Economic Freedom, Economic Growth, and China

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Abstract: *Cross-country data and the Index of Economic Freedom show that improvements in economic freedom are associated positively with real GDP growth, a finding at odds with the situation in China. The Chinese economy grew about 10 percent per year during the sample period, but its rapid economic growth was accompanied by a relatively undeveloped legal and financial system, lack of economic freedom, and a high level of corruption. China's rating for economic freedom is regularly below the world average and has not improved over time. Ranked only 124th in the 2008 Index of Economic Freedom, China seems to be an exception to the rule in the realms of law, institutions, economic freedom, and economic growth.*

Understanding the nature and causes of economic progress has been a challenge for development economists. The classic Ricardian theory measures economic progress in terms of the quantity of output produced by the economy. It sees the economy as a production machine that transforms labor, natural resources, and capital into output. If output increases more rapidly, it is either because of larger amounts of inputs or because of better technology. The fundamental assumption of the Ricardian theory is that an economy's potential, as defined by its resources and technology, will be fully realized. To development economists, however, this assumption seems far-fetched. They argue that the problem of the less-developed countries is not a lack of potential but an inability to achieve that potential.

The attention of development economics has therefore shifted to how and to what degree economies succeed in realizing their potential. Rather than looking only at resources and technology, development economists have begun to take an

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interest in economic and political institutions. They are interested in two fundamental questions: How do different institutions affect economic development and growth? How and why do good institutions arise?

Recent empirical work has analyzed country-level data on gross domestic product (GDP) and various measures of legal, financial, and political institutions to uncover which institutions are associated with more rapid economic growth. La Porta, Lopez de Silanes, Shleifer, and Vishny (1997, 1998), for example, show that several legal variables, such as respect for the rule of law, protection of property rights, enforceability of contracts, and legal heritage, have a causal relationship with levels of economic growth. Guiso, Sapienza, and Zingales (2004) provide empirical evidence that differences in local financial development explain the spread of entrepreneurship and economic growth.

Another line of research focuses on the link of economic freedom and corruption to economic growth. Empirical studies along this line generally document a positive link between economic freedom and growth (De Haan and Sturm 2000). For two good surveys of this literature, see Levine (1997) and Shleifer, Glaeser, La Porta, Lopez de Silanes, and Djankov (2003). Economic freedom is, above all, the fundamental right of every human to control his or her own labor and property. In an economically free society, individuals are free to work, produce, consume, and invest in any way they please, with that freedom both protected by the state and unconstrained by the state.

The purpose of this article is twofold. The first is to reexamine the link between economic freedom and economic growth, using the Index of Economic Freedom published by the Heritage Foundation and the *Wall Street Journal*. The second is to focus on the implications for China. Toward this end, we established a model of real GDP growth as a function of the level of economic freedom and the change in economic freedom. We found that the change in economic freedom is significantly positive in our growth model. That is, increases in the scores for economic freedom are associated with higher growth rates. On the other hand, the level of economic freedom is not statistically significant after one controls for a vector of standard economic variables that previous empirical studies showed to be linked with growth.

The empirical finding of a positive link of strong institutions and economic freedom with economic growth is at odds with the situation in China. From 1995 to 2008, China's economy grew at an average rate of around 10 percent per year, making it one of the fastest-growing economies in the world. However, China's phenomenal growth performance has been accompanied by a relatively undeveloped legal and financial system, lack of economic freedom, and a high level of corruption. Its rating for economic freedom has constantly been below the world average and has shown little improvement over time. In fact, China ranks only 124th in the 2008 Index of Economic Freedom. Overall, China seems like a counterexample to the findings in the law, institutions, finance, and economic growth literatures.

Literature Review

It is a challenge to understand the nature and causes of economic progress. The classic Ricardian theory measures economic progress in terms of the quantity of output an economy produces. An economy is deemed to be a production machine that transforms labor, natural resources, and capital into output. If output increases more rapidly, it is either because of a larger amount of input or because of better technology. The problem with the classic theory is that an economy's potential, as defined by its resources and technology, may not be fully realized. For many less-developed countries, the problem is not a lack of potential but an inability to achieve that potential.

Unsatisfied with the classic theory, some development economists have begun to take an interest in economic and political institutions. Researchers along this line are interested in two fundamental questions: How do different institutions affect economic development and growth? How and why do good institutions arise? They have had some success in answering the first question. However, the answer to the second question remains elusive.

Recent empirical studies have analyzed country-level data on GDP and various measures of legal, financial, and political institutions to uncover which institutions are associated with more rapid economic growth. La Porta et al. (1997, 1998), for example, show that several legal variables have a causal relationship with levels of economic growth. These legal variables include respect for the rule of law, protection of property rights, enforceability of contracts, and legal heritage. Guiso et al. (2004) provide empirical evidence that differences in local financial development explain the spread of entrepreneurship and economic growth.

Another line of research focuses on the link of economic freedom and corruption to economic growth. The link between prosperity and economic freedom was well established in 1776 by Adam Smith in his influential work *The Wealth of Nations*. Economic freedom is, above all, the fundamental right of every human to control his or her own labor and property. In an economically free society, individuals are free to work, produce, consume, and invest in any way they please, with that freedom both protected by the state and unconstrained by the state. In economically free societies, governments allow labor, capital, and goods to move freely, and refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty itself.

Economic theory indicates that economic freedom affects incentives, productive effort, and the effectiveness of resource use. Since the time of Adam Smith, if not before, economists and economic historians have argued that the freedom to choose and supply resources, competition in business, trade with others, and secure property rights are central ingredients for economic progress (North and Thomas 1973).

Empirical studies have used various indicators of economic freedom to examine the relationship between freedom and growth. Barro (1994) employed the black

market premium on foreign exchange as a proxy for government distortions of markets more generally. Its coefficient in a growth model estimated for about one hundred countries is significantly negative, thereby suggesting that distortions of markets are adverse for economic growth. Alesina (1998) used additional variables on corruption, risk of expropriation, repudiation of contracts, and the rule of law as well as the black premium. All the variables generally affect economic growth.

More recent empirical work has employed direct measures of economic freedom. For example, De Haan and Sturm (2000) compared several indicators for economic freedom and tested the robustness of the relationship between freedom and growth. Their main conclusion was that more economic freedom fosters economic growth. For two good surveys of this literature, see Levine (1997) and Shleifer et al. (2003).

A serious issue in the empirical work is that economic theory does not provide enough guidance with respect to the proper specification of an empirical growth model. Doucouliagos and Ulubasoglu (2006) offer a quantitative review (meta-analysis) of the empirical economic freedom–growth literature. Their study seeks to identify the direction and quantify the strength of the association between economic freedom and growth using results available from published literature. They found that there is an overall positive link between economic freedom and growth. A positive indirect effect of economic freedom on growth through the stimulation of physical capital is also identified. However, they also found that the literature is affected by specification bias with respect to control for physical capital. The omission of physical capital results in larger estimates of the freedom-growth link and the use of panel data leads to smaller estimates of the impact.

Data and Summary Statistics

Index of Economic Freedom

Since 1995 the Heritage Foundation and the *Wall Street Journal* have tracked the march of economic freedom around the world with the influential Index of Economic Freedom. The index uses ten benchmarks to gauge the economic success of 183 countries around the world. The Heritage Foundation describes economic freedom as the absence of government coercion or constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself.

The Index of Economic Freedom measures ten components of economic freedom, assigning a grade for each component on a scale from 0 to 100, where 100 represents the maximum freedom. The ten component scores are then averaged to give an overall economic freedom score for each country. The ten components of economic freedom are: (1) business freedom, (2) trade freedom, (3) fiscal freedom, (4) government spending, (5) monetary freedom, (6) investment freedom, (7) financial freedom, (8) property rights, (9) freedom from corruption, and (10) labor freedom.

We collected the economic freedom index and its ten components for all countries covered by the Heritage Foundation and the *Wall Street Journal* since the inception of the index, from 1995 to 2008. The sample includes 2,116 country-year observations of the economic freedom index.

The summary statistics of the economic freedom index and its ten components are presented in Table 1. Panel A of the table summarizes the amount of economic freedom by year. The world average of the economic freedom index lies in a narrow range of 57–60 over the period 1995–2008. For this period, the mean and median economic freedom scores are, respectively, 58.8 and 59.1, with a standard deviation of 12.0. The economic freedom score shows little improvement over time. The mean is slightly below 60 before 2007. The mean stands at 60.1 and 60.2 for 2007 and 2008, respectively. The reason that economic freedom shows little improvement over time is perhaps that the index covers far fewer countries in the early years, and those that were added later on are mostly developing countries which generally have lower freedom scores. In 1995, the first year of coverage, only 101 countries were covered, while by 2008, the number of countries included in the index increased to 183.

The highest score in the freedom index is 90.5, which was assigned to Hong Kong in 1996. In fact, Hong Kong has been the freest economy during the entire sample period. On the other hand, the lowest economic freedom score is 3.0, which went to North Korea in 2007 and 2008.

Panel B of the table presents the summary statistics of the ten components of the index. The averages of the ten components show substantial differences. The lowest comes from freedom from corruption, with an average of only 40, while the highest goes to monetary freedom, with an average of 71.1.

The score for the corruption component is derived primarily from Transparency International's Corruption Perceptions Index. Corruption erodes economic freedom by introducing insecurity and uncertainty into economic relationships. For all other components, the Heritage Foundation has a specific formula. For instance, it measures the government expenditure component as $100 - \alpha$(Government Expenditure/GDP),[2] where α is a coefficient to control for variation among scores.

Table 2 presents the correlation matrix for the ten components and overall economic freedom. The correlations of the overall freedom score with business freedom, investment freedom, financial freedom, property rights, and freedom from corruption are rather high, with correlation coefficients all above 0.70. The overall freedom score is also highly correlated with trade freedom, monetary freedom, and labor freedom. The correlation coefficients are 0.59, 0.66, and 0.63, respectively.

However, the correlation of economic freedom with fiscal freedom, and especially with government spending, is rather low. Its correlation coefficient with fiscal freedom is only 0.33. In fact, government spending is negatively correlated with seven components in the index. Consequently, the correlation coefficient between economic freedom and government spending is close to zero.

Table 1

Index of Economic Freedom

Panel A. Economic Freedom by Year

	N	*M*	Mdn	Min	Max	SD
1995	101	57.6	57.6	8.9	88.6	12.5
1996	141	57.1	58.2	8.9	90.5	12.9
1997	149	57.3	58.1	8.9	88.6	12.7
1998	155	57.2	59.1	8.9	88.0	13.0
1999	160	57.6	59.3	8.9	88.5	12.9
2000	160	58.1	59.2	8.9	89.5	12.5
2001	155	59.2	60.1	8.9	89.9	12.3
2002	157	59.2	59.1	8.9	89.4	12.1
2003	157	59.6	58.9	8.9	89.8	11.3
2004	155	59.6	58.9	8.9	90.0	11.1
2005	155	59.6	58.2	8.0	89.5	10.8
2006	157	59.9	59.1	4.0	88.6	11.2
2007	157	60.1	59.6	3.0	89.9	11.1
2008	157	60.2	60.0	3.0	89.7	11.5
Overall		58.8	59.1	3.0	90.5	12.0

Panel B. Economic Freedom by Components

	N	*M*	Mdn	Min	Max	SD
Business freedom	2,116	63.9	65.2	0.0	100.0	15.0
Trade freedom	2,116	63.8	66.8	0.0	95.0	17.1
Fiscal freedom	2,116	69.4	71.5	0.0	99.9	16.4
Government spending	2,116	65.8	72.1	0.0	99.3	24.7
Monetary freedom	2,116	71.1	76.5	0.0	95.4	19.2
Investment freedom	2,116	53.0	50.0	10.0	90.0	19.2
Financial freedom	2,116	51.0	50.0	0.0	90.0	20.5
Property rights	2,116	50.4	50.0	10.0	90.0	23.8
Freedom from corruption	2,116	40.3	32.0	4.0	100.0	24.4
Labor freedom	626	60.6	60.6	0.0	100.0	16.6

Table 2

Correlation Coefficients of the Ten Components and Overall Economic Freedom

	1	2	3	4	5	6	7	8	9	10	11
1. Business freedom	1.00	0.38	0.05	–0.19	0.39	0.59	0.61	0.77	0.71	0.52	0.78
2. Trade freedom		1.00	0.16	–0.17	0.32	0.38	0.44	0.41	0.46	0.30	0.59
3. Fiscal freedom			1.00	0.50	0.21	0.02	0.11	–0.06	–0.08	0.17	0.33
4. Government spending				1.00	0.04	–0.16	–0.14	–0.33	–0.41	–0.01	0.04
5. Monetary freedom					1.00	0.38	0.44	0.40	0.44	0.32	0.66
6. Investment freedom						1.00	0.68	0.65	0.54	0.33	0.74
7. Financial freedom							1.00	0.64	0.59	0.37	0.79
8. Property rights								1.00	0.82	0.45	0.79
9. Freedom from corruption									1.00	0.40	0.75
10. Labor freedom										1.00	0.63
11. Overall score											1.00

Data for Macroeconomic Indicators

Data for economic growth and other country-level variables were obtained from the World Bank's World Development Indicators (WDI) database. Economic growth is measured by the growth in real gross domestic product (GDP). The GDP data, measured in current U.S. dollars, are converted using market exchange rates.

The WDI database also provides data for gross national income (GNI). GNI is GDP less net taxes on production and imports, less compensation of employees and property income payable to the rest of the world, plus the corresponding items receivable from the rest of the world (in other words, GDP less primary incomes payable to nonresident units plus primary incomes receivable from nonresident units). GNI is identical to gross national product (GNP) as previously used in national accounts generally.

A country's GNI can be converted to U.S. dollars using either the market exchange rates or the purchasing power parity (PPP) implied exchange rates. The PPP conversion factors take into account differences in the relative prices of goods and services, particularly nontradables, and therefore provide a better overall measure of the real value of output produced by an economy relative to other economies. The GNI (PPP) data are measured in current international dollars, which, in principle, have the same purchasing power as a dollar spend on GNI in the U.S. economy. The World Bank favors this measure for accurate measurement of poverty and well-being. As such, we will use GNI (PPI**<<PPP?>>**) per capita to gauge a nation's economic prosperity.

The summary statistics for the macroeconomic variables described here are presented in Table 3. During the sample period, the average annual GDP growth across all countries was 4.56 percent, with a median of 4 percent. The country having the most rapid growing economy was Equatorial Guinea, which had an average annual GDP growth of 26.14 percent from 1995 to 2008. Seven other countries have an average annual growth rate in double digits. The figure for China is 9.64 percent, more than twice the world average. This makes China the ninth-fastest-growing economy of the 183 economies covered in the database. The country that had the least economic growth is Zimbabwe. In fact, the country's economy declined, on average, by 2 percent each year during the sample period.

The mean PPP-based GNI per capita is US$9,254 and the median is US$4,983. The poorest nation is Democratic Republic of Congo, whose average GNI per capita is merely US$244 for the 1995–2008 period. The wealthiest nation is Luxembourg, for which the corresponding figure is US$49,226. China has an average GNI per capita of US$3,124, far below the world average.

Other variables covered in the table are gross capital formation as a ratio to GDP, export as a ratio to GDP, population growth, and inflation rate. These variables will be used in the regression analysis in the next section.

Table 3

Macroeconomic Indicators

	N	*M*	Mdn	Min	Max	SD
GDP growth (%)	180	4.56	4.00	–2.00	26.14	2.96
GNI per capita (current $)	175	7,140	2,227	112	53,848	11,054
GNI per capita (PPP)	174	9,254	4,983	244	49,226	10,542
EXPORT (%)	176	41.58	35.33	0.30	220.38	27.38
CAPITAL (%)	174	22.61	21.67	7.80	57.77	6.58
POP GROW (%)	181	1.46	1.36	–1.36	6.64	1.22
INLFATION (%)	180	18.43	6.57	–1.00	631.93	55.67

Notes: GDP growth is the average real GDP growth rate from 1995 to 2008. GNI per capita (current dollars) is converted using market-based exchange rates. GNI per capita (PPP) is converted using the purchasing power parity exchange rates. EXPORT is the ratio of exports of goods and services to GDP. CAPITAL is the ratio of gross capital formation to GDP. INFLATION is the annual inflation rate. POP_GROW is the annual population growth rate.

Economic Freedom and Economic Growth

The empirical literature on economic freedom and growth is relatively recent. There were only a few empirical studies until the late 1990s, but since then there has been an explosion of interest in this issue. In general these studies use a measure of economic growth as the dependent variable and a measure of economic freedom as part of a set of explanatory variables. The majority of previous studies regress economic growth rates on the levels of economic freedom. More recent studies show that the change in economic freedom, rather than its level, is robustly related to economic growth (De Haan and Sturm 2000). Gwartney, Lawson, and Holcombe (1999) also find strong evidence in favor of the effects of changes in economic freedom on growth.

Lawson (2006) and De Haan, Lundstrom, and Sturm (2006) engage in a heated debate about an important methodological issue in empirical studies about the connection between economic freedom and economic growth. In a major survey article on the measurement and applications of economic freedom indicators, De Haan et al. (2006) criticize the tendency in many applied studies to use both the level and the change in the EF index as regressors in the growth model. They advocate a specification in which only the change in the EF index is included. Lawson (2006)

argues that the empirical specification that includes both the EF level and change is more defensible. Both of the EF variables are expected to impact economic growth. Some countries, like Hong Kong, have been on top of the EF index every year since 1995. Nevertheless, they may have shown little or no change in their ratings—they are at the top and cannot go up. In contrast, countries like Nicaragua have shown large improvements in their index ratings in recent years but still have relatively low ratings. Would we really expect Nicaragua to grow faster than Hong Kong simply because its rating has increased a lot while Hong Kong's has not? Lawson (2006) argues that by omitting the level of economic freedom from the regression, one fails to acknowledge the possibility that a country with a high degree of economic freedom is likely to outgrow a country with low economic freedom. Thus, there is no statistical reason to omit level in favor of just change.

Based on the results of previous studies, we use the following model to examine the link of economic growth with economic freedom:

$$GDP\_GROWTH_i = \alpha + \beta_1 * EF_i + \beta_2 * \Delta EF_i + \gamma * Z_i + \varepsilon_i, \quad (1)$$

where GDP_GROWTH is the average real GDP growth rate for a country from 1995 to 2008, EF is the country's average level of economic freedom during the sample period, and ΔEF is the change in the freedom index (the 2008 score minus the starting score). The symbol Z represents a vector of standard economic variables that previous empirical studies have shown to be linked with growth.

We do not use panel data for concerns raised by Doucouliagos and Ulubasoglu (2006), who find that the use of panel data leads to smaller estimates of the impact of economic freedom on growth.

The control variables in Z include:

Starting GNI per capita, PPP-based, in 1995 or the year the economic freedom index coverage is initiated for a country (GNI_{1995});
Average ratio of gross capital formation to GDP (CAPITAL);
Average population growth (POP_GROW);
Average ratio of exports of goods and services to GDP (EXPORT);
Average inflation rate (INFLATION).

Physical capital is one of the few variables found to have a clear positive impact on economic growth (Levine and Renelt 1992). The production function approach views economic growth as a function of capital and labor. This approach implies that higher growth rates can be generated by increasing inputs into the production function. Failing to include capital in a growth model will result in biased estimate of the remaining parameters.

In a quantitative review of the literature, Doucouliagos and Ulubasoglu (2006) find that the association between freedom and growth is overstated when capital is excluded from a growth regression model. We therefore include capital in our growth model. Capital is proxied as the gross capital formation as a percentage of GDP. Labor is another variable that is important to economic activities. We use the average annual population growth to control for labor.

Sachs (2003)**<<not on Reference list>>** has stressed the importance of geographic factors, which include tropical climate, access to ocean ports, and distance of country from major trading centers. More trade increases the gains from the division of labor, specialization, and economies of scale. We use the ratio of exports of goods and services to GDP as a proxy for trade.

The regression results are presented in Table 4. In the first regression the only independent variable is the average score of the economic freedom index. Its coefficient estimate is negative and significant. The sign of the coefficient implies that countries with lower levels of economic freedom are associated with higher growth rates. One possible explanation of the negative correlation between economic growth and the level of economic freedom is that rapid economic growth rates are often a phenomenon of developing countries, which typically rank low in the index of economic freedom. Nevertheless, the adjusted R^2 from the regression is rather low. Once the control variables are added in the regression of GDP growth, as in regressions (4) and (6) of the table, the coefficient estimate of the economic freedom is no longer statistically significant.

We are more interested in the association between real GDP growth and the change in economic freedom, or ΔEF. The coefficient estimate of the change in economic freedom, when used alone or together with other control variables, is consistently positive and significant. This result suggests that improvement in economic freedom results in more economic growth. The magnitude of the coefficient is around 0.10. This result implies that if a nation's economic freedom index improves by 10 points over the sample period, the average annual growth rate can increase by 1 percent. The results of the control variables are generally consistent with our expectations. Both capital and population growth are positively correlated with economic growth. Capital and labor are the two key inputs of the conventional Ricardian production model.

The association between inflation and real GDP growth is significantly positive, suggesting that higher growth is accompanied by higher inflation. The starting GNI per capita of a country is negatively associated with its economic growth. This result is consistent with the notion that rapid economic growth is more likely a phenomenon of developing countries, which have lower starting GNI per capita. However, its coefficient is not significant. Similarly, the coefficient estimate of the trade variable is not significant statistically. To summarize, there is a clear and positive correlation between the change in economic freedom and economic growth. This result implies that a nation's economy grows more rapidly as its economic freedom improves.

This result should be interpreted with caution, however. The problem is that a strong positive correlation between economic growth and the change in the freedom index does not necessarily imply that the direction of causality is that change in economic freedom causes economic growth. It could be the other way around (reverse-causality) or that both the change in the freedom index and the growth are responding to other factors (endogeneity). Endogeneity and reverse causality are

Table 4

Cross-Country Regressions of Economic Growth

	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	7.58	4.10	6.84	–0.231	–2.168	–2.55
	(6.51)***	(16.18)***	(5.29)***	(–0.12)	(–1.23)	(–1.33)
EF	–0.052		–0.046	0.0007		0.015
	(–2.67)***		(–2.16)**	(0.02)		(0.53)
ΔEF		0.11	0.098		0.109	0.110
		(3.94)***	(3.49)***		(4.11)***	(4.13)***
ln (GNI_{1995})				–0.280	–0.093	–0.163
				(–1.21)	(–0.53)	(–0.74)
EXPORT				–0.00005	0.0022	0.0011
				(–0.01)	(0.31)	(0.15)
CAPITAL				0.269	0.243	0.246
				(8.0)***	(7.78)***	(7.67)***
INFLATION				0.0093	0.0069	0.0077
				(2.47)**	(2.08)**	(2.11)**
POP_ GROW				0.550	0.897	0.897
				(3.02)***	(4.73)***	(4.72)***
F-value	7.11***	15.49***	10.27***	15.21***	20.24***	17.30***
Adj. R^2	0.037	0.087	0.11	0.369	0.447	0.444

Notes: *** represents statistical significance at 1% level. ** represents statistical significance at 5% level. * represents statistical significance at 10% level. The dependent variable for a country is its average real GDP growth rate from 1995 to 2008. EF is the country's average score on the Index of Economic Freedom during the sample period. ΔEF is the difference between the ending and starting economic freedom score during the sample period. ln (GNI1995) is the natural logarithm of the starting GNI per capita, PPP, in 1995 or the year the index coverage was initiated. EXPORT is the average ratio of exports of goods and services to GDP. CAPITAL is the average ratio of gross capital formation to GDP. INFLATION is the average inflation rate. POP_GROW is the average annual population growth.

important and thorny issues, but they are present in practically any kind of econometric analysis, especially in these cross-country growth regressions. One possible solution is the use of the instrument variable approach. While this approach may potentially deal with the endogeneity problem, it will inevitably invite a whole host of criticisms regarding what the proper instruments should be.

Implications for China

Now that we have established a positive link between change in economic freedom and growth, what are the implications for China? Table 5 presents China's

Table 5

Macroeconomic Indicators and Economic Freedom

	Macroeconomic indicators				Real GDP growth			Index of Economic Freedom		
	GDP (current US$ billion)	GNI per capita (current US$)	GNI per capita, PPP (US$)	Inflation (%)	China	World	China's rank	China	World	China's rank
1995	728	530	1,480	14	11	3.62	7	52	57.6	71
1996	856	650	1,650	6	10	4.70	12	51.3	57.1	97
1997	953	750	1,810	2	9	5.12	17	51.7	57.5	107
1998	1,019	790	1,950	–1	8	3.61	14	53.1	57.2	105
1999	1,083	850	2,110	–1	8	3.37	13	54.8	57.6	104
2000	1,198	930	2,330	2	8	4.11	16	56.4	58.1	98
2001	1,325	1,000	2,560	2	8	3.58	14	52.6	59.2	114
2002	1,454	1,100	2,830	1	9	3.39	13	52.8	59.2	117
2003	1,641	1,270	3,180	3	10	3.93	13	52.6	59.6	120
2004	1,932	1,500	3,590	7	10	6.25	19	52.5	59.6	124
2005	2,236	1,740	4,100	4	10	5.28	11	53.7	59.6	113
2006	2,658	2,010	4,690	4	12	5.95	7	53.6	59.9	118
2007	3,382	2,410	5,430	7	13	5.90	8	52	60.1	133
2008	4,326	2,940	6,020	7	9	4.43	15	53.1	60.2	124

main economic measures from 1995 to 2008. China's GDP reached US$4,326 billion by 2008, making it the third-largest economy behind the United States and Japan.**<<update?>>** On a per capita basis, however, China's economic achievement is less impressive. In 2008, for instance, China's GNI per capita was US$6,020 under the PPP approach and was US$2,940 using the market exchange rates. Both measures were below the world average. China's annual real GDP growth rate is between 8 percent and 13 percent. The average growth rate is 9.64 percent, more than twice the world average. China's growth rate was the ninth-fastest during this period.

Despite its rapid economic growth, China's transition to greater economic freedom has been sluggish over the life of the Index of Economic Freedom. China's overall freedom score is below the world average every year, fluctuating within a very narrow range of 51.3 to 56.4. The freedom score was 53.1 in the most recent year, making its economy the 124th-freest in the 2008 ranking.

Efforts to embrace market principles have been made from time to time, but overall progress has been modest. Rapid development of coastal cities has resulted in increasing disparities in economic freedom and standards of living across the country. Foreign investment is controlled and regulated, and the judicial system is highly vulnerable to political influence. The state maintains tight control of the financial sector and directly or indirectly owns all banks.

China has liberalized parts of its economy to a notable degree since the early 1980s. It joined the World Trade Organization (WTO) in 2001, and its industrial and manufacturing sector is now second in size only to that of the United States. At the same time, however, China remains a one-party state in which the Communist Party maintains tight control of political expression, speech, religion, and assembly. Any social group that can organize on a large scale is deemed a threat, as are many individual dissidents. The government is struggling to manage environmental degradation, demographic pressure, and the world's largest-ever migration from rural to urban areas, all of which contribute to social unrest.

China's judicial system is weak, and many companies resort to arbitration. Local officials can ignore court decisions with impunity. All land is state-owned, but individuals and firms may own and transfer long-term leases (subject to many restrictions) as well as structures and personal property. Intellectual property rights are not enforced effectively. Copyrights, patents, brand names, trademarks, and trade secrets are routinely stolen.

Corruption is perceived as widespread in China. China ranked 72d out of 179 countries in Transparency International's Corruption Perceptions Index for 2008. Corruption severely affects banking, finance, government procurement, and construction, and there is a lack of independent investigative bodies and courts.

Conclusion

Overall, China's low ranking in the Index of Economic Freedom seems well justified. Given the size of its economy and the prolonged period of almost double-digit

growth, China seems to be a notable exception to the findings in the law, institutions, economic freedom, and economic growth literatures.

So what is the secret of China's economic miracle? Can it continue without sound legal, financial, and political institutions and economic freedom? While we do not have clear answers to these questions, we can point out some possible areas for future research. Our empirical model, like any econometric model, inevitably suffers from the drawback that relevant variables such as economic policy are not included in the regression simply because they are not quantifiable. Other things equal, sound economic policies obviously promote economic growth.

Another issue is the impact of state control and the transition from central planning to a market economy. Some argue that state control, if intelligently applied, can boost growth. Cao (2008), for instance, raises the issue of whether competition is always effective. He argues that from an economic perspective, the belief that competition definitely promotes economic efficiency and growth seems to be far-fetched. It ignores market failure and excessive competition.

Finally, when examining China, one should not neglect its special characteristics. China is very different from many other countries, even from the standpoint of freedom. The limited freedom in its financial markets and cross-border capital flows may well have shielded China from the recent financial crises that took place over our sample period.

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