviously, it takes them some time to fully understand how the new system works (Table 1.1.3).

Finally, there are some undesirable social consequences accompanying the transition process. First, social inequalities increase, and the gap between the rich and the poor broadens. Gini coefficient is used to measure the inequality of income distribution or inequality of wealth distribution. A low Gini coefficient indicates a more equal income or wealth distribution. The transitional countries witness a deterioration of Gini index. For example, according to the Nation Master, in Romania, the Gini coefficient rose from 23.32 in 1989 to 28.2 in 1994, and 30.25 in 2000. Similarly, the Gini coefficient for Poland increases from 26.89 in 1989 to 32.39 in 1993, and 34.47 in 2002. For China, the Gini index increased from 26.71 in 1989 to 35.17 in 2001. Secondly, more corruption and violence has been observed in these transitional countries. Corruption rose in most of the East European countries, Russia, China, and Vietnam after the transition process began (Chan, Kerkvliet, & Johnathan, 1999).

Table 1.1.1: Inflation, average consumer prices, index year 2000 = 100 (Source: Econstats)

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994
Czech Republic	25.65	25.68	25.74	26.11	28.59	44.79	49.77	60.15	66.14
Poland	0.2	0.25	0.41	1.44	9.87	16.8	24.03	32.51	42.98
Hungary	8.48	9.21	10.67	12.47	16.09	21.59	26.55	32.51	38.62
Lao	5.42	5.75	6.6	10.55	7.77	8.82	9.68	10.23	11.02
Vietnam	0.41	1.89	8.98	17.58	23.92	43.49	59.89	64.9	71.06
China	32.16	34.51	41	48.38	49.88	51.57	62.94	78.11	91.47

Table 1.1.2: Unemployment rate (Source: EBRD)

Year	1991	1992	1993	1994	1995	1996
Poland	11.8	13.6	16.4	16	14.9	13.2
Czech Republic	4.1	2.6	3.5	3.2	2.9	3.5
Hungary	7.4	12.3	12.1	10.4	10.40	10.5
Bulgaria	11.1	15.3	16.4	12.8	11.1	12.5
Croatia	13.2	13.2	14.8	14.5	14.5	16.4

Table 1.1.3: GDP in billions of US Dollars (Source: Econstats)

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994
Czech Republic	5182	5791	5722	5580	5059	2636	3091	3552	4118
Poland	1961	1687	1815	1768	1625	2101	2310	2346	2687
Hungary	2250	2484	2730	2799	3186	3223	3591	3724	4010
Lao	349	239	152	183	211	242	271	297	337
Vietnam	556	675	366	97	98	114	144	189	230
China	275	294	361	398	339	351	412	517	467
Mongolia					1244	1279	702	348	414

## 1.2 Common positive aspects of the transition process

The most positive aspect of the transition process is that all of the negative consequences are expected to be only temporary. As indicated by the tables above, the transition economies experience a hazardous slowdown with a sharp decrease in GDP, high inflation, and high unemployment rate. However, after these economies hit the bottom, they start recovering continuously. Consequently, after the transition process, the economy is anticipated to prosper in the long run.

In addition, the transition process also brings back various advantages, which are expected to be permanent, and help to reduce the negative effects. The benefits include an increase in entrepreneurial activities, a more efficient capital allocation system, a better business decision-making process, and a rise in foreign capital investment (Young). The open economy also leads to positive reform in the legal and regulatory system, especially in private property ownership rights. Along with the open economy, people have more opportunities to travel abroad, interact with people outside their country, learn about the more developed world outside, which bestows them with incentives to innovate and reform their country's economic and political system.

## 2. The transitioning process in Vietnam and China

The transition process occurred much earlier in China around 1979, and then in Vietnam around 1986. It shared some common characteristics with other countries' transition processes, but still possessed some unique features of its own. Different from Eastern Europe's countries, Vietnam and China shared a unique Asian culture and history which appreciated Confucianism, trust, high respect for the bureaucracy, and both countries had never been ruled by any political democratic party. Their cultures emphasized collectivism and the greater good for the society as



a whole, as opposed to the culture emphasizing individualism for most Western countries. This reflected a distinct characteristic in the transition process in Vietnam and China that although the process allowed a great extent of economic freedom, no fundamental change was done to the political system, legal system and property right system of the two countries. Furthermore, compared to other transitioning economies, China and Vietnam had a lower starting point, and at the onset of the process, most people in the two countries still lived in the countryside, and labor intensive farming. Both processes were slow transition, spreading over a few decades, shifting gradually from a state-planned economy to a market economy (Chan 1999). The "gradualism" strategy was adopted because of the uncertain characteristics of the situation and the lack of ability and guidance from a leading authority. Before implementing any reform, both countries made amendments to their doctrinaire ideology of "socialism", but neither of them totally abandoned socialism and the domination of the communist party, which made their reform somewhat conservative.

Besides commonalities in the process, differences were observed in the transition process between the two countries. First, although Vietnam was more politically stable, China accomplished a higher growth rate, and more economic achievements (Chan, 1999). The first reason explaining for the difference was that China enjoyed a longer peaceful period, since 1953, when it could focus on developing its economy, while Vietnam was constantly at war until 1975. On the other hand, the Vietnamese's mainstream communist ideology was less vociferous and divisive than that of China's, and the Vietnamese government was more open to the West than the Chinese government. Second, the sequence of policy changes in the transition process and the government's actions were different due to the different starting level of accumulated wealth and savings for each country (Fforde, 1999). Unlike Vietnam, China had already experienced

some economic successes and accrued some large savings, investable funds and economic resources before the transition happened (Fforde, 1999).

## 2.1 An overview of the historical settings of China and Vietnam

### 2.1.1 An overview of China's historical setting

In 1949, the Communist party took over Chinese's government, claiming to overthrow imperialism, feudalism, bureaucrat-capitalism, and rebuild China as a great socialist country striving to become a communist country in the end. The party made the promise to conduct significant political and administrative changes to unify the country and bring China's people out of deep poverty. Under the Communist regime, the central government, represented by the Communist Party, played the planning role for the whole economy, allocating and redistributing resources, setting price, and other economic mechanisms. Indeed, all the changes the Communist party made after 1949 built a foundation for further reforms in China later.

First, the government implemented a tremendous transformation of the structure at the lower levels, providing local authorities with more power with a decentralized welfare system (Walder, 1983). The central government only controlled the most important goods such as oil and steel. The local enterprises and authorities took care of the workers' health care, education, housing, salary, and they paid their expenses by selling/trading workers' outputs. This created a closer interdependent relationship between the workers and the enterprise, between the enterprises and the local government. From 1959 to 1961, the Chinese government introduced an economic and social planning package called the Great Leap Forward, which aimed to increase national outputs and accelerate China's pace towards communism through mass collectivization in agriculture and industry. Under the program, pivotal changes were made in China's rural area, improving the farming technique (soil improvement, fertilizer, irrigation, seed selection, close

planting, plant protection, field management and tool reform), leading to greater crop yields. The production of China's fisheries increased from 1.7 million tons of fish in 1952 to 3.1 million tons in 1957 (Shabad, 1959). In transportation, more rail-road lines, and nation-wide roads systems were constructed, making it easier for goods and labor to move around the country.

Second, equality was encouraged across differences classes, across job professions, and between the state bureaucrats and the people. The government succeeded in creating an equal state, reducing their Gini income inequality score to 0.26 in 1979, a much lower level than other neighboring countries, however, at a costly price (Woetzel, 1989). Instead of creating more wealth and improving people's standard of living with an efficient redistribution welfare system, the strategy in fact made everyone equally poor, bringing down the standard of living in the city to match with that of the countryside.

Third, remarkable modifications were made to the ideological system. In addition to Marxism, and Leninsim, Mao Zedong's thoughts were incorporated into the mainstream school of thoughts, influencing policy makers and social conventions. Maoism focused more on agricultural transformation, trying to involve the lower classes of people in the countryside rather than on the industrial side of the economy. The Cultural Revolution, known as "the great proletarian cultural revolution", initiated by Mao Zedong in 1968 and only ended after his death in 1976, replicated Mao's desire to "control humans' thoughts and behaviors", and permanently eradicate elements associated with capitalism via violence and public purge. Red Guards were recruited on the basis of militancy and revolutionary zeal to persecute laymen who were designated as "enemies of communism", and people in the Communist party who were inclined to take the capitalist road. Under the guidance from the top level instructed by Mao, loosely

organized and decentralized cultural revolution committees were created everywhere with the aid of the Red Guards to administer the process (Bridgham, 1967).

### 2.1.2 An overview of Vietnam's historical setting

After gaining independence from the French in 1954, Vietnam was divided into two: the North of Vietnam was under control of the Communist party, and the South of Vietnam was under control of an anti-communist party led by Ngo Dinh Diem. North Vietnam followed the Soviet model of development with highly centralized planning and state-ownership of capital and means of production (Elliott). The Communist party took over control of all parts of the economy including price setting, labor management, what to produce and how many. However, the North Vietnam's economy stayed basically a war economy with most goods and services produced to serve the military. From 1960 to 1965, the First Five Year Plan was launched in the north. The targets of the Plan were to build the initial infrastructure and technology for the socialist economy, industrialize the North, increase productivity and outputs, improve production relations and labor force, and lead the North firmly to socialism. At the end of five years, little was achieved. However, it was able to become self sufficient in food and some consumption goods, and establish the foundation for the collectivization of agriculture.

Before 1975, the North had a relatively low proportion of urban population and included mostly small and medium-size urban areas, and most people lived in rural area, working in agricultural sector. The urban economy in the North was based mainly on the state economic sector and heavy industries. On the contrary, the South had a higher proportion of urban population, including the Ho Chi Minh metropolis and other medium-size cities. The urban economy in the South had traditionally been based on the private economic sector, including manufacturing and trade (Le). Nonetheless, the majority of people in the South were still

employed in the agricultural sector. However, after the reunification of Vietnam, the communist economic model was also applied to the south of Vietnam, and the private sector was taken over by the communist government.

In 1976, the Second Five Year Plan was launched in the whole country, following the Soviet model of agricultural collectivization, focusing on heavy industry led by state-owned enterprises, capturing all private businesses, and “reeducating” capitalists, traders, and those who worked for the South Vietnam’s ex-government and military. The targets of this plan were to overcome the consequences of the 30-year war, reconcile the country, reorganize the economy, reallocate capitals and the labor force, industrialize production, and improve the living standard for Vietnamese people. During this time, Vietnam relied heavily on the financial and technical aids from the Soviet Union, China, and other socialist countries. The government, controlled by members of Communist party, supervised and managed all activities. In 1977, Vietnam became an official member of the United Nations.

## 2.2 The Pre-renovation period

The Great Leap Forward and Cultural Revolution had done serious damages to China. After initial growth when production outputs attained an unexpectedly high level, things started to plummet.<sup>1</sup> The national grain outputs increased in 1958, but then declined by 12 percent in 1959, by 26 percent in 1960, and by 24 percent in 1961 due to severe national disasters, and contraction in grain-sown land (Peng, 1987). To make the matter worse, the central government was falsely informed by the provincial authorities who exaggerated their outputs and concealed the real situation. Thus, instead of issuing directives to improve the production, the central government decided to cut down on the area of land dedicated grain crops. The decision caused

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<sup>1</sup> The high growth rate is suspected to be exaggerated by the government.

an immense shortage of food supply in China, and as a result, an estimated number of 14 million people died of starvation.<sup>2</sup> Furthermore, the grain redistribution policy caused inequality in the amount of grain received per capita across provinces, making the problem worse in poorer provinces. Realizing its mistake, the government tried to implement policies to increase China's grain production again, but the national output only recovered slowly beginning in 1962, and returned to the pre-Leap level in 1965. Also according to Peng, due to the government's increasing number of industrial projects, many rural labors migrated to cities to work, increasing the number of nonagricultural population, placing a great burden on the government to redistribute the food supply to support the industrial sectors. From 1958 to 1960 industrial output did increase; however, affected by the agricultural crisis, lack of knowledge and skilled workers, the decrease in the initial zeal, and the withdrawal of assistance from the Soviet Union, industrial output decreased by 38% and 16% in 1961 and 1962 respectively. China's real GDP growth rate fell from 21.8% in 1958 to -27.3% in 1962. Equally disastrous, the Cultural Revolution created fear and terror in China over the period of more than 10 years, causing tensions and conflicts within the Communist Party. Many innocent and powerless victims were killed, exiled or enslaved in concentration camps in China.

In Vietnam, the Second Five Year Plan failed to bring prosperity to the country as the Communist party expected. The country was in deep crisis during the period from 1976 to 1979. Various political tensions between Vietnam, supported by the Soviet Union, and Cambodia, supported by China, led to the war between the two countries, which cost Vietnam a lot of money and human resources. In 1979, China waged war against Vietnam in the North border,

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<sup>2</sup> Judith Banister claimed that the estimated number of deaths can be as high as 30 million during the Great Leap.

damaging 6 Northern provinces of Vietnam, and China terminated all financial aid and technical assistance for Vietnam.

The collectivization regime in agriculture provided little incentive for farmers to increase productivity. Agricultural production took place in compulsory cooperatives that were supposed to control 95 per cent of agricultural land. The state made all production and distribution decisions. After harvest the state took out a portion of the output as a lump-sum tax; the surplus over own consumption was forcefully sold to the state at a low price, around 20-30 per cent of that in free markets. The distribution of the output of agricultural cooperatives was based on work points. Private trade in agricultural products was officially banned. Additionally, due to bad weather, agricultural harvests were seriously destroyed, which seriously devastated the economy based mostly on agriculture, and Vietnam suffered severe food shortages. The state authority could no longer supply enough inputs to the economy and food to people. The failure of the authority to effectively manage the centralized economic system revealed in considerable differences between official prices and prices in free markets that simulated fence-breaking (pharao) activities. This process was mentioned as “reform from the below” by Fforde and De Vylder.

Realizing the escalating economic problems, the government initiated a “trial and error” reform package in 1979 based on partial administrative decentralization. Two bold reforms- the Output Contract system for Agriculture, and Three-plan System for Industry were also introduced to address the economic shortages in supplies, low productivities, and the dislocation of different industry sectors. The contract system for agriculture encouraged individuals to take their own leads, but not abandoning the collectivization. In addition, the government adjusted prices, wages, and currency in an attempt to reduce inflation and overvalued exchange rates.

However, these reform policies were not coherent, and some were even contradictory reflecting an internal debate over the communist leadership. In short, a socialist economy based on central planning, collectivized agriculture and state ownership was still being constructed, especially in the south, while experiments to reform the system were being introduced (Pomfret). According to the World Bank statistics, the annual food output per capita fell from 304 kg in 1985 to 281 kg in 1987. The inflation rate was 90% in 1985, and 455% in 1986. The GDP per capita fell from \$101 in 1976 to \$91 in 1980 (World Bank Report).

These early adjustments failed to solve the problems with the socialism system, but they created some basis for future reforms.

### 2.3 The reform process starting in Vietnam and China and its achievements

In China, the reform started in 1978, marked by a rise in power of Deng Xiaoping. The destructive consequences of the Cultural Revolution casted doubt upon Maoist's conservative socialist ideology and the theory of central planning economy, slowed China's economic growth, and revealed the need for both economic and political reform in China. At the Third Plenum of the National Party Congress's Eleventh Central Committee in December 1978, the party, led by Deng Xiaoping declared to start a rudimentary economic reform. The program did not intend to completely abandon communism and the domination of the communist party, but just implement some substantial changes to the current system, reducing the central planning of the government, allowing some degree of economic freedom to improve the performance of the economy.

Following China's steps, after the death of Le Duane, the Secretary General of the Communist party, the most powerful and conservative in orthodox socialist ideology leader dominating the political system for a long time, the Vietnamese's Sixth Party Congress in 1986 formally declared that economic and political reforms were necessary for the party to survive,



and for the country to thrive. It decided to abandon the hard-reform-socialism approach, adopted a policy package aimed at establishing a market economy, and selected a new team of leaders. This policy package was often referred to as “Doi Moi”. Doi Moi’s main targets were dismantling central planning, liberalizing trade, promoting private activities, constructing a socialist-oriented multi-component economy, and generating incentives for people to work harder and more efficiently.

### 2.3.1 Reform in agriculture sector

China first executed extensive reform in the agricultural sector in the countryside. China followed a dual-track path to transformation in almost all aspects: the coexistence of a free market and the planning role of the government to some extent. Starting since 1978, the liberalization process in agriculture was carried out rapidly, while most of the industrial sector still remained under the government’s central planning management (Cao, Fan, & Woo, 1996). The government slowly disbanded the collective system in the rural area, and introduced a new household responsibility system. Under the new system, the land was distributed to the peasants with an up to 15-year lease, and farmers could freely trade their leases. The system gave farmers more incentives to work harder and increase their productivity. As the government allowed markets a greater role in guiding agricultural production, specialization started to take place encouraging each region to focus on producing the type of products it has the most comparative advantage. In 1985, the state no longer had to set any mandatory production plans, and states and farmers were permitted to trade among each other by purchasing contracts (Lin, 1992). As a result, crop patterns changed considerably among provinces, and crops yielded a much higher output rate than ever before. The index of crop output shows a continuous increasing tendency in the total agricultural product output in China from 1975 to 1987 (Figure 1.2.1)

Figure 1.2.1: Index of crop output in China

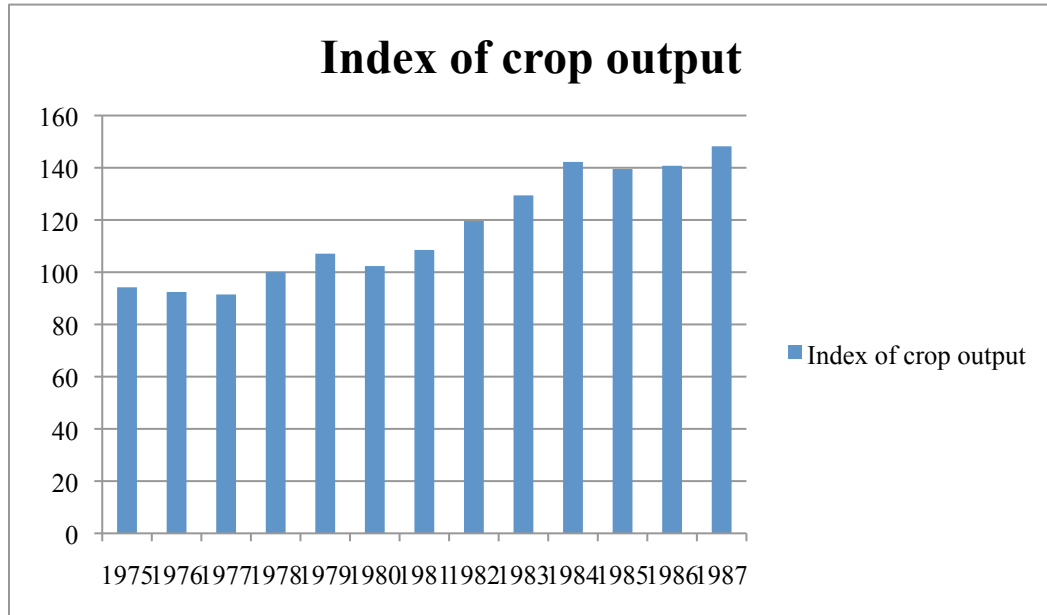
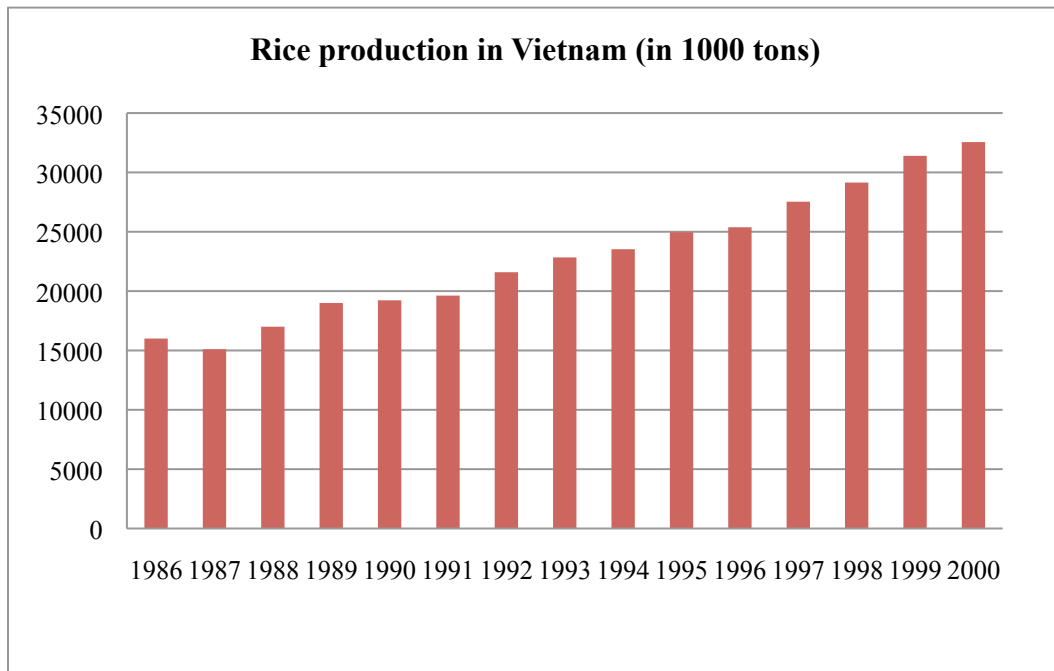


Figure 1.2.2: Rice production in Vietnam



Source: Nguyen (1996)

The Vietnamese governments also implemented reforms in agriculture. The reforms in this sector embodied a movement towards an increase in private property ownership rights, affirming households as an autonomous unit in the economy. In 1988, collectivized land was returned and allocated to each household for long-lease use. Households were allowed to own, sell or transfer machines and other agricultural instruments. They could also lease, transfer, exchange or inherit land. The decollectivized process was taken place most quickly in the Mekong delta, transforming cooperatives into individuals' unit of production. Households could keep up to 40 percent of their total production and resell it in the free market. Although there still remained some problems with the reforms in agricultural such as a sudden increase in unemployment in rural area, and the fragmentation of land making it difficult for mechanization, irrigation, and specialization, Vietnam's rice production rose tremendously, allowing it to not only provide enough rice for the domestic market but also export to the international market (Figure 1.2.2).

### 2.3.2 Price reform

Since 1986, Vietnam began implementing a widespread price reform. The government now controlled only a few prices of some strategic goods. For other non-strategic goods, the price was decided by the supply and demand force in the market. The government also devalued “dong”, the main currency of Vietnam, and left the exchange rate for the market to decide. China approached pricing reform quite differently from Vietnam. It opened the free market, but still kept the state supply unchanged at the plan price, and then adjusted the price over time to catch up with the market price (Cao, Fan, & Woo, 1996). Hence, a product's price consists of four price elements: quota price, above quota price, negotiated price and market price. China's price

reform concentrated highly on reforming the price of final goods/product rather than the price of intermediate goods and price of factors of production.

In the first phases of Doi Moi, Vietnam witnessed an enormous increase in prices of all goods, or a huge increase in inflation rate. However, at first, the authority regarded inflation as structural: inflation must occur due to the excessive increase in demand relative to supply of goods and services. As a result, they just increased capitals to state-owned enterprises to raise their outputs, which made the inflation problem worse. Not until 1989 did the government finally learn that inflation was a monetary phenomenon and start taking control over prices (Pomfret). Therefore, after the painful onset, the price became stabilized, and inflation rate reduced steadily over time (Figure 1.2.3).

The price reform placed the most strains on the state sectors, especially on the state-owned enterprises, which were so used to receiving specific inputs at administered prices, and following guides from the government for all business decision-making. The government also cut back on subsidies for these firms. It was estimated that within a year of initial reforms, about 30% of Vietnam's state-owned enterprises were unprofitable, 40% of them barely broke even, and only 30% of them were profitable (Leipzig). Many state-owned enterprises went bankrupt, or had to reorganize their operation structures by merging with other firms, and discharging excessive or inefficient workers. However, since more than 70% of Vietnam's population was employed in the agricultural sector, unemployment was not a big problem in Vietnam like in other transition economies.

Due to the cautious proceeding of the price reform process, although China did have to experience some inflation, the inflation rate in China was not as high as the inflation rate in Vietnam. Furthermore, household's savings rate was unusually high in China which helped to

reduce the need to print more money by banks. China was able to restrain and control the price level of goods; however, inflation still inevitably resurfaced in the later period of the reform in early 1990s due to the high demand for goods and services in China, and the increase in the cost of production because of the government's multi-pricing. In order to further control the inflation rate, the government created a contracted management responsibility system in which participating enterprises had to negotiate with the government representative agency the amount of profit they could keep based on their performance and the product price level. Since the system demanded enterprise to show sharp improvement over a short period of time, it, unexpected by the government, encouraged enterprises to make use of their competitive advantage such as monopoly, oligopoly power to increase the price level so as to raise their firms' profits. Consequently, the new system gave rise to more inflation in China (Ishihara, 1990). Figure 1.2.4 reveals the inflation rate patterns in China in years following the economic reform.

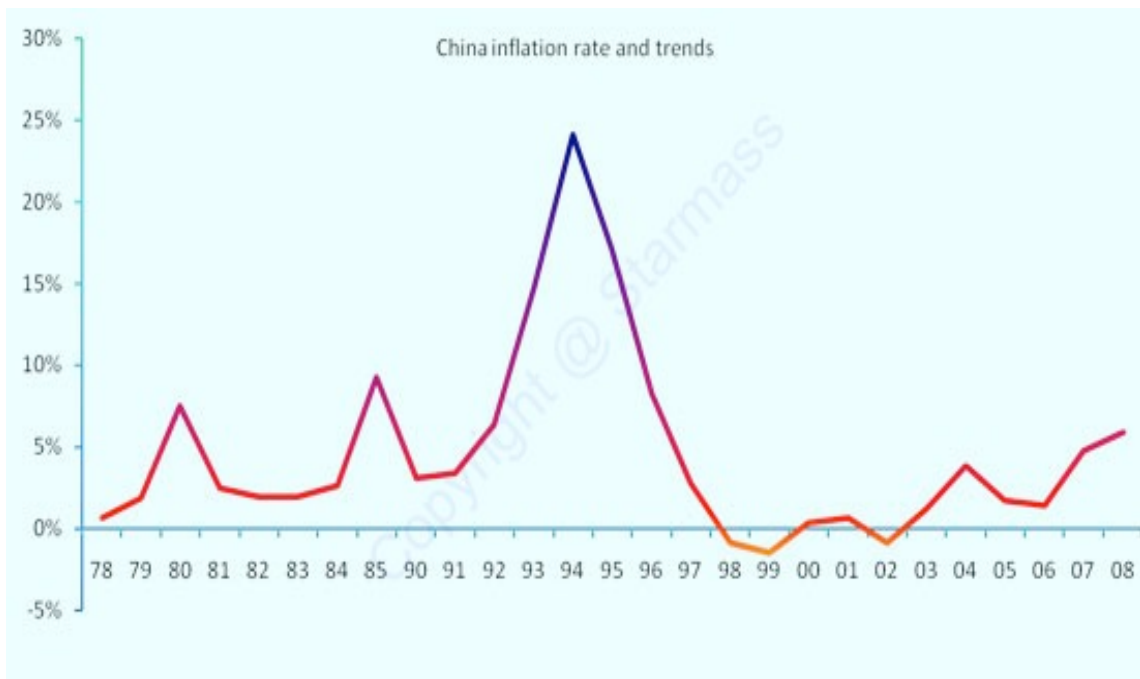
### 2.3.3 Reform in the financial and banking sectors

In the financial and banking sectors, several major reforms were also made with the goals to reduce the central government's fiscal burden, and promote local authorities to become fiscally self-sufficient. In both China and Vietnam, the mono-banking system was abolished, and a two-tier banking system, constituting of both state central banks and commercial banks, was adopted with an aim to decentralize the power of state banks and create a more competitive banking environment. Commercial lending was separated from central banking functions. The government also altered the interest rate policy, requiring banks to set positive real interest rates to encourage people to deposit money in banks instead of hoarding money, and channeling their savings in real assets such as real estate and foreign currencies.

Figure 1.2.3: Inflation rate in Vietnam (Source: Index Mundi)



Figure 1.2.4: Inflation rate in China



A more efficient banking system clearly led to more accumulation and allocation of capital within the economy, stimulating both economies. China began the transition process with a very high accumulation/saving rate, but the rate declined steadily as of late 1980s. On the other hand, the reverse trend was noticed in Vietnam: the accumulation/saving rate increased continually throughout the transition process.

In 1981, the Chinese authorities cut the value of the Yuan by half, and between 1981 and 1984, the authorities steadily depreciated the official rate until it reached 2.8 Yuan per dollar. Remarkably, in 1987, the authorities reduced the value of the currency by 15 percent in a single step, placing the rate at 3.7 to the U.S. dollar (Lardy, 2005). Similarly, the Vietnam dong was devalued in November 1986, and devalued again in December 1987, which also contributed to the increasing inflation rate in Vietnam.

#### 2.3.4 Reform in foreign trade policy

So as to attract more investment from foreign countries, China and Vietnam opened up its economy partially to participate in the global economy. The government gradually abolished quantitative restrictions on imports and exports in some goods and services, introducing import tariffs and export taxes, and enhancing trade liberalization.

In late 1970s and early 1980s, China allowed enterprises to set up joint ventures using foreign capital, and approved a legal status for foreign investment in China. China adopted more favorable regulations to encourage and provide incentives for more foreign direct investment inflow into the country, trying to match the foreign capital with the domestic industrial objectives ((Fung, Iizaka, & Tong, 2002). In 1986, the State Council disseminated the "Provisions of the State Council of the People's Republic of China for the Encouragement of Foreign Investment". The new regulations provided foreign investors with favorable tax

incentives, freedom to import, export and trade with each others, and a more simplified licensing procedures. One of Chinese's secrets to its astonishingly high growth rate was its attractiveness to foreign investment (Figure 1.2.5).

Likewise, in 1987, Foreign Investment Law was passed in Vietnam, creating the legal infrastructure for foreign investors, and officially opening Vietnam's economy to the outside world after years of isolation. In 1992, the law was amended granting the foreign investors with more incentives and benefits such as allowing more forms of investment, longer production period, and tax reduction. Foreign investors were attracted by the high skilled but cheap labor costs, and the availability of raw materials and other resources in Vietnam. Hong Kong, Taiwan, Singapore, and France were among the biggest investors. After the United States lifted the trade embargo on Vietnam, investment from the United States also increased remarkably (Figure 1.2.6).

### 2.3.5 Reform in private sector

Before the reform taking place, the private sector in China was greatly suppressed due to the general anti-capitalist atmosphere in the country, especially during the Cultural Revolution, and capitalists were relentlessly punished by the government. Since the reform, the government reduced its interference into the economy, and acknowledged the role of the private sector in the economy. However, in China, the private sector still remained small, and constituted by small and medium-sized enterprises. In Vietnam the government only officially acknowledged the important contributions of this sector to the economy, and guaranteed its existence as part of the economy in 1986. In 1987, restrictions were removed from private-sector's trade and transportation. In 1988, Entrepreneur Law was published, proving legal frame work for private sector. The new Constitution released in 1992 also confirmed the existence of the private sector



Figure 1.2.5: Foreign Direct Investment to China

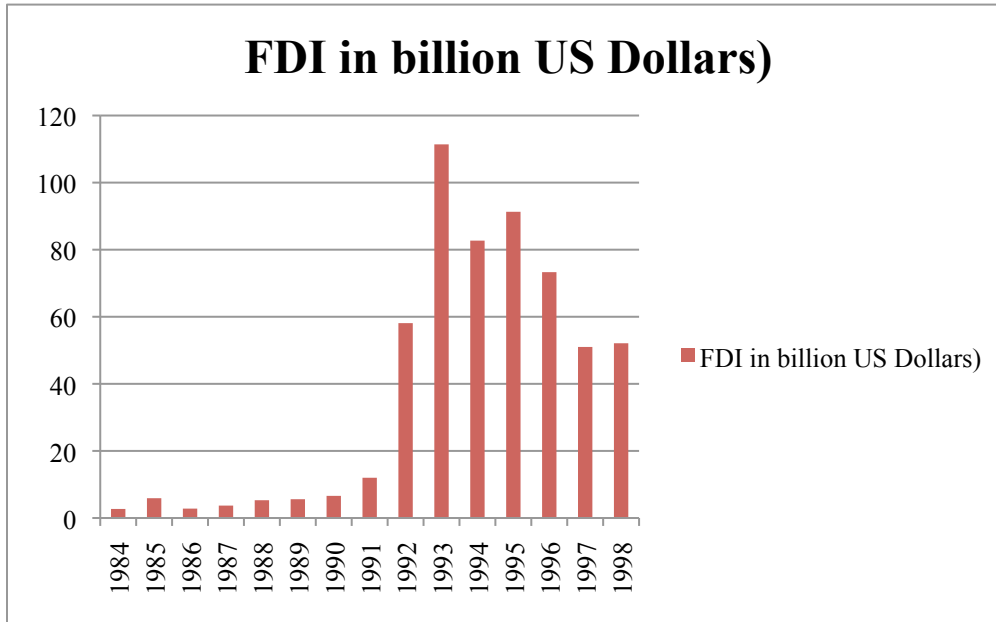
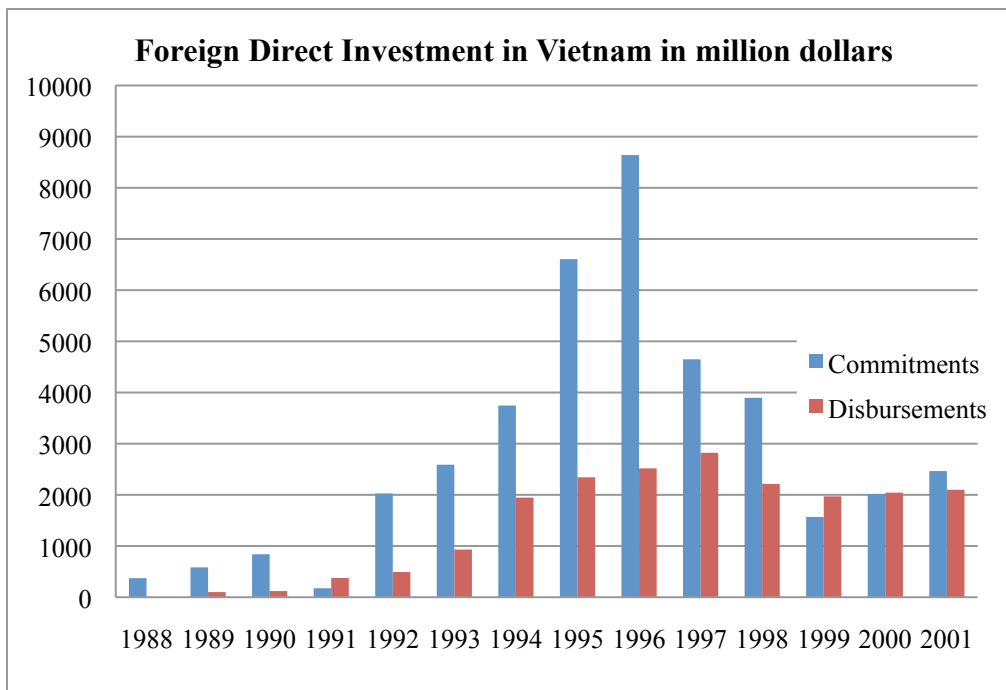


Figure 1.2.6: Foreign Direct Investment to Vietnam



beside the state sector. In 2000, a new Enterprise law was passed making it even easier to register for a new business by lifting many requirements and trimming down the legal procedures. Accordingly, entrepreneurship activities increased tremendously in the private sector (Table 1.2.1).

Table 1.2.1: Number of newly registered enterprises in Vietnam

	<b>1991-1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Private enterprise	29,135	6,412	2,229	6,532	7,085	10,246	11,366
Limited company	15,310	7,304	7,179	12,627	15,120	20,145	20,674
Joint-stock company	524	726	1,243	2,305	3,715	6,470	6,675
Partnership company		2	0	0	1	7	8
1 member limited company		0	0	59	88	125	130
Total	44,962	14,444	21,040	21,523	26,009	36,993	38,114

(Source: Vietnam Ministry of Planning and Investment)

#### 2.4 Problems and challenges following the transition process

Along with many achievements stemming from the reforms, like other transition economies, China and Vietnam experienced some other undesirable consequences. First, the gap between the rich and the poor and between living standards in the rural areas and urban areas expanded. In Vietnam, although the percentage of population living below poverty line declined from 70% in 1986 to 50% in 1993, more than 90% of the poor lived in the rural area, working in the agricultural sector (Nguyen and Ezakhi). The poverty incidence was also more serious in the mountainous and highland areas of Vietnam. Although the Vietnamese socialist doctrine, which still remained deeply in the ideology of the Vietnamese authorities during the transition process, placed strong emphasis on equalities in wealth and income distribution, it was observed that the income ratio between the poorest and the richest in Vietnam rose from 4.9 to 5.5 from 1993 to

1998. Over the same period of time, the Gini coefficient rose from 33 to 35 for Vietnam (Nguyen and Ezakhi).

Second, the reforms challenged the socialist ideology. During the transition process, China and Vietnam still maintained the dictatorship of the Communist Party, favored and emphasized the leading roles of state-owned sectors in the economy, and barely separated the influence of Communist Party over the government. However, the original meaning of socialism and the idea of a central planning economy were not suitable anymore. As a result, the definition of “socialism” and the whole ideology system following it had to be redefined. Some of the ideological moves were the acceptance of the private property ownership rights, the existence of private sectors besides the state sector, and the authority having to give up part of its power over the control of the economy. Nevertheless, the government still dominated the education system, the media, and all means of communication, using them as tools to “educate” new generations of a socialist country and preserving its power. On the other side, along with a free market, the need for more democracy and freedom arose among the people, and conflicted with the desire to maintain the dictatorship power of the Communist Party, causing much resentment among people. Hundreds of thousands of people had to flee from the country to seek refugees in other countries, and many people were kept in jeopardy for political reasons.

Moreover, there was considerable evidence that corruption was a serious problem in both China and Vietnam during the transition process. Authorities and businessmen took advantage of the bottlenecks in the legal and regulation system, and the new business environment to corrupt and, most of the cases, escape without any punishment.

Gaining a license or permit is apt to require bribery. Managers of state-owned enterprises may require bribery before signing a contract. The state is unable to protect the assets of state-owned assets from parasitic managers. Smugglers handle everything from drugs and guns to rice. Police investigations can be compromised. Taxes are assessed arbitrarily.

Local governments establish inspection along highways and extort fees from trucks and travelers. By one estimate corruption in Vietnam adds 5 to 15 percent to the costs of projects involving foreign partners (Chan).

Environmental issues also posed potential threats to the two transitioning economies.

Both countries relied on the extraction of natural resources as one of the main sources for export and income, utilizing outdated technology, resulting high pollution levels. In order to support the heavy industry sectors and receive foreign investments, regulations regarding environment protection had been ignored or could not keep up with the rapid pace of industrial expansion. The government also had minimal resources to develop and carry out a thorough environmental program.

In summary, the transition process of China and Vietnam bears many similarities to those of other transition economies. The short period following the onset of the transition was very painful with high a huge increase in inflation rate, a steep decrease in GDP, and the bankruptcy and decline of the state-owned enterprises. However, after that, more positive consequences are observed such as an increase in entrepreneurial activities, more foreign financial investment, the acceptance of private sector as part of economic force, the approval of some private property ownership rights, and trade liberalization. China and Vietnam also have to undergo some unwanted consequences just like other transition economies such as the growing gap between the rich and the poor, corruption and more social tensions.

On the other hand, unlike other East European countries or the Soviet Union, China and Vietnam still retained the dictatorship of the Communist Party, allowing very little political reforms and personal freedom. Both countries insist that the current transition process is just one new step on its way to socialism.

## CHAPTER 2

# A STUDY OF THE RELATIONSHIP BETWEEN ECONOMIC GROWTH AND ECONOMIC FREEDOM

### 1. Introduction

The examples of Vietnam and China's transitioning process and their successes raise an interesting discussion about the relationship between economic freedom and economic growth. It is clearly demonstrated that a change in the extent of economic freedom can entail considerable changes in a country's economic activities. Economic freedom has been hypothesized to be one of the most significant determinants of economic growth. The role of economic freedom has been even emphasized more since the fall of the Berlin wall and the Soviet Union. In many instances it has been observed that once a nation tears down all the walls, opens their economy and embraces the market economy, it experiences a rapid growth rate, and a huge improvement in the standard of living.

Considering the important impact of economic freedom on economic growth, studying the relationship between them is a very fascinating subject. In the second part of the paper, the impact of economic freedom on economic growth is analyzed using simultaneous equation model. Besides economic freedom, other factors that might lead to more economic growth are also examined.

### 2. Literature review

There is no official definition for economic freedom. However, most economists agree that economic freedom includes the freedom to choose and supply resources, competition in business, the right to trade with others, and the right to secure property rights rightfully obtained by individuals. Gwartney argues individuals have economic freedom when: (a) property they acquire without the use of force, fraud, or theft is protected from physical invasions by others; and (b) they are free to use, exchange, or give their property to another as long as their actions do not violate the identical rights of others (Gwartney 1996).

Within the economic literature, a tremendous amount of work has been done about these topics. Indeed, in his famous book “The Wealth of Nations,” Adam Smith already emphasizes the importance of a free market in which individuals are free to pursue their own interests and how the invisible hand of the market works to raise the wealth of a nation. He claims that, “the obvious and simple system of natural liberty establishes itself of its own accord. Every man...is left perfectly free to pursue his own interest in his own way.... The sovereign is completely discharged from a duty [for which] no human wisdom or knowledge could ever be sufficient; the duty of superintending the industry of private people, and of directing it towards the employments most suitable to the interest of the society.” Similarly, Economics Nobel Laureate Milton Friedman argues that, “I believe that free societies have arisen and persisted only because economic freedom is so much more productive economically than any other method of controlling economic activity.” (Milton Friedman, Foreword in Gwartney et al., 1996).

In the paper “On the Relationship between Economic freedom and Economic Growth”, Haan and Sturm state that economic freedom fosters incentives and the effectiveness of resource allocation, which in turn reinforces productivity and economic growth (2000). They conduct an empirical study examining the impact of economic freedom on economic growth using different

measures of economic freedom. Their main conclusion is that more economic freedom promotes economic growth, but there is no direct relationship between the level of economic freedom and economic growth. An increase in economic freedom boosts a country's growth rate to its steady growth rate but that growth rate is determined by a combination of factors, not just the level of economic freedom alone.

On the same subject, W. Ken Farr, Richard A. Lord, and J. Larry Wolfenbarger utilize the Granger causality methodology to explore the relationship among economic freedom, economic well-being, and political rights (1998). If after the past values for economic growth are controlled, and the past values for economic freedom increase significantly to the explanation of current values of economic growth, economic freedom is said to Granger-cause economic growth. Farr, Lord, and Wolfenbarger conclude that specifically, the results from their research show that economic freedom Granger causes the level of economic well-being for both industrial and nonindustrial countries. In addition, the level of economic well-being is shown to Granger-cause economic freedom, suggesting a feedback effect or evidence that the two are endogenously related. For both sets of countries, evidence is also found that the level of economic well-being Granger-causes political freedom while no reciprocating evidence is found that political freedom Granger-causes the level of economic well-being, implying a univariate line of causation.

Consequently, both economic freedom and political freedom are conducive to economic growth.

In the book "Determinants of Economic Growth", Robert Barro utilizes an econometric model to study the elements that affect economic growth. Barro first discusses the convergence property in his model. He observes from his data set that the countries starting with a lower level of GDP per capita enjoy the most rapid growth rate, during the catch-up period to bring their economy back to its trend line. However, convergence is conditional, and the long term growth

depends on other variables such as government actions, level of human capital, investment ratio, and regional variables. For his empirical model, Barros employs the average years of male secondary and higher schooling, income inequality (Gini index), rule of law index, dummy variable for regional areas (Latin America, Sub-Saharan Africa, and East Asia), log(GDP), democracy index, democracy index squared, and inflation rate variables as independent variables that have influence on economic growth. He concludes that male secondary and higher schooling, life expectancy, rule of law index, and democracy index have a significantly positive impact on economic growth. Interestingly, the GDP per capita variable has a negative impact on economic growth as the result of the convergence property, and Barro refers to the estimated coefficient as the rate of convergence. While a high level of inflation rate in excess of 15% to 20% has an adverse effect on economic growth, Barro finds no conclusive evidence for the impact of more moderate inflation on economic development. He also points out that the geographic location of a nation also affects its economic growth. Whereas locating at Sub-Saharan Africa hinders a nation's growth rate, locating at East Asia can be beneficial. A negative coefficient for the democracy index square implies that there is an optimum amount of democracy. If the level of democracy in one country exceeds the optimal amount, democracy may decrease that country's economic development.

In the book "The Wealth and Poverty of Nations", Landes proposes that cultural norms and institutions also help to justify why some nations grow rich and some remain poor. Among many of the determinants of a nation's success, the rule of law provides incentives and sets the external environment for all the economic activities to happen. A country with a high level of rule of law increases individual's confidence in the governance system and hence encourages them to engage in more entrepreneurial activities. This confirms Barro's conclusion that the rule



of law is a powerful explanatory indicator of economic growth (Barrow 1998). Another aspect of a nation's culture, its religion, is also often argued as having critical impacts on economic growth. In the paper "People's Opium? Religion and Economic Attitudes", Guiso studies several economic attitudes impacted by religious beliefs across nations, controlling for country-fixed effects. After analyzing his panel data, Guiso claims that on average, religion is good for the development of attitudes that are favorable to economic growth such as attitudes towards cooperation, government, women, legal rules, and trust.

In the essay "Some Social Requisites of Democracy: Economic Development and Political Legitimacy", Lipset claims that "From Aristotle down to the present, men have argued that only in a wealthy society in which relatively few citizens lived in real poverty could a situation exist in which the mass of the population can intelligently participate in politics". Lipset proposes that two principle complex characteristics are needed to endorse a stable democracy, which in turn increases economic freedom: economic development and legitimacy. Economic development is the prerequisite condition for the foundation of democracy and a free market. He also argues that the four most important elements to sustain economic development are wealth, education, industrialization and urbanization. Lipset stresses that religious affiliation is an important determinant of economic and political freedom.

### 3. The data

Based on different theories I learn from the literature review, several independent variables, described below, were chosen as explanatory variables for economic growth. The panel data set includes 103 countries over the period of 5 years from 2004 to 2008. The economic growth variable is measured using the real GDP growth rate per year. The degree of economic freedom in each country is quantified using the economic freedom index developed by

the Heritage Foundation/ Wall Street Journal. The Index of Economic Freedom is built upon the analysis of ten specific components of economic freedom, which are business freedom, trade freedom, fiscal freedom, government size, monetary freedom, investment freedom, financial freedom, property rights, freedom from corruption, and labor freedom. The ten component scores are equally weighted and averaged to get an overall economic freedom score for each country. Democracy variable is the political right index compiled by the Freedom House. The index is calculated based on the results from a survey across nations, which consists of ten questions focusing on three main categories: electoral process, political pluralism and participation, and functioning of the government. The rule of law index is compiled by the World Justice project. Other data are collected from the CIA World Fact book, World Bank, and Nationmaster website.

Table 2.1 provides the descriptive statistics for all variables. Azerbaijan and China experienced the highest growth rate in 2008 with the scores of 34.5 and 11.4 respectively. The growth rates for developed countries were quite low such as the scores of -0.7 for Netherlands, -0.3 for Switzerland, 2.1 for the United States in the year 2008. While for most developed countries, the growth rate remained fairly stable over the period of 5 years, some developing countries could observe a sudden leap or decrease in their growth rates. For example, the growth rate for Azerbaijan jumped from 9.8% in 2005 to 19.8 in 2006, or that of Turkmenistan decreased from 20% to 7.5% the following year. There was not much change in the state of economic freedom and political right of a country over the period of 5 years. Hong Kong enjoyed the greatest level of economic freedom, scoring 90.6, while Singapore and Ireland were in the second and third place with the scores of 87.4 and 82.4 respectively in the year 2008.

Table 2.1: Descriptive Statistic

Variable	Mean	Median	Minimum	Maximum	Standard Dev.
Economic Freedom	62.5336	61.1000	42.8000	90.6000	9.6
Political Right	2.90485	2.00000	1.00000	7.00000	1.95
Pop. Density	256.579	79.6500	2.37000	6699.05	908.65
Islam	0.194175	0.000000	0.000000	1.00000	0.47
Christian	0.650485	1.00000	0.000000	1.00000	0.39
Buddhist	0.0582524	0.000000	0.000000	1.00000	0.18
Hindu	0.0194175	0.000000	0.000000	1.00000	0.13
Migration Rate	0.236777	0.000000	-6.47000	11.5200	2.61
Literacy	86.2530	93.5000	21.8000	100.000	17.63
Industry	30.2808	29.7000	8.10000	64.0000	9.41
Service	57.0474	58.0000	24.4000	91.8000	12.98
Gini	39.4097	37.9000	21.7000	70.7000	9.7
OPEC	0.0485437	0.000000	0.000000	1.00000	0.21
Rule of law	0.122311	-0.140000	-1.60000	2.04000	1.0
Growth rate	4.99146	4.80000	-9.20000	34.5000	3.3
Inflation	6.06505	4.50000	-2.60000	55.0000	5.47
Investment	22.6160	21.7000	7.50000	65.1000	6.57
lilies expectancy	4.25152	4.32612	3.41871	4.51918	0.2
l_GDP per cap	8.89687	8.98720	6.39693	11.2997	1.19
l_fertility	0.818594	0.672944	-0.0943107	1.92279	0.49

Most countries in the OPEC group had a relatively high level of economic growth, but a comparatively low level of economic freedom. Regarding the political right variable, most developed countries enjoyed a highly free political system with perfect scores of 7, while low political right scores were widely noticed in developing countries. Most of the countries with the lowest economic freedom scores such as Turkmenistan, Libya, Laos, and Vietnam also had the lowest scores in political rights.

The investment rate and economic growth were highly correlated. Countries with a high investment rate, such as Azerbaijan, China, Vietnam, Estonia, Iran, and so on also experienced a high growth rate. The group of developing countries tended to have a higher investment rate than the group of developed countries. Islam, Hindu, Buddhist, and Christian are dummy variables indicating the dominating religion in a country. The OPEC variable is also a dummy variable receiving the value of 1 if the country is a member of OPEC, and 0 otherwise. In order to reduce multi-collinearity among highly correlated variables, it was decided to use the log\_GDP per capita, log\_fertility rate and log\_life expectancy variables. This technique helps to normalize the dataset for those variables, and reduce variation from normality. The migration rate variable is the difference between the number of persons entering and leaving a country during the year per 1,000 persons (based on midyear population). The net migration rate indicates the contribution of migration to the overall level of population change. The industry and export per GDP variables estimate the percentage of GDP contributed by the industry sector and by exports.

#### 4. The model

Economic freedom and economic growth are highly interdependent, in other words, they are jointly determined and hard to distinguish from each other. Economic freedom is affected by economic growth, and more economic growth may then support and reinforce economic

freedom. Due to the simultaneity characteristics, it was decided to use simultaneous equations to study the relationship between them. Since the simultaneous equation model violates a classical assumption of Ordinary Least Squares, which states that all independent variables cannot be correlated with the error term, a the two-stage least squares technique was adopted to specify the model. From the theoretical review, the migration rate and population density are chosen as the instruments to distinguish the two variables. Migration rate reflects the ability of individuals to relocate capital and human resource of a country, which is intrinsic to economic freedom. Population density is expected to have a positive effect on economic freedom. The more people concentrate in an area, the more power they have over the government to control their own economic activities and their freedom to pursue their entrepreneurial activities.

Growth rate = f (Economic freedom, X)

Instrumented variable: Economic Freedom

Instrumental variables: Migration rate, population density and X, where X is the list of independent variables introduced earlier

It is hypothesized that the investment rate, political rights, economic freedom, industry, service, rule of law, literacy rate, life expectancy, Christianity have positive impact on economic growth, *ceteris paribus*. GDP per capita may have a negative impact on economic growth due to the convergence property, *ceteris paribus*. The impact of other variables such as the OPEC dummy variables, Buddhist, Hindu, Islam religions and inflation rate on economic growth are not clear *a priori*.

Model 1: TSLS, using 515 observations

Dependent variable: growth rate

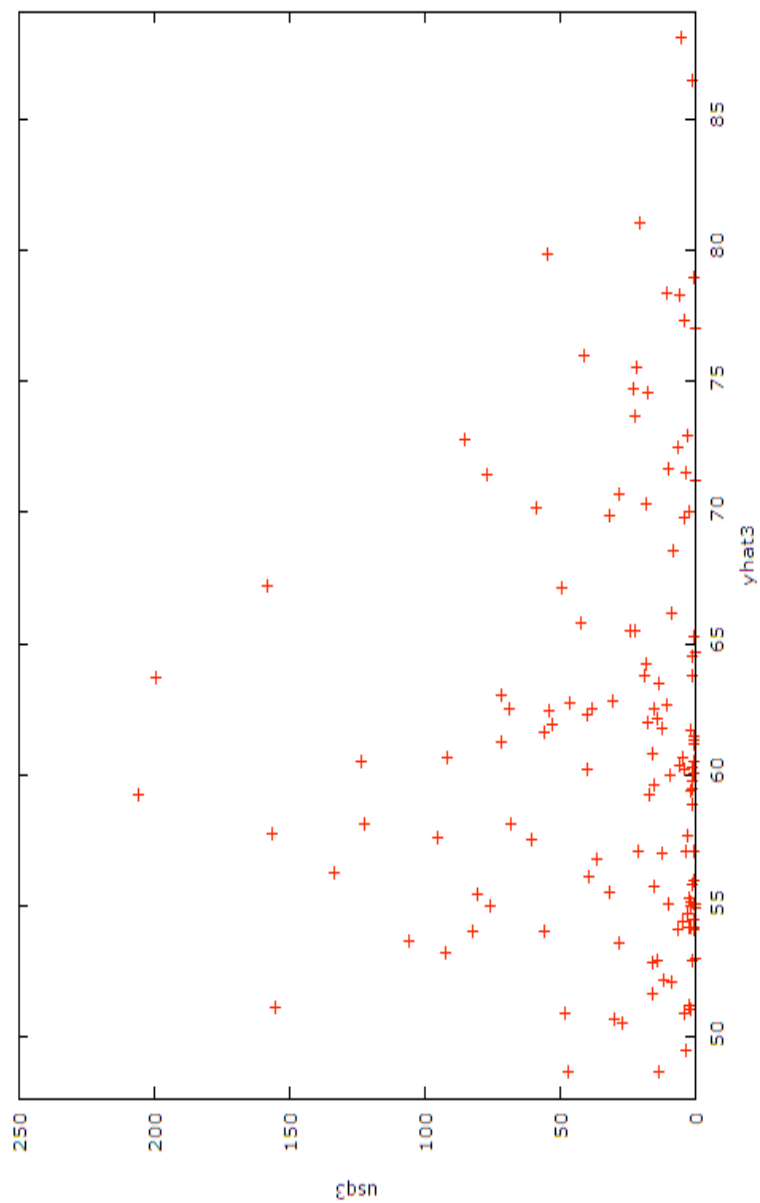
Instrumented: Economic Freedom

	<i>Coefficient</i>	<i>Std. Error</i>	<i>z-stat</i>	<i>p-value</i>	
const	2.31602	5.19458	0.4459	0.65570	
Economic Freedom	0.135895	0.0637853	2.1305	0.03313	**
Political right	0.369624	0.115297	3.2058	0.00135	***
Islam	0.406393	0.540051	0.7525	0.45174	
Christian	-1.00185	0.515477	-1.9435	0.15195	
Buddhist	-0.58675	0.812844	-0.7218	0.47039	
Hindu	2.65619	1.01672	2.6125	0.00899	***
literacy	0.0568667	0.0124503	4.5675	<0.00001	***
industry	0.024354	0.0250059	0.9739	0.33009	
service	-0.0249413	0.0229615	-1.0862	0.27738	
Gini	-0.0258902	0.0213186	-1.2144	0.22458	
OPEC	-1.39392	0.700704	-1.9893	0.04667	**
Ruleoflaw	-1.77992	0.53225	-3.3441	0.83	
inflation	-0.00492861	0.0293676	-0.1678	0.86672	
investment	0.0973931	0.0210551	4.6256	<0.00001	***
l_lifeexpectanc	-2.56822	1.06989	-2.4004	0.1638	
l_GDPpercap	0.0114728	0.320916	0.0358	0.97148	
l_fertility	-0.74607	0.572069	-1.3042	0.19218	

Mean dependent variable	4.991456	S.D. dependent variable	3.301969
Sum squared residuals	3902.246	S.E. of regression	2.802071
R-squared	0.305412	Adjusted R-squared	0.281653
F(17, 497)	13.37197	P-value(F)	3.01e-31

The regression equation has a fairly low  $R^2$  of 0.2816, so about 28.16% of the variations in the dependent variable are explained by the equation. The F-statistic is 13.37, falling to the rejection region. Hence, overall, the equation is well fit and statistically significant. The Hausman test shows that the OLS estimates are consistent with a P-value of 0.14. Besides, the Sargan over-identification test confirms that all instruments are valid with a P-value of 0.32. Consequently, migration rate and population density hold as valid instruments to specify the two-stage least square equation. All the statistically significant independent variables in the equation bear the expected signs. The correlation matrix presents that there are no two variables with the correlation coefficient higher than 0.7. The graph of the square residuals and fitted values reveals some patterns, implying that the variance of the error term might not constant, and heteroskedasticity can be a potential problem of the model (Figure 2.1). Since the risk of correcting for heteroskedasticity is very small, the robust standard error technique was used and the regression was run again. There might be some omitted variables biases in the equation since some variables such as the percentage of private sector contribution in GDP, domestic credit to private sector, export per GDP variables, and regional variables, which may be important factors to explain economic growth, are not included due to the unavailability of the data.

Figure 2.1: Graph of residuals





Model 2: TSLS, using 515 observations

Dependent variable: growth rate

Instrumented: Economic Freedom

Robust (HAC) standard errors

	<i>Coefficient</i>	<i>Std. Error</i>	<i>z-stat</i>	<i>p-value</i>	
const	2.31602	6.27694	0.3690	0.71215	
Economic Freedom	0.135895	0.0729871	1.8619	0.06262	*
Political right	0.369624	0.095255	3.8804	0.00010	***
Islam	0.406393	0.794499	0.5115	0.60899	
Christian	-1.00185	0.667447	-1.5010	0.13335	
Buddhist	-0.58675	0.750802	-0.7815	0.43451	
Hindu	2.65619	1.68949	1.5722	0.11591	
literacy	0.0568667	0.0223152	2.5483	0.01082	**
industry	0.024354	0.0490615	0.4964	0.61961	
service	-0.0249413	0.0309481	-0.8059	0.42030	
Gini	-0.0258902	0.0282678	-0.9159	0.35972	
OPEC	-1.39392	1.38323	-1.0077	0.31359	
Ruleoflaw	-1.77992	0.693819	-2.5654	0.11031	
inflation	-0.00492861	0.0437719	-0.1126	0.91035	
investment	0.0973931	0.0249366	3.9056	0.00009	***
l_lifeexpectanc	-2.56822	1.23813	-2.0743	0.13805	
l_GDPpercap	0.0114728	0.425157	0.0270	0.97847	
l_fertility	-0.74607	0.643236	-1.1599	0.24610	

Mean dependent variable	4.991456	S.D. dependent variable	3.301969
Sum squared residuals	3902.246	S.E. of regression	2.802071
R-squared	0.305412	Adjusted R-squared	0.281653
F(17, 497)	14.11901	P-value(F)	5.27e-33

After the correction, the P-value decreases slightly for most variables. The Hindu and OPEC variables which appear as statistically significant in the previous model now turn out to be not statistically significant. However, economic freedom, political right, investment and literacy and life expectancy variables still remain statistically significant and have positive impact on economic growth as expected. From the regression result, it is ascertained that economic freedom has a positive impact on economic growth at the significant level of 10%. Holding everything else constant, as economic freedom increases by 1 unit, economic growth increases by 0.06 percent. Consequently, the empirical result supports the general theory about the positive relationship between economic freedom and economic growth. The positive coefficient of political right variable validates the theory that political freedom has a positive impact on economic growth. Holding everything else constant, as political right increase by 1 unit, economic growth rate increases by 0.136%. Investment rate plays an important role in explaining the degree of economic growth in one country. As investment rate increases by 1%, economic growth increases by 0.097 %, other things being constant. Although the other variables show as not statistically significant, the good overall fit of the model suggests that the theoretical reasons to include them in the equation still hold true.

## 5. Conclusion

In summary, the empirical result confirms the positive relationship between economic freedom and economic growth. The more economic freedom a society enjoys the more economic growth it can experience. However, for the purpose of the study, other simultaneity that might be a problem in the equation, such as the correlation between political right and economic freedom, or between economic freedom and GDP per capita were not given attention. Hence, the model is somewhat simplified and by no means the full complete model.

## Works Cited

- Barro, Robert. Determinants of Economic Growth: Cross-Country Empirical Study. MIT Press, 1997.
- Bridgham, Philip. "Mao's "Cultural Revolution": Origin and Development." The China Quarterly (1967): 1-35.
- Chan, Anita, Benedict Kerkvliet and Unger Johnathan. Transforming Asian Socialism: China and Vietnam Compared. Rowman & Littlefield Publishers, Inc, 1999.
- DeHaan, J. and J. Sturm. "On the Relationship Between Economic Freedom and Economic Growth." European Journal of Political Economy XVI (2000): 215-241.
- Dollar, David. "Economic Reform and Allocative Efficiency in China's State-owned Industry." Economic Development and Cultural Change (1990): 89-105.
- Farr, W. Ken, Richard A Lord and J. Larry Wolfenbarger. "Economic Freedom, Political Freedom, and Economic Well-being: A Causality Analysis." Cato Journal, Vol 18 (1998).
- Fforde, Adam. "From Plan to Market: The Economic Transitions in Vietnam and China Compared." Chan, Anita, Benedict Kerkvliet and Jonathan Unger. Transitioning Asian Socialism: China and Vietnam Compared. Rowman & Little field Publishers, 1999.
- Friedman, Milton. " Foreword in Gwartney et al." 1996.
- . Capitalism and freedom. Chicago: The University of Chicago press, 1962.
- Fung, K.C., Hitomi Iizaka and Sarah Tong. "Foreign Direct Investment in China: Policy, Trend and Impact." China's Economy in the 21st Century. Hong Kong, 2002.
- Gates, Carolyn. "Vietnam's Economic Transformation and Convergence with the Dynamic Asian Economies." Comparative Economics Study XLII (2000): 7-43.

Guiso, Luigi, Paola Sapienze and Luigi Zingales. "People's opium? Religion and Economic Attitudes." Journal of Monetary Economics (2003).

Gwartney, J. and W. Block R. Lawson. "Economic Freedom in The World." 2008.

Ishihara, Kyoichi. "Inflation and Economic Reform in China." The Developing Economies (1990).

Kornai, Janos. The Road to A Free Economies Shifting from A Socialist System: The Example of Hungary. 1st Edition. New York: W.W. Norton & Company, Inc, 1999.

Landes, David. The weath and poverty of nations. W.W. Norton & Company, 1998.

Le, Phuong and Tho Nguyen. "Vietnam's Foreign Trade in the Context of ASEAN and the Asia-Pacific Region: A Gravity Approach." ASEAN Economic Bulletin (n.d.): 185-199.

Leipzig, Danny. "Awakening the Market: Vietnam's Economic Transition." (1992).

Lin, Justin. "Rural Reforms and Agricultural Growth in China." American Economic Review 82 (1992).

Lipset, Seymour. "Some Social Requisites of Democracy: Economic Development and Political Legitimacy." American Sociology Review (1959).

McMillan, John, John Whalley and Zhu Lijing. "The Impact of China's Economic Reforms on Agricultural Productivity Growth." The Journal of Political Economy 98 (1989): 781-807.

Nguyen, Dung and Misuo Ezaki. "Regional Economic Integration and Its Impacts on Growths, Poverty and Income Distribution: The Case of Vietnam." RURDS XVII (2005).

Nguyen, Dung. "Foreign Direct Investment in Vietnam." (1996).

Oi, Jean. "Fiscal Reform and the Economic Foundations of Local State Corporatism in China." World Politics (1992): 99-126.

Peng, Xizhe. "Demographic Consequences of the Great Leap Forward in China's Provinces." Population and Development Review (1987): 639-670.

Pomfret, Richard. Asian Economies in Transition. Edward Elgar Publishing Limited, 1996.

Robinson, Joan. "The Cultural Revolution in China." International Affairs (1968): 214-227.

Shabad, Theodore. "China's "Great Leap Forward"." Far Eastern Survey (1959): 105-109.

Smith, Adam. The wealth of nation. 1776.

Walder, Andrew. "Some Ironies of the Maoist Legacy in Industry." The Transition to Socialism (1983): 218.

Woetzel, Jonathan. China's Economic Opening to the Outside World: The Politic of Empowerment. New York: Praeger Publishers, 1989.

Yabuku, Susumu. China's New Political Economy. Westview Press, 1995.

Young, Allan, Teodorovic Ivan and Peter Koveos. Economies in Transition: Conception, Status, and Prospect. World Scientific Publishing Co., 2002.