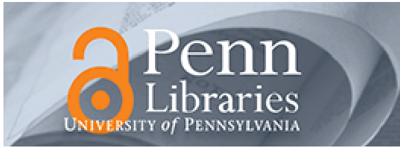


University of Pennsylvania
ScholarlyCommons

Finance Papers

Wharton Faculty Research

6-2011

An Alternative View on Law, Institutions, Finance and Growth

Franklin Allen
University of Pennsylvania

Jun "QJ" Qian

Chenying Zhang
University of Pennsylvania

Follow this and additional works at: https://repository.upenn.edu/fnce_papers

Part of the Economics Commons, and the Finance and Financial Management Commons

Recommended Citation

Allen, F., Qian, J. "., & Zhang, C. (2011). An Alternative View on Law, Institutions, Finance and Growth. Retrieved from https://repository.upenn.edu/fnce_papers/14

This paper is posted at ScholarlyCommons. https://repository.upenn.edu/fnce_papers/14
For more information, please contact repository@pobox.upenn.edu.

An Alternative View on Law, Institutions, Finance and Growth

Abstract

The spectacular economic growth in East Asian economies such as China, South Korea and Taiwan over the past five decades contradicts most of the existing research on law, institutions, finance, and growth. We propose an alternative view based on the comparison of legal institutions and alternative institutions outside the legal system. Despite well-known advantages, the legal system, as a monopolist institution, can be captured by interest groups and become a barrier to innovations. Moreover, in a dynamic environment alternative institutions can adapt and change much more quickly than when the law is used, as this process does not require persuading the legislature and the electorate to revise the law. We argue that in fast-growing economies and during early stages of economic growth, efficient alternative institutions are the main driver for finance, commerce and growth. In static environments with low and predictable growth, legal institutions can play a more important role in supporting finance and commerce. In these environments, however, viable alternative institutions and competition among different types of institutions remain keys to ensuring that the most efficient mechanism prevails and sustains long-term growth.

Keywords

law, institutions, growth, alternative finance, legislature, competition.

Disciplines

Economics | Finance and Financial Management

This working paper is available at ScholarlyCommons: https://repository.upenn.edu/fnce_papers/14

An Alternative View on Law, Institutions, Finance and Growth[*]

Franklin Allen
The Wharton School
University of Pennsylvania
allenf@wharton.upenn.edu

Jun "QJ" Qian[†]
Carroll School of Management
Boston College
qianju@bc.edu

Chenying Zhang
The Wharton School
University of Pennsylvania
chezhang@wharton.upenn.edu

Last Revised: June 2011

Abstract

The spectacular economic growth in East Asian economies such as China, South Korea and Taiwan over the past five decades contradicts most of the existing research on law, institutions, finance, and growth. We propose an alternative view based on the comparison of legal institutions and alternative institutions outside the legal system. Despite well-known advantages, the legal system, as a monopolist institution, can be captured by interest groups and become a barrier to innovations. Moreover, in a dynamic environment alternative institutions can adapt and change much more quickly than when the law is used, as this process does not require persuading the legislature and the electorate to revise the law. We argue that in fast-growing economies and during early stages of economic growth, efficient alternative institutions are the main driver for finance, commerce and growth. In static environments with low and predictable growth, legal institutions can play a more important role in supporting finance and commerce. In these environments, however, viable alternative institutions and competition among different types of institutions remain keys to ensuring that the most efficient mechanism prevails and sustains long-term growth.

Keywords: Law, institutions, growth, alternative finance, legislature, competition.

***JEL* Classifications:** O0; H0; P5.

---

[*] We appreciate valuable comments from Viral Acharya, Jim Heckman, Curtis Milhaupt, Bob Nelson, Katharina Pistor, Phil Strahan and Hayong Yun. Financial support from Boston College and the Wharton Financial Institutions Center are gratefully acknowledged. We are responsible for all remaining errors.

[†] Corresponding author: Finance Department, Carroll School of Management, Boston College, Chestnut Hill, MA 02467. Phone: 617-552-3145, fax: 617-552-0431, E-mail: qianju@bc.edu.

I. Introduction

The post-World War II era witnessed long periods of economic growth around the globe and market-based economic forces are behind most of the successes. By various tangible measures the most impressive growth and transformations took place in Asia. First, the "Four Tigers"—Republic of Korea (Korea hereafter), Taiwan, province of China (Taiwan hereafter), Hong Kong Special Administrative Region of China (Hong Kong hereafter) and Singapore—along with Japan showcased earlier episodes of 'economic miracles' between the 1960s and 1980s. In the case of Taiwan and Korea, their per capita GDP, in Purchasing Power Parity (PPP) terms, went from 916 and 845 international dollars in 1950, similar to those of many African countries and only 13% of that of the UK and France, to similar levels to the U.K. and France in 2010 (Table 1).[1] Assuming growth rates in per capita GDP persist, it will take less than 10 years before they catch up to the US.

Second, the size of China's economy went from less than 10% of that of the US in 1980 to the second largest economy and two thirds of the US (in PPP terms) at the end of 2010. In PPP terms, China's economy will surpass the US and become the largest in the world in 2016 according to IMF's World Economic Outlook (April 2011), and will have *double* the US GDP around 2035 as long as it maintains an average growth rate that is at least twice as high as that of the US. Transiting from a central-planning to a (partially) market-based economy, China's rise as a world power, lifting hundreds of millions of people out of poverty in the process, represents one of the greatest economic achievements in history. India, currently the fourth largest economy in the world in PPP terms, has also been quite successful in terms of economic growth during the past two decades, and so have other southern and south-eastern Asian countries such as Vietnam. Most people would agree that Asia, and in particular, China and India, will continue to be the main engine for global economic growth in the foreseeable future.

[1] The GDP of Korea and Taiwan, in PPP terms, are also among the largest twenty economies in the world as of 2010.

Economists have long argued that a key driver for long-run economic growth is efficient institutions that facilitate business transactions (e.g., Coase, 1960; North and Thomas, 1973; Williamson, 1979). Much of institutional economics developed over the past two decades has emphasized the role of two types of *formal* institutions. First, pioneered by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998; LLSV hereafter), the law and finance literature posits that a strong legal system that enforces contracts and resolves disputes is important for finance and growth. Second, a developed financial system, and in particular, financial markets and a banking sector, are vital sources of external financing to fund firm growth.[2] In earlier work (Allen, Qian, and Qian (AQQ), 2005), we show that China provides a significant counterexample to the existing literature. During China's transformation (1980-2010), neither its legal nor financial systems were well developed and the government was regarded as autocratic and corrupt, and yet its economy grew at the fastest pace in the world. Other research has shown that, similar to China, the legal system plays a very limited role in finance and commerce in other successful Asian economies including Taiwan, Korea, Vietnam and Japan. Our other work finds that despite the English common-law origin and a British-style judicial system, formal legal and financial institutions are of limited use in India (Allen, Chakrabarti, De, Qian, and Qian (ACDQQ), 2011). Even in developed countries such as the UK and Germany, where financial markets and formal legal and financial institutions were first developed, it is debatable about the importance of the role of the law and legal system during their early stages of economic development.

The conventional wisdom would characterize the economic performance in China as 'successful *despite* the lack of Western-style institutions.' By contrast, we argue in this paper that China has done well *because of* this lack of Western-style institutions – in that conducting business

[2] The finance and growth literature suggests that the development of stock markets and banks contributes to a country's economic growth (e.g., McKinnon 1973; King and Levine 1993; Levine and Zervos 1998). Researchers have strengthened this view with evidence at the industry and firm levels, that the access to market and bank finance has a positive and *causal* impact on firm growth (e.g., Jayaratne and Strahan 1996; Rajan and Zingales 1998).

outside the legal system in *fast-growing* economies, such as the current economies of China and India and the economies of Taiwan and Korea in the 1960s through 1980s, can be superior to using the law as the basis for finance and commerce. In China and India, state-owned enterprises and publicly listed firms have much easier access to legal institutions and banks and financial markets than non-state, non-listed firms in both countries. These non-state, non-listed firms conduct business outside the legal system and do not rely on financial markets or banks for most of their financing needs. Instead, they use methods based on reputation, relationships and trust to settle disputes and induce good behaviors and rely on alternative financing channels such as trade credits and funds from family and friends to finance their growth. In both countries and especially in China, it is the non-state, non-listed firms that provide most of the economic growth and employ most of the labor force. To a large degree, similar "alternative institutions" are also behind the success of other Asian economies, and have played an important part in other developed countries such as the UK and Germany, at least during early stages of their growth.

We develop our main theses by comparing and contrasting two different sets of systems. In one system, observed in developed and democratic countries such as the US, there is a commitment to use the law as the basis for finance and commerce, with legal institutions serving as the ultimate source for resolving disputes and enforcing contracts. Any fundamental change to the law must be approved by the legislature and electorate ("top-down" approach to deal with changes). In the other system, with China providing the leading example, there is no clear definition of *private* property rights in the constitution. In place of the law, nonlegal mechanisms are the norm for conducting business, and alternative institutions constantly adapt to changes in the economy while competition ensures the most efficient mechanism prevails ("bottom-up" approach).

Despite well-know advantages, there are problems in using the law and legal system as the basis for finance and commerce, and these problems can become impediments for innovations and

growth. A central concept in the legal paradigm is the protection of private property rights and one of the intensely debated topics is intellectual property rights including patents and copyrights. The practice of enforcing such rights by courts is much more vigilant in developed countries than in developing countries. An extensive literature has found mixed results on the relationship between patent/copyright protection and the pace of innovations. On the one hand, exclusive property rights provide strong incentives for innovations and do lead to more innovations in some industries such as chemicals and pharmaceuticals. On the other hand, such a positive relationship is not observed in most other industries; instead, excessive protection deters competition, which is another important factor in spurring innovations. One problem with the litigation systems is that they induce rent-seeking behaviors by vested interest groups. With abundant resources they can undertake various measures and use the legal system to block competition and innovations from others, and this type of behavior slows down growth and reduces social welfare.

Another problem of using the law is limited capacity and fixed costs associated with revising the law as required by changes in the economic environment. In a democracy, the legislature must approve any revisions in the law before companies and investors can implement new technologies or innovations. However, in any given period politicians have limited time to devote to one area of the law, implying a fixed cost in revising the law. A good example illustrating such limited capacity is the reform of the US payments system. At the beginning of the twenty-first century the US had a nineteenth century payments system, relying mostly on paper checks, and significantly lagging behind other developed nations. Checks had to be physically transported from where they were deposited to a central operations center, then to the clearer and then back to the banks they were drawn on. Despite repeated calls for changes from the banks and businesses, the US Congress was not interested in solving this seemingly simple yet costly problem, until the September 11, 2001 terrorist attacks, which grounded commercial flights and halt the check clearing

process. Congress passed the Check Clearing for the 21st Century Act and it became effective in October 2003. This allows electronic images to be a substitute for the original checks.

The examples on legal and alternative institutions motivate our analysis on the comparison of the system based on rule of law and legal institutions vs. the system relying on alternative, nonlegal institutions. Using the law and the legal system has many important advantages. The legal system of a democracy ideally allows equal and full access by all and fairness in trials and settlements. With powerful enforcement mechanisms including civil and criminal penalties, disputing individuals, firms and organizations have strong incentives to follow the resolutions backed by courts and the government. This in turn provides long-term stability on how things should be done in practice. By using the entire legal system, the marginal costs for handling an additional case (e.g., enforcing similar types of contracts or resolving disputes) can be much lower and this improves overall efficiency.

However, there are at least two significant disadvantages in using the law and legal institutions. First, research on political economy factors – in particular, work by Rajan and Zingales (2003a; 2003b) – argues that rent-seeking behaviors by vested interest groups can turn the legal system, a monopolist institution, into barriers to change. We expect these problems to be much more severe in developing countries, where the costs of building institutions are enormous. We argue that one way to solve this problem is not to use the law as the basis for finance and commerce but instead to use alternative institutions. Second, as shown by the example of reforming the US payment system, the capacity of the legal system and legislature can impose significant fixed costs in revising the law and thus delaying the pace of innovations. These fixed costs can further increase if the people in charge of revising the law (e.g., politicians and judges) lack expertise in business transactions. Further, interest groups with more resources may receive more protection than individuals, and this asymmetric protection system induces even more rent-seeking behaviors and

further deters innovations.

In fast growing economies and during early stages of economic development, characterized by frequent, fundamental changes in the economic environment, the disadvantages of using the legal system can overshadow its advantages. Thus, conducting business without using the law and legal system, as witnessed in China and other Asian economies, can be a superior model. In addition to minimizing the political economy costs associated with legal institutions, using alternative mechanisms is advantageous in that such mechanisms can adapt and change much more quickly than the law. In particular, competition among different networks and institutions can ensure the most efficient mechanism prevails, and it is not necessary to persuade the legislature and the electorate that the law needs to be revised when circumstances change.

There are limitations to alternative mechanisms. By design these mechanisms often exist within a network (or networks) of firms and investors and may be inaccessible to outsiders. With frequent changes and limited enforcement—since penalties cannot be imposed with authority, these systems can generate instability and hence weak long-term incentives. While in a fast-growing economy profit-sharing in the long run and reputation-based mechanisms can ensure "good" (cooperative) behaviors, these mechanisms may be insufficient to induce such behaviors in environments with limited future profits. On the other hand, in such static environments with infrequent changes to the fundamentals (e.g., a developed economy with low and predictable growth rates), the fixed costs of using the legal system are relatively small; hence the law and legal system can be superior to the alternative mechanisms.

We conclude that in fast-growing economies and during early stages of economic growth, efficient alternative institutions are the main driver for finance, commerce and growth. Therefore, one of our main policy implications is that in emerging economies, efficient nonlegal governance mechanisms and financial institutions should be encouraged and developed alongside the

development of formal legal and financial institutions and markets. In more static environments with low and predictable growth, legal institutions can play a more important role in supporting finance and commerce. In these environments, however, it is still important to have a viable alternative system as the competition among different types of institutions is the key to sustaining long-term growth. In particular, competition from alternative institutions can exert positive impact on the further development of legal institutions, so that they are less likely to be captured by interest groups and become more efficient in adapting to changes.

We also provide testable predictions and contrast them with other literature on law, institutions, finance and growth. First, much of the finance and growth literature focuses on the development of financial markets and formal institutions, such as banks, as the conduit for growth, and regards alternative finance as "picking up the slack" of formal finance and is therefore more costly for firms. By contrast, our theory argues that nonmarket, nonbank finance, backed by alternative mechanisms, can be superior to bank and market finance, backed by legal institutions, in fast-growing economies. Our theory also indicates that excessive regulation of alternative financial institutions, such as informal credit agencies, may be counter-productive in emerging markets. Second, the difference in how legal and alternative institutions adapt to changes implies that the pace of innovations is faster in economies, especially fast-growing economies, with effective alternative institutions than that in economies with a dominant but rigid legal system. Innovations may be stymied if the legal system is captured by special interest groups. The theory also sheds light on the comparison of different corporate governance systems among *listed* firms. The effectiveness of shareholder-based system, prevalent in the US, UK and other common-law countries, depends crucially on the law and legal institutions. A governance system that includes non-shareholder stakeholders, such as employees, business partners, customers and local communities, on the other hand, can be more effective in environments of weak laws and formal

legal institutions. Hence, in most emerging countries firms and corporate sectors with strong stakeholder-based governance mechanisms are more likely to succeed.

In Section II of the paper we present a series of case studies demonstrating the importance of alternative institutions and how they work in different countries. In Section III we provide examples illustrating the problems with using the law as the basis for finance and commerce. We compare and contrast the advantages and disadvantages of alternative and legal institutions in Section IV and discuss conditions for developing both types of institutions. We then discuss policy implications and empirical predictions in Section V. Finally, Section VI concludes.

II. Case Studies and Examples of Alternative Institutions

In this section we provide a set of case studies on how alternative institutions and governance mechanisms work in different countries. We first study China and India, the two largest and fastest growing emerging economies, as well as 'emerged' East Asian economies Taiwan and Korea. We then look at a few developed countries, including Japan, Germany, and the UK. The main purpose of all these case studies is to highlight the importance of alternative institutions in each of these economies' high growth periods.[3]

II.1 Alternative Institutions in Successful Emerging Economies: China and India

Using information from the IMF, Table 1 presents GDPs based on simple exchange rates and international dollars (PPP terms) and the growth rates in GDPs and per capita GDP (both in constant prices) during 1990-2010 for the top twenty-five countries in each category.[4] China is leading the world in terms of growth rates of both GDP and per capita GDP over this period.

[3] See Allen and Qian (2010) for more details on how nonlegal institutions can deal with complicated, international transactions. For example, the global diamond industry has historically operated outside the legal systems and systematically ignored state-created laws (also see Bernstein 1992). Another industry that has relied on out-of-court mediations and arbitrations to settle disputes is reinsurance.

[4] Countries with population less than 10 million, GDP less than US$ 50 billion in 2010, or less than 15 years of GDP observations are excluded from the rankings in Table 1.

According to the IMF, China's economy will surpass the US and become the largest in the world in PPP terms in 2016. Sustaining the average annual growth rates of over 10% in GDP and over 9% in per capita GDP will be difficult for China. However, as long as it maintains a growth rate that is at least twice as high as that of the US (e.g., 7% for China and 3% for the US), China will have double the size of the US around 2035. Figure 1 compares growth in per capita GDP (in PPP terms) in Taiwan and Korea during 1960-2006 and China during 1980-2006 (i.e., first year for China in the figure correspond to 1980). Given that China's growth path is quite similar to that of Taiwan and Korea, only delayed by 20 years, it is reasonable to project that per capita GDP in China would catch up with the level of developed countries in another two to three decades if current trends continue. While economic growth has widened the income and wealth gap in China as compared to the pre-reform period, it has elevated hundreds of millions of people from absolute poverty (Ravallion and Chen, 2004). The growth rates in GDP and per capita GDP for India are the third highest in the world during 1990-2010. At the end of 2010, India's PPP-adjusted GDP is the fourth largest in the world and is expected to surpass Japan for the No.3 spot in the next few years. With 40 percent of the world's population and the two largest emerging markets in the world, China and India are expected to play an increasingly important role in the global economy for years to come.

The economic performance of China and India presents significant challenges to existing literature. The 'conventional wisdom' is that a necessary condition for long-run economic growth is strong, Western-style institutions, including laws that protect small investors, a legal system that enforces contracts and resolves disputes, a financial system with efficient financial markets and a banking sector, and a democratic and benign government. However, AQQ (2005) and ACDQQ (2011) document that both China and India have ineffective legal systems, banks and stock markets that are small relative to the economies and have played a limited role in allocating resources to most efficient uses, and governments that are regarded as among the most corrupt in the world.

These two countries also present distinctly different cases in their histories of developing Western-style legal and other formal institutions. Transiting from a socialist system to a market-based system, China had no formal commercial legal system and associated institutions in place when its economy began to take off in the 1980s. However, historically China had a highly commercialized society without the development of Western institutions. India, on the other hand, has a long history of Western legal institutions and financial systems due to its colonial ties to the UK. Its formal legal and commercial banking systems date back more than two centuries, and the Bombay Stock Exchange (BSE), at 130 years, is the oldest in Asia. Yet, Indian firms, like their Chinese counterparts, generally conduct business with little reliance on the legal system.

China

While there are many factors that contribute to economic growth in any country, we want to emphasize the role of alternative institutions in funding the growth of different corporate sectors in China. Following AQQ (2008), we classify all the Chinese firms into three sectors: the State Sector (state-owned enterprises or SOEs, and all firms where the central government has ultimate control), the Listed Sector (publicly listed and traded firms with most of them converted from the State Sector), and the Hybrid Sector with all non-state, non-listed firms.[5]

In our earlier work (AQQ 2005, 2008), we document that SOEs and publicly listed firms have much easier access to the legal system and banks and financial markets than firms in the Hybrid Sector. While detailed data on firm-level financing is difficult to obtain for many firms in the Hybrid Sector, in aggregate this sector raises most of its external finance from nonbank sources. The size of the 'shadow banking' system is large, estimated as accounting for half of the total

[5] It is important to point out that the Hybrid Sector includes privately or individually owned firms, and firms that are partially owned by *local* governments (e.g., Township Village Enterprises or TVEs). For more details on the descriptions and discussions of these three corporate sectors, see AQQ (2008). For a growth model explaining China's growth, see, e.g., Song et al. (2011); for a review of China's economic growth during the past thirty years, see the book, "China's Great Economic Transformation," edited by Brandt and Rawski (2008).

financing in China.[6] Despite the obstacles to access bank and market finance, the growth of the Hybrid Sector has been much higher than that of the State and Listed sectors and contributes most of the economic growth. For example, in terms of industrial output, the Hybrid Sector grew at an annual rate of over 30% between 1998 and 2010, while the State and Listed Sectors combined grew at around 17.8% during the same period. The total output in 2010 is $7,832 billion for the Hybrid Sector, while it is around $2,903 billion in the State and Listed Sectors combined. In terms of their contribution to the entire economy: the State Sector contributed more than two thirds of China's GDP in 1980 and (non-agricultural) privately owned firms, a type of Hybrid Sector firm, were negligible, but in 2008 the State Sector only contributed 35% of the GDP (*China Statistical Yearbook*, 1998-2009). In fact, with large samples of firms (from sources) with various ownership structures, Liu and Siu (2007) and Dollar and Wei (2007) both find that the return to capital is much higher in non-state sectors than the State Sector, and that a capital reallocation from state to private sectors would generate more growth in the economy.

Over the period from 1990 to 2010, the Hybrid Sector employed an average of over 70% of all non-agricultural workers; the TVEs (part of the Hybrid Sector) have been the most important employers providing (non-agricultural) jobs for residents in the rural areas, while (non-agricultural) privately owned firms employ more than 40% of the workforce in the urban areas. Moreover, the number of employees working in the Hybrid Sector has been growing at 3.9% over this period, while the labor force in the State and Listed Sectors has been shrinking. These patterns are particularly important for China, given its vast population and potential problems of unemployment and social unrest.

What economic lessons can be learned from the extraordinary performance of the Hybrid Sector in China? We argue that they are doing something fundamentally different that (Western)

[6] See "Chinese Finance: A Shadowy Presence," H. Sender, *Financial Times*, 04/01/11.

economists have yet to fully understand. In the West, it is taken for granted that finance and commerce should be undertaken using the law as the basis for contracts. Many would agree that the same argument should be applied to China:

"*The modern corporation based on a Western model would be the essential vehicle for private economic development*."

Interestingly, this statement was not written today but was the view of China's first Company Law in 1904 (*Gongsilü*), drafted by the then newly created Ministry of Commerce (*Shangbu*) of the waning Qing government and aimed at promoting China's industrial development. Several subsequent versions of the Company Law (1904-1946) tried to promote the development of share-holding corporations with limited liabilities, but despite these attempts the model of Western-style corporations was never taken up in China. An important factor is that the philosophy of having a disperse ownership that included outsiders ran directly against the traditional Chinese model of keeping business within the family. Indeed, most firms' fear of incorporation stemmed from their distrust of government and unwillingness to let strangers gain partial control of the firm.[7]

Despite the separation of finance and commerce from the legal system, China had a highly commercialized society. The earliest form of capitalism can be traced back to the late Ming Dynasty (17th century), with commerce initiated in the Zhejiang-Jiangsu area and further developed during the Qing Dynasty (17th to early 20th century). The Opium War (1840s) between China and UK destroyed China's sovereignty, but it brought Western-style legal and capital systems into China's coastal areas (until 1949). During this period, foreign systems and the Chinese system co-existed and commerce boomed. Yet, despite the entrance and development of numerous Western-style courts in Shanghai and other major coastal cities, most business-related disputes were resolved outside courts. Since the Qing Dynasty, dispute resolution by guilds (merchant coalitions), families,

[7] For more evidence on the history of the development of China's financial system in the period discussed, see, for example, Kirby (1995), Lee (1993) and Goetzmann, Ukhov, and Zhu (2004).

and local notables based on explicit and implicit regulations of guilds, family traditions, and social norms was commonplace. Chinese firms on the mainland (pre-1949) and later in Taiwan (after 1949) did not use the provisions of the law but again conducted commerce outside the formal legal system. Modern equivalents of these dispute and contract enforcing mechanisms are behind the success of firms in the Hybrid Sector since 1979.

The development of China's financial system from the late 19th century to the early 20th century was highlighted by the emergence of Shanghai as the financial center of Asia. With thriving entrepreneurial and trading activities, financial institutions proliferated and financial innovations surged. Merchants used up to eleven currencies in their transactions, some of which were printed by local banks. The exchange rates of local currency saw wide fluctuations; many unregistered local banks (*diaotang*) engaged in high-leverage credit transactions with little capital reserves and defaulted frequently. At the same time, merchants' fear of risk spawned an active insurance industry, which was first introduced by the British. To alleviate the problems of asymmetric information, foreign merchants hired Chinese middlemen (and guarantors) to select Chinese merchants. Chinese and foreign merchants also devised the "commission indent system," an early form of trade credit allowing firms and institutions to operate with minimum financial resources. The stock exchange in Shanghai was the largest in Asia for most of the 1920s and 1930s. Interestingly, most of the development of China's sophisticated financial system prior to 1949 coincided with one of the most volatile periods in its history characterized by political turmoil and (civil and foreign) wars.

Alternative institutions in the Hybrid Sector have two important and related components: The first is the way in which investment is financed. The second is corporate governance. During a firm's life cycle, how the firm acquires its "seed" capital is arguably the most crucial financing stage. AQQ (2005) present evidence on channels of seed capital, including funds from family and

friends and loans from private (unofficial) credit agencies (see also Tsai 2006). There is also evidence that financing through illegal channels, such as smuggling, bribery, insider trading during early stages of the financial markets, and other underground or unofficial businesses also play an important role in the accumulation of seed capital. Though a controversial issue for the government, our view, based on similar episodes in the history of other developing countries, is that as long as the purpose of money making is to invest in a legitimate company, it may be more productive for the government to provide incentives for investment rather than to expend the costs in discovering and punishing these activities. Once a firm is established and doing well, internal finance and financing among business partners and other firms (e.g., trade credits) can provide the funds necessary for growth.

One of the most important alternative corporate governance mechanisms is competition in product and input markets, which has worked well in both developed and developing countries (e.g., McMillan 1995, 1997; Allen and Gale 1999; Giroud and Mueller, 2011). A relevant factor for competition in an industry is entry barriers for new firms, as lower entry barriers foster competition. Djankov, La Porta, Lopez-de-Silanes, and Shleifer (DLLS hereafter, 2002) find that countries with less regulation of entry have less government corruption and smaller unofficial economies. Another important mechanism, as discussed above, is reputation, trust, and relationships. Greif (1989, 1993) argues that certain traders' organizations in the 11th century were able to overcome problems of asymmetric information and the lack of legal and contract enforcement mechanisms, because they had developed institutions based on reputation, implicit contractual relations, and coalitions.[8] Some aspects of the growth of these institutions resemble what worked to promote commerce and the financial system in China prior to 1949 and the operation of the Hybrid Sector today. Without a dominant religion, many argue that the most important force in shaping social values in China and

[8] Stulz and Williamson (2003) point out the importance of cultural and religious beliefs for the development of institutions, legal origins, and investor protections.

other Asian countries is the set of beliefs first formalized by *Kongzi* (Confucius) more than 2,500 years ago. They clearly define family and social orders, which are very different from western beliefs on the rule of law. An implication of these beliefs is that reputation, relationships and trust are of high value in finance and commerce.

To summarize, relying on alternative mechanisms, China has a long history of developing finance and commerce outside the legal system. In recent years, there has been a concerted effort by the government to improve China's legal system, including passing new laws in finance and commerce similar to those in western countries. In our view, however, these laws have very limited impact in practice other than 'window dressing' for western investors who do not understand China.[9] In fact, a major concern for China going forward is the 'favorable treatment,' in the form of low-cost financing and other benefits, received by the State and Listed Sectors over the Hybrid Sector. While the State Sector has played a positive role during the financial crisis in terms of stabilizing the economy and picking up the slack for employment, too much cheap credit pumped into this sector has generated 'bubbles' in the real estate sector and implies that the truly efficient firms in the Hybrid Sector have not been funded by the banking sector (e.g., Kirby 2011).[10]

India

A review and comparison of India's corporate sectors also provide a good example of the effectiveness of alternative mechanisms and problems with legal institutions. With its English common-law origin, legal protection of investors *by the law* in India is one of the strongest in the world. Moreover, India has had a British-style judicial system and a democratic government for a long time. However, evidence from ACDQQ (2011) paints a different picture of investor protection

---

[9] A good example is the bankruptcy law, with the current version enacted in June 2007. In many aspects it resembles bankruptcy codes in western countries. For example, secured creditors are paid ahead of employee claims, and allowed to vote in the reorganization plan. However, in most of the bankruptcy cases, creditors have little influence on the process; deviations from the stated priority rules are common place. When judges make decisions they often follow regulations from the State Council rather than bankruptcy law. See, e.g., AQZZ (2010), for more details.
[10] With the credit crunch following the 2007-2009 global financial crisis, rates on the "unofficial" (*minjian*) loans (uncollateralized) range from 7%-10% per month in Guangzhou, while the bank rate for a six-month loan is set at 5.85% per annum (*Xinhua News*, 5/08/2011).

in practice. Based on widely used measures, the effective level of investor protection and the quality of legal institutions in India is not much different from other large emerging economies. The wide gap between investor protection on paper and in practice can be attributed to a slow and inefficient legal system and government corruption in India.[11] The Indian economy is unbalanced relative to other large economies, in that 52 percent of output is from services, 26 percent is from manufacturing and 22 percent is from agriculture (67 percent of workforce). Manufacturing industries have not done well, and a widely accepted reason is that they are constrained by unions and political economy factors, including corruption and bureaucracy in the government and legal system. New industries like software have done much better because they are not constrained by political economy factors as much and rely more on alternative mechanisms.

With a large sample of firms from all industries that include state-owned firms, listed firms and non-state, non-listed firms, ACDQQ (2011) document that internal finance is the most important financing source. Alternative finance, defined as financing from all non-bank, non-market sources and including trade credits and funds from family and friends, constitutes the most important form of *external* finance. Not surprisingly, small and unlisted firms rely on alternative finance for a much greater proportion of their total funding needs. On the other hand, the size of banking sector and financial markets is small relative to the size of the Indian economy, and alternative finance dominates financing from banks and financial markets *combined*. As mentioned earlier, most existing research characterizes the role of alternative finance as "picking up the slack" of bank and market finance, and thus it is more costly. But ACDQQ (2011) find that firms' access to bank finance is *not* associated with higher growth rates. These results indicate that bank and market finance is not superior to alternative finance in fast-growing economies such as India.

ACDQQ (2011) have also conducted detailed surveys of more than 200 firms from the

[11] For example, an estimated 25 million cases are pending before the courts in India and it will take more than 300 years to clear the backlog (Bearak 2000).

Small- and Medium Enterprises (SMEs) sector in India, and the results clearly favor the use of alternative mechanisms over the law and legal system. For example, when asked about their preferred actions following defaults, breaches of contract and disputes initiated by their business partners, over 80 percent of surveyed firms say they do not use the legal system at all. Out-of-court channels of dispute resolution play a far more important role for these firms. About 50 percent of the firms surveyed do *not* have a regular legal adviser. When pressed for a reason, 63 percent of respondents who did not have legal advisors claimed they did not need lawyers as they knew all their business partners and could deal with them fairly. Clearly, the formal legal system takes a back seat while reputation, trust and informal personal relationships are the driving factors in screening potential business opportunities. The survey responses further indicate that not only is the law a disfavored means to resolve a breach that has already occurred or a dispute that has already arisen, but it also plays a weak role in dissuading future breaches and disputes. To this end, the survey findings indicate that legal sanctions are far less important than the demands and responsibilities of the networks within which they exist and function. For instance, in the case of default, late payment and a breach of contract, the primary concern is loss of future business opportunities or reputation; the fear of legal consequences (adverse court sentences or jail terms) is the *least* important concern, below even threat to personal safety.

It is worth mentioning how entrepreneurs and investors alleviate and overcome problems associated with government corruption, which is rampant in many emerging economies including India and China. An interesting aspect of corruption is that its damaging effects on economic growth seem to differ significantly across countries. In the case of the provision of government goods and services, corruption occurs when the government cannot raise sufficient revenues to finance the costly provision, and bribes can be regarded as user fees. With multiple officials 'competing' to provide the same good or service (e.g., a license for a new start-up), the user fee is

determined competitively and the pernicious effects of corruption are minimized (Allen and Qian 2009). In addition, entrepreneurs can move from region to region to find the most supportive government official, which in turn motivates officials to lend "helping hands" rather than "grabbing hands." These remedies should be typically available in a large country with diverse regions like India and China.[12]

II.2 Alternative Institutions in Successfully 'Emerged' Economies: Taiwan and South Korea[13]

The limited role played by the law and legal system in the economic growth of China and India has also been found in other prominent East Asian economies. Next we review Taiwan and South Korea. As mentioned earlier, these two economies are among the most successful in the post-WWII era, with their per capita GDP (in PPP terms) now at the same level as traditional industrialized nations such as the UK and France, and their GDP in the top twenty of the world. Both had powerful, autocratic (one-party) governments during the first three decades of their economic rise (post-WWII), and these governments, similar to that of China, actively promoted economic growth. In the corporate sectors, family firms play an important role in both economies.

Taiwan

Both mainland China and Taiwan have had a long history of relying on nonlegal mechanisms to settle disputes. As mentioned above, Taiwan also 'inherited' many of the nonlegal institutions that worked very effectively in mainland China up to 1949, and these institutions have been behind the success of the Taiwanese economy over the past five decades. Also similar to China, small and medium firms (SMEs), usually privately owned, have contributed most to the growth of the economy and employment. In fact, the early development of Taiwan from 1960s to

---

[12] Complementing this view, Xu (2009) describes the importance of China's unique institutional foundation of "regionally decentralized authoritarian system," in which the sub-national governments have considerable autonomous power over regional economic decisions and at the same time remain under the control of the central government. This system alleviates the information problem that regulators face, and creates incentives for sub-national governors through personnel control and regional competition.

[13] We thank helpful comments from Charles Chang, Yencheng Chang and Son-nan Chen on Taiwan and from Namho Kang and Hayong Yun on S. Korea.

1990s was characterized by an export-oriented trade strategy and a market structure dominated by SMEs (e.g., Aw 2001). Since the SMEs are most likely subject to informal dispute resolutions and financing methods mentioned above, this echoes the case of China where the informal sector grows much faster than the formal sector in terms of output and employment.

While judges in Taiwan are considered to be better trained than their counterparts in mainland China, out-of-court settlements of disputes are also common. Mediation committees are often assembled in cities and villages to provide a dispute resolution in manners consistent with local norms and customs (e.g., Huang 1996). Some of these committees and programs are administered by Ministries of Justice and usually supported by the local government. Chen et al. (2010) documents the extensive use of informal or private mediation in labor disputes in Taiwan. The process usually begins with an employee filing an application of mediation under the Labor Dispute Resolution Act (LDRA) to the local government. The LDRA stipulates that upon receiving the application, the local government should form a mediation committee that consists of three people—one appointed by the employee, one by the employer, and the third by the local government. In practice, however, local governments usually organize an informal committee consisting of only one government appointed member; another possibility is that the dispute may be transferred to private mediators. In 2007, out of the 18,994 mediation applications, 38.84% and 48.39% of the cases were conducted through the informal and the private mediation mode, respectively.

Taiwan did not establish its first stock exchange (the Taiwan Stock Exchange) or the securities regulator (the Securities and Futures Commission, under the Ministry of Finance) until the early 1960s. The Securities and Exchange Law was enacted in 1968. Similar to many other Asian economies and mainland China before 1949, many of Taiwan's listed firms are family-controlled, and the ownership structure is concentrated. More than 70% of the listed companies in

Taiwan have a controlling shareholder—holding more than 20% of the voting rights—in 1999, and the comparable number is 20.2% for Japan and 56.8% for Korea (Claessens et al., 2001). Among those firms controlled by a single large shareholder, 48% are family controlled in Taiwan (Claessens et al., 1999). Minority shareholder protection has not been well developed in the law. For example, Article 27 of Taiwan's Company Law actually permits corporate and government shareholders to appoint individuals as directors and supervisors and replace them as they wish. This creates a conflict of interest in that the directors may pursue the interest of the dominant shareholders rather than the best interest of the company (Liu, 2000, 2001).

The prevailing ownership structure in Taiwan, along with weak protection of small shareholders, thus raises concerns for expropriation by large shareholders. However, previous studies have shown that family-controlled firms do not underperform widely-held firms (without a controlling shareholder holding 20% or more of the votes), especially when the level of family control is high (see, e.g., Woidtke, Yeh and Lee 2001, and Chu 2009). High levels of family control mitigate agency problems by aligning the interest of management with that of the owner. Moreover, a tight kin network may provide a valuable and unique competitive advantage to firms (Durand and Vargas, 2003; Sirmon and Hitt, 2003). Local family connections can also work as a substitute for formal financing channels and pull in resources that otherwise would not be accessible to (small) firms (e.g., Peng and Jiang, 2008).

Republic of Korea

Unlike the important contribution of SMEs in Taiwan, Korea's economic growth before the 1997 Asian financial crisis was largely driven by large, vertically integrated, family owned conglomerate groups known as the "*chaebols*," and a strong government. Starting from the early 1960s, when the process of rapid industrialization began, the government has a played a dominant role in Korea's economic development by directing preferential lending to the *chaebol*s to develop

targeted industries such as automobiles and electronics. Bingham et al. (2007) document that the top thirty *chaebol*s controlled 41% of the domestic economy in 1995; the top five *chaebol*s controlled 26.3% of the domestic economy in 1999. *Chaebol*s are closely held and characterized by interlocking-ownership structures and overlapping boards of directors, with an average (founding) family ownership interest of 43% as a result of the cross-shareholdings in the top thirty *chaebol*s. *Chaebol*s also ensure their absolute control rights over the affiliated firms through a web of cross holding structures (e.g., Kim 2007).

It is difficult for small shareholders to take legal actions against the company. For example, during 1993-1997, a minimum five percent ownership is required by law for a shareholder to exercise rights such as inspecting accounting books, though the threshold decreased after the 1997 crisis (Kim 2005). Moreover, institutional investors face restrictions on the size of their ownership stakes and on the voting rights, making it possible for the founding families in *chaebol*s to exert controls without a very large ownership stake. In addition, many institutional investors are either subsidiaries of the *chaebol*s or under heavy influence of the government (e.g. the Korean Pension Fund). They will likely put the controlling owner's interest before that of the minority shareholders.

*Chaebol*s are regarded by some as having higher expropriation risk, and their special connection with the government also raises the question of corruption. They were held responsible after the 1997 financial crisis in part due to high leverage and reckless lending in some firms. As a result, there have been corporate governance reforms aimed specifically at *chaebol*s. However, the *chaebol* structure also has merits, especially in terms of providing valuable support to affiliated firms in addition to providing financing. According to Kim and Nugent (1994), over 70 percent of Korea's SMEs generated revenues from contracting and subcontracting from *chaebol*s in the 1990s. Almost 90% of the SMEs involved in subcontracting generated more than 80 percent of their total revenues from the contracts with *chaebol*s. Korea created a dense network as firms' (especially

SMEs) technology-support institutions during the 1970s and 1980s, SMEs still prefer to turn to private sources including *chaebol*s for technical support.

Similarly to other successful Asian economies, disputes involving corporations and investors are rarely handled by courts and the legal system. Somewhat differently to China and Taiwan, the Korean government plays an important and active role in settling disputes, especially those involving *chaebol*s. The close relationship between the Korean government and *chaebol*s is described as "hierarchical as well as a nexus of implicit contracts" (Kim and Lee 2005). The allocation of preferential credit to business firms that reached government-set export targets is an example of such implicit contracts. The government and *chaebol*s can be regarded as parts of an internal organization, with the government assuming the role of a senior partner of the private enterprises, rather than a regulatory authority (Jones and Sakong 1980). The participation of the government in the resolution of disputes expedites the process so that critical projects of these firms would not be delayed. On the other hand, stated laws and court procedures are not followed during the negotiation process, and the government can threaten with legal actions (such as 'surprising audits' of the chaebol firms) to ensure that the settlement agreement is followed by all the parties.

The Korean and Taiwan experience highlights the importance of family firms and business groups as an effective alternative corporate governance mechanism. First, Burkart et al. (2003) link the degree of separation of ownership and control to different legal environments, and show that *family-run* firms will emerge as the dominant form of ownership structure in countries with weak minority shareholder protections, whereas professionally managed firms are the optimal form in countries with strong protection. Evidence in Claessens et al. (2000, 2002) and ACDQQ (2011) suggests that family firms are a norm in Asian countries, and these firms have performed well. Second, Allen and Gale (1999, 2000) show that, if cooperation among different suppliers of inputs is necessary and all suppliers benefit from the firm doing well, then a good equilibrium with no

external governance is possible, as internal, mutual monitoring can ensure the optimal outcome. Cooperation and mutual monitoring can ensure payments (as long as funds are available) among business partners despite the lack of external monitoring and contract enforcement.

II.3 High Growth Periods of Developed Countries and the Evolution of Law and Markets

We next review a few of the largest and most developed countries with the focus on the importance of law and legal institutions during high (and volatile) growth periods. We begin with Japan and conclude that similar institutions found in other major Asian economies have also played important roles in Japan's transformation. We then review evidence from recent research that shows that during early stages of development, it was informal relationships of trust, rather than the law, that promoted the development of the financial systems in western European countries.

Japan

Before World War I, Japan's financial system was already furnished with modern institutions such as a central bank, commercial banks and the concept of property rights. The *Meiji* government adopted parts of the legal and financial systems from the West as part of the reform. However, these formal institutions were not utilized much in practice and Japan developed sophisticated economic and political systems operating outside the legal system before WWII (e.g., Upham 2002). For example, large, family controlled business groups in Japan, which grew significantly from World War I to 1940, relied mostly on internal financing and relationship based lending from their "organ" banks (nonbank institutions with close ties to the families). After the organ banks experienced massive failures in the crisis of 1927, modern industrial firms switched to the organizational form of joint-stock companies and were able to raise funds from the stock market in the absence of formal mechanisms of investor protection. In fact, Japan had a high degree of ownership dispersion compared with UK and Germany at the beginning of the 20th century. Franks, Mayer and Miyajima (2007) point out that informal arrangements based on trust are the major

reasons to sustain a dispersed ownership. In particular, the equity stakes in the joint stock companies were marketed to outside shareholders by individuals known as "business coordinators," who were typically highly respected businessmen in the local communities. Community members agreed to invest their money in the companies based on their trust in the coordinators, who were also responsible for monitoring the firms in the interests of small and 'outside' shareholders.

The alternative mechanisms are still at work for post-WWII Japan and serve as substitutes for legal enforcement. A good example is the Board of Director's duty of loyalty to the company, which prohibits the directors from taking advantage of their beneficiaries by means of fraudulent or unfair transactions (Clark 1986). In 1950, Japan introduced the rule of the director's duty of loyalty from the US (a key part of the Company Law) as Article 254-3 in its Commercial Code to improve Japanese corporate law and governance. Despite this introduction, however, the article was largely ignored until the late 1980s and long after Japan's high growth period and its emergence as one of the most developed nations in the world. Kanda and Milhaupt (2003) argue that an important reason for the avoidance of the law is that a series of non-legal rules or social norms, based on reputation and relationships, governing the conduct of Japanese firms in the high-growth period was used outside the legal system. Moreover, companies have broader views than listed firms in the US in that serving the interests of other (non-shareholder) stakeholders (e.g., employees, customers and business partners) is an important goal. As a result, market participants and the legal community bypassed unfamiliar, transplanted legal rules (Milhaupt 1996). After WWII, despite further influence of the US, Japan's formal legal system actually shrank during the high economic growth period, and alternative mechanisms, similar to those in other Asian economies, were again the main force in finance and commerce.

United Kingdom

The UK had active stock markets at the start of the 20th century, characterized by a number

of local stock exchanges that specialized in particular industries. Most of the listed companies were small or medium-size and the main purpose of equity issues was to finance acquisitions (using stocks). An interesting fact from Franks, Mayer and Rossi (2006) is that despite almost nonexistent investor protection laws and unregulated stock markets at the beginning of the 20th century, the stock ownership of listed firms was quite dispersed at the time. They conclude that there were effective alternative mechanisms, and, in particular, local trust, that prevented the managers from infringing investor's rights (also see, e.g., Michie, 1987). For example, in the event of acquisition, there was no evidence of controlling shareholders receiving a price premium over that by small shareholders, though no existing laws prevented the large shareholders from doing so. The stock exchanges are located in the same cities and communities where companies are listed and most investors live and work. Because the investors and the companies searching for finance are from the same closely knit communities, reputation is of great value for a company (e.g., for future financing purposes) and its directors; along with local trust these mechanisms ensure 'good' behaviors and substitute for laws and legal enforcement. It was only after the geographical expansions of many firms that the formal rules of corporate governance such as the 1948 Companies Act were in demand and enacted, since the expanded firms no longer depended solely on local finance. Franks, Mayer and Rossi (2006) conclude that the law and legal enforcement introduced in the post-WWII era did not 'cause' a disperse ownership structure in the UK.

Germany

Compared with the UK, Germany had better investor protection laws at the beginning of the 20th century. For example, it included provisions in 1861 giving investors the right to call an extraordinary general meeting provided the investor has at least a 10% voting equity stake. However, there was little further development in the law throughout most of the 20th century, and, in particular, there were no further modifications in investor protection clauses for a considerable

time. The LLSV index of private enforcement remained 0 between 1900 and 1987 for Germany, and was raised to 0.21 as it is today after the new prospectus requirements were introduced. More importantly, it is not clear that the investor protection provisions at the beginning of 20th century were applied in practice. For example, the Second Joint-Stock Modification introduced formal rules to outlaw proxy voting without explicit content in 1884. Nevertheless, the German banks, which accounted for a majority of proxy voting in Germany, generally circumvented this requirement by including the statement of using the votes of deposited shares in their business statements. When investors use the banks as the custodians of their stocks, they effectively give the banks the proxy voting rights. In fact, Franks, Mayer and Wagner (2006) show that in the first half of the 20th century, proxy votes exercised by the bank account for 38.8% of all votes and 89.5% of the votes exercised by the banks are proxy votes. Thus, one can argue that Germany had weak or malfunctioning shareholder protection (in practice) at the beginning of the 20th century. Its financial markets, however, bore resemblance to the UK markets in that firms raised large amounts from stock markets as compared to bank credit.

Hence the interesting question is why small investors are willing to participate in the stock market despite a lack of legal protection. Franks, Mayer and Wagner (2006) point out the importance of large banks which acted as both the promoters of the new equity issues and also custodians of individual stockholdings. Small investors deposit their shares with the bank and trust the banks to do proxy voting on their behalf. While this can create concentrated ownership and lead to a conflict between the interests of the banks and those of the minority investors, the offsetting force is once again reputation and trust of the banks, an important factor from the very beginning of the formation of the banks, which relied heavily on local investors and depositors.

III. Problems with Using the Law as the Basis for Finance and Commerce

In this section we present examples that illustrate potential problems with using the law and legal system as the basis for finance and commerce. The first set of examples focus on the rent seeking behaviors by vested interest groups that can make the legal system a barrier to innovations. We also provide examples to show that the limited capacity of the legislature can also slow down the pace of innovations and business transactions. We focus on examples from developed countries, such as the US, for two reasons. First, there is a commitment to use the law as the basis for finance and commerce in these countries, with legal institutions serving as the ultimate source for resolving disputes and enforcing contracts. When there are fundamental changes in an economy (e.g., the Internet), companies and investors *cannot* implement these changes in all of their transactions and interactions until the law is revised, as they face litigation risk (e.g., copyright protection). Second, if there are significant deficiencies in using the legal system in countries with the most developed institutions, these deficiencies are likely to be magnified in developing countries with poorer formal institutions.

III.1 Rent-seeking by Vested Interest Groups

A cornerstone of Western law and institutions is property rights. A "hot-button" issue in property rights is the protection of intellectual property rights and their role in economic growth, which is also at the center of our comparisons between the two different systems of finance and commerce.[14] We focus on two aspects of intellectual property rights. First, whether the protection of exclusive rights (through patents, copyrights, trade secrets, trademarks, etc.) has a positive impact on the pace of innovations and second, the problems of using the law and legal institutions as the basis for disputes related to intellectual property rights.

In any country with laws on intellectual property rights, the scope of patentable subject matter has traditionally *not* included fundamental scientific discoveries. A frequently mentioned

[14] Due to space limitations we cannot review all the evidence on intellectual property rights. See, e.g., Allen and Qian (2010) for more examples, and the OECD (2004) report and the Bessen and Meurer (2008) book for excellent reviews.

rationale for this omission is that, given the far-reaching impact in many fields of these discoveries, it would be impossible to outline the boundaries of the patent protection. In fact, whether the boundary of a patent can be precisely defined is an important determinant of effective enforcement of the patent law (e.g., Bessen and Meurer 2008). In the US and many other developed countries, once the patent is approved and issued, the primary forum for resolving disputes is the (federal) courts, which have exclusive jurisdiction over disputes involving the infringement of patents and appeals of court decisions.

There is an extensive literature in industrial organization in economics examining the relationship between the protection of intellectual property rights and the pace of innovations during the past three decades, and the research yields mixed findings. In the chemicals and pharmaceuticals industries, stronger and more effective protection has been found to lead to more R&D spending and innovations in developed countries. This positive relation is attributed to the fact that most patents are valuable with clearly defined boundaries. This, in turn, helps keep litigation costs (of alleged infringers) low. However, even in these industries it is unclear whether the most important inventions and discoveries were made under the protection of property rights.

As an example the process of discovering and producing penicillin, widely regarded as one of the most significant discoveries in modern medicine, is illuminating. While believed to have been discovered by Alexander Fleming in 1928, several others had discovered its bacteriostatic effects as early as 1875. The real challenge of the new "wonder drug" was how to produce it in large quantities. This period coincided with World War II, during which penicillin significantly decreased the number of deaths and amputations caused by infected wounds among Allied Forces. Due to the large demand and costs of mass production, the price soared and a large amount was reserved for military use. A team of British and American scientists finally made a breakthrough in the early 1940s allowing rapid production of the drug. Penicillin production was quickly scaled up

and made available in quantities necessary to treat Allied soldiers wounded on D-Day. As production rose, the price dropped from being nearly priceless in 1940, to $20 per dose in July 1943, to $0.55 per dose by 1946. Andrew Moyer, a member of the research team, was granted a patent in the US for a method of mass production of penicillin in May of 1948, after the commercial value of the drug had plummeted. Other researchers and producers of penicillin had applied for patents in other European countries but the applications were turned down, as it was deemed unethical to provide exclusive rights for an invention that can save lives. In fact, the attitude of governments and societies toward using patents and copyrights became increasingly pro-rights holders only after WWII.

Outside the chemical and pharmaceutical industries, prior economic research finds that in many developed countries, there is no positive relation between the protection of intellectual property rights and the pace of innovations. Instead, excessive protection deters competition, which is another important factor in spurring innovations, and small inventors do not benefit from the laws on intellectual property as much as large corporations. In addition, based on changes in patent laws and enforcement regulations, Lerner (2002; 2005), among others, finds only weak or no evidence that *strengthening* patent rights and the enforcement of patent laws spur the pace of innovations across developed countries.

Research in developing countries also generally fails to establish a positive relationship between the protection of intellectual property rights and the pace of innovations. This is in part due to weak enforcement of such rights and the lack of other relevant institutions. China is often singled out as notoriously bad in protecting intellectual property rights, as copying and imitation via reverse engineering is a prevalent strategy across industries. Legal actions by foreign firms have been nearly useless in preventing these activities. Despite efforts by the government to pass new laws and strengthen existing ones, including those on intellectual property rights, in part as a

response to mounting international pressure, it is doubtful that these efforts will have any system-wide impact. First, there is no systematic statement of the law of property or clear definitions of *private* property rights in the constitution. Second, law enforcement is likely to be ineffective due to the intrinsic conflict of interest between fair play in practicing law and the monopoly power of the single ruling party, especially in cases in which government officials or their affiliates are involved (e.g., Clarke et al. 2008). Notably, though, while the protection of intellectual rights in China has been poor, the pace of innovations has been furious due to the pressure of competition.

One of the main problems of the patent system based on the law is that it motivates rent-seeking behaviors by interest groups. An example to illustrate such behavior is that companies, especially large corporations with abundant resources, come up with numerous *nonessential* inventions to pad the one significant (patented) invention or establish a new standard in production (e.g., Dewatripont and Legros 2007). The creation of such a standard can impact the use of many different technologies – in the case of mobile technology, for instance, a production standard on a new handset requires the use of more than a thousand technologies protected by patents. By jamming the patent system with extra patents or standards the patent holders can essentially block or delay innovations by competitors. This is what has led to the FRAND concept – "fair, reasonable and non-discriminatory royalties." Another form of rent-seeking behavior is that patent holders, especially those with more resources, seek the best possible legal venue to maximize the likelihood of winning a lawsuit against patent or copyright infringements. This type of behavior runs against the principal that the legal system within a democracy should be based on fair procedures and should allow equal access to all.

In our next set of examples, we examine recent innovations in communications and knowledge industries based on the Internet revolutions. Some of these inventions are free of charge and are not protected by patents or copyrights, while others do charge and are protected. As

discussed above, when it is difficult to determine whether an invention has broached the boundary of a patent, as is often the case for Internet related innovations, enforcement becomes ineffective and may cause rent-seeking behaviors to escalate. On the knowledge front, SSRN (Social Science Research Network) and JSTOR are great academic inventions that bring new working papers and published articles, in electronic format, to individual researchers worldwide at essentially no marginal cost (based on institutional subscriptions). For the general public, Wikipedia, a multilingual, web-based platform with free content, is quickly becoming the most useful encyclopedia. Written collaboratively by volunteers from around the world, the Wikipedia articles provide links to guide users to related pages with additional information and offer a useful point to begin research on almost any subject. Since its creation in 2001, it has grown rapidly into one of the largest reference websites attracting over 600 million visitors annually by 2008.

While the growth of Wikipedia has met with little resistance from the traditional media companies, it is a totally different situation with Google's equally ambitious "Print and Library Project." Under the "fair use doctrine" of the US Copyright Law, Google's plan has two components, Google Publisher Program, in which a publisher holding copyrights to a book can authorize Google to scan the entire book into Google's search database, and Google Library Project, where some of the largest libraries (Harvard, Oxford and Stanford Universities, University of Michigan, and the New York Public Library) allow Google to scan materials. According to Google, for books/print materials in the public domain (not subject to copyright) from the libraries, Google will display the full text of the book with the search result; for those that are still covered by copyrights, readers can only see a few sentences of the text around the search item; copyright holders can also exclude selected books from Google Print. Ever since the initial idea of the Project floated around, it was met with disdain from publishing companies. The Association of American Publishers, including well-known companies such as Penguin, McGraw-Hill, Pearson Education,

Simon & Schuster and John Wiley & Sons, and the Authors Guild, the nation's largest organization of book authors, filed suits against Google in the second half of 2005.

After several years of painstaking negotiations, Google finally worked out a $125 million legal settlement with groups representing authors and publishers. However, on March 22, 2011, a federal judge in New York rejected the legal settlement (see *New York Times*, 3/22/11). While Judge Denny Chin acknowledges that "the creation of a universal digital library would benefit many," he said it would have granted Google a "*de facto* monopoly" and the right to profit from books without the permission of copyright owners. Regardless of whether Google will gain monopolist status in the new realm of digital library, a project that clearly benefits societies worldwide must be put off indefinitely due to the legal process—first the lawsuits filed by the publishers, followed by the lengthy negotiations and now the new court ruling.

Interestingly, a similar dispute has occurred in China between *Baidu*, which has the largest online search engine in China, and groups representing authors and publishers. Perhaps inspired by Google's efforts, *Baidu* has built its own online library ('*Bai Du Wen Ku*') which contains PDF files of millions of Chinese books, novels, and articles (including online commentaries). Almost all of the files are free for viewing, and for downloading some books and articles there is a small charge using electronic 'points.' Around the same time when the US judge rejected Google's settlement with US publishers, several groups of Chinese authors and publishers released an open letter, in which they accuse *Baidu* of copyright infringement. *Baidu* has since issued an 'open apology' to the writers but settlement has not been reached yet. More importantly, all indications are that the online library will remain open to the public.[15] The comparison between the Google and *Baidu* cases highlights what we view as an important difference in the role of legal system in China and the US. In the US, companies cannot implement innovations until the legal system clears and

---

[15] The website for *Baidu*'s online library is http://wenku.baidu.com/. For more details on the dispute see, e.g., http://edu.sina.com.cn/en/2011-03-25/173260304.shtml.

settles all the disputes with other entities, whereas in China innovations are implemented first and then settlements, often reached without using the legal system, come later.

Another interesting comparison is the Linux operating system, started in 1991 by Linus Torvalds, versus the Windows system, the most prominent operating system released under a proprietary software license by Microsoft. A Unix-like computer operating system, Linux is one of the most prominent examples of free software and open source development.[16] Typically, all underlying source codes can be freely modified, used and redistributed. In terms of market share, it is not surprising to see that Windows dominates the desktop and personal computer markets with about 90 percent of market share, as compared to 1 percent market share by Linux. However, we see a role reversal of their market shares in the segment of 'supercomputers.' According to http://www.top500.org/, the website that tracks the world's fastest supercomputers, as of November 2010 Linux powers more than 80 percent of the world's 500 most powerful supercomputers, and each of the world's fastest 10 computers uses Linux. By contrast, only 5 out of the 500 supercomputers use the Windows system, a market share of 1%. Proponents of free software argue that the key strength of Linux is that it respects what they consider to be the users' essential freedom – to run, study, change, and to redistribute copies with or without changes free of charge.

We end this subsection with a comment on the effectiveness of using lawsuits to protect patents and copyrights. As in the case of online resources, the efforts by vested interest groups seem to be largely ineffective when the general public is engaged in the 'illegal act' at low costs (e.g., Wikipedia), but these efforts become more effective when a single company is leading the implementation of new technologies (e.g., Google's Print Project). The contrast in these cases, however, suggests that using the law as the basis for the protection of intellectual property rights

[16] Nobody registered the name *Linux* till August 1995, when William Della Croce, Jr. applied for a trademark and demanded royalties from Linux distributors. Mr. Torvalds and other affected organizations sued him and the case was settled in 1997. Mr. Torvalds has stated that he trademarked the name to prevent others from using it, but was bound in 2005 by the US trademark law to take active measures to enforce the trademark. As a result, the Linux Mark Institute, holder of the name, had to request a fee be paid for the use of the name and a number of companies have complied.

can induce rent-seeking behavior by the interest groups that will have the most to lose given the new technologies, and their efforts can become significant barriers to changes and innovations.

III.2 Limited Capacity of the Legislature

Another problem of using the law as the basis for finance and commerce is the limited capacity and fixed costs associated with revising the law as required by changes in the economic environment. In a democracy, the legislature (and electorate) must approve any revisions in the law before companies and investors can implement new technologies or innovations without concerns of breaking the law. However, politicians have limited time and effort that can be devoted to any given area of the law, and hence there is a legislature capacity and a fixed cost in revising the law. The following example illustrates that such limited capacity and fixed costs can single handedly slow down the pace of financial and business transactions in practice.

Figure 2 compares payments systems in major developed economies. At the start of the twenty-first century the US had a nineteenth century payments system, relying mostly on checks and the mail, and significantly lagging behind other developed nations. While countries like Germany, the Netherlands, Sweden and Switzerland had almost completely abandoned checks (and rely instead on electronic payments systems), about half of all the payments in the US were still in the form of paper checks. Under the old Uniform Commercial Code, the only legally acceptable proof of payment was cancelled checks, or checks processed by both the deposited and paying financial institutions. Hence, checks had to be physically transported from where they were deposited to a central operations center, then to the clearer and then back to the banks they were drawn on. This check-and-clearing process significantly delayed business transactions as compared to electronic methods.

How costly was this backward payment system? Using information from Humphrey et al. (1996) and Bolt et al. (2005), we can conduct a simple back-of-the-envelope calculation. From

cross-country comparisons and analysis, these researchers suggest that there are savings of about 1-2 percent of GDP when a country moves away from paper checks (e.g., the US) and towards electronic-based methods. The US 2001 GDP was $10,400 billion, which indicates that the magnitude of savings from reforming the payment system to be $104 billion to $208 billion per year. With a 5 percent discount rate (roughly the risk-free rate in the US at the time), the discounted present value of this savings (assuming a ten-year growing annuity of 2 percent per year to control for inflation) is between $1 trillion to $2 trillion; in other words, the magnitude of the savings is comparable with the total cost of the most recent Iraqi war, and (using the midpoint of $1.5 trillion) it can finance both the bank bailout (TARP, $700 billion) and the fiscal stimulus plans ($787 billion) in the US resulted from the worst financial and economic crisis since the Great Depression.

Despite years of calls for changes from the banks and businesses, the US Congress appeared not in a hurry to solve this seemingly simple yet costly problem. Without the approval of the legislature, banks cannot expedite the payment process due to the fear of lawsuits. Then, the tragic events of September 11, 2001 occurred and served as a catalyst for change. After the terrorist attack all commercial flights in the US were grounded for several days, completely halting the check clearing process. After the flights resumed, the call for change in the payments system finally resonated with Congress. The Check Clearing for the 21st Century Act ("Check 21 Act") was signed in October 2003 and became effective one year later. The Check 21 Act allows electronic images of both sides of paper checks to be a "legally equivalent" substitute for the original checks, and these "substitute checks" can be exchanged among financial institutions including banks, clearing houses and the Federal Reserve Bank (see, e.g., Board of Governors of the Federal Reserve System (2008) for more details). Therefore, the clearing process is no longer dependent on the mail and transportation system.

To summarize, in this section we presented examples to highlight two potential problems of

relying on the law as the basis for finance and commerce: rent-seeking behaviors by vested interest groups and limited capacity of the legislature in approving changes to the law. We also argue that these problems are likely to be worsened in developing countries until they can develop sound legal and other related institutions.

IV. Comparing Legal Institutions and Alternative Mechanisms

The above examples motivate our comparisons of two different sets of systems. The first system, employed by developed and democratic countries such as the US, commits to use the law as the basis for finance and commerce and legal institutions as the ultimate source for resolving disputes and enforcing contracts; further, changes to the law must be approved by the legislature and electorate. In the second system, symbolized by countries such as China, there is no systematic definition of private property rights or property law, and, in practice, nonlegal mechanisms are the norm for conducting business; the process of change in finance and commerce is often bottom up rather than top down. We make these classifications to better differentiate these two systems and facilitate the comparisons, but they may not be mutually exclusive when we look at a particular country. In fact, as the literature on legal pluralism (see, e.g., Merry (1988) for a review) shows, in many countries these two systems can coexist but do not necessarily work to improve each other.

In what follows we compare the advantages and disadvantages of conducting finance and commerce in these two systems. We then discuss conditions under which one of the two systems is superior. Finally, we provide discussions on policy implications based on our analysis.

IV.1 Advantages and Disadvantages of Legal and Alternative Institutions

There are well-known advantages of using the law and legal system as the basis for finance and commerce. The legal system of a democratic society allows equal and full access by all and promises fairness in trials and settlements. Backed by the government and legislature, the legal

system also has the ultimate authority in its decisions on any and all disputes. The legal system is endowed with powerful enforcement mechanisms, including criminal penalties, such as imprisonment, as well as civil laws and financial penalties to affect people's behaviors. These enforcement mechanisms and penalties provide strong incentives for individuals and organizations to follow the resolutions endorsed by the legal system, which in turn provides long-term stability in the economy. The legal process, including resolution and enforcement, can be anonymous (e.g., details of a settlement of a dispute may not be disclosed) or transparent (the entire procedure of a high-profile trial may be covered by media). By using the entire legal system, the marginal costs for managing an additional case (e.g., enforcing similar types of contracts or resolving disputes) can be reduced, and this improves overall efficiency.

However, there are also disadvantages in using the law and legal institutions. First, recent research on political economy factors suggests that rent-seeking behaviors by vested interest groups can turn legal institutions into barriers to changes. For example, Rajan and Zingales (2003a; 2003b) suggest that development of a formal financial system may trigger political economy costs, causing a disconnection between the level of financial market activity and economic development. Similarly, Acemoglu and Johnson (2005) find that while "contracting institutions," or laws protecting contracts between individual parties, do not affect long-term growth, "property rights institutions," or laws and regulations restraining powerful elites and the government, do affect economic growth.[17] We expect these problems to be much more severe in developing countries, where the costs of building good institutions can be enormous. We argue that one way to solve this problem is not to use the law as the basis for finance and commerce but instead to use alternative mechanisms, as the experience in China and India documented earlier shows.

[17] Other papers examine different aspects of the political economy and their effects on finance and growth. For example, Pagano and Volpin (2005) shows that strict labor regulation induces the manager to use long-term wage contracts to defend against hostile but possibly efficient takeovers. Roe (2006, 2007) proposes that the observed divergent ownership structures and the differing depths of securities markets across countries are largely determined by the different political goals of the nations, rather than the legal origins.

Second, in democracies there can be a lengthy political process before significant changes can be approved (by the majority of the electorate or legislature), and the people in charge of approving or disapproving changes (e.g., politicians and judges) may lack expertise in the business transactions under scrutiny and have limited capacity (time and effort) to study the proposed changes. The process of passing the Check 21 Act epitomizes this capacity issue. In addition, as demonstrated in the examples in the previous section, interest groups with more resources may receive more protection than individuals and organizations with fewer resources. This asymmetry in protection induces more rent-seeking behaviors and further deters innovations.

Unlike the legislature, which has monopoly power and authority in revising the law, one of the main advantages for alternative mechanisms, along with the bottom up process for changes, is that such mechanisms are more likely to foster competition among different mediation/resolution agencies/organizations. Competition can ensure that the most efficient mechanism prevails – for example, only experts are involved in the rule-changing process. Competition can also limit rent-seeking behaviors by one or more groups. As a result, alternative mechanisms as described can be much faster in adopting new rules to deal with changes in finance commerce since these changes do not require the permission from the legislature or electorate.

One of the main disadvantages of the alternative mechanisms is the lack of enforcement power and authority. Without the backing of the government and judicial system, alternative mechanisms can only rely on reputation along with economic and financial incentives (e.g., avoiding future losses due to sanctions by other members of the network or coalition) and mutual monitoring to enforce contractual agreements. These methods may be insufficient to ensure good behavior if future losses are not substantial relative to the gains that can be made today, or if these losses can be recuperated by entering other lines of business or networks. Another negative for alternative mechanisms is that by design they exist among a network and thus may be inaccessible

to outsiders; partial access by outsiders may come with the price of biased outcomes in dispute resolution favoring insiders. In addition, frequent changes adopted by a network (or networks) create instability in the entire economy and hence weak long-term incentives.[18]

These advantages and disadvantages lead to the tradeoffs of the two systems in different economic environments. In *static* environments with infrequent and predictable changes (i.e., mature and slow-growing economies and industries), the advantages of the legal mechanisms dominate the disadvantages. First, the strong incentives provided by the enforcement mechanisms of the legal system imply that efficient systems can be designed that do not rely solely on positive monetary incentives. Second, the fixed costs of using the legal system when changes occur can be negated by the infrequent revisions of the law; the legislature and the judicial system can appoint experts to be involved with the process of changing the law and grant them the authority in decision making. The combination of effective enforcement and infrequent changes also implies that there is stability in the system, which in turn creates strong long-term incentives for economic agents to play by the (universal) rule.

In *dynamic* environments with frequent and unforeseen shocks (i.e., new industries and/or emerging, fast-growing economies such as China and India), however, the disadvantages of legal mechanisms are magnified and can outweigh their advantages. The lengthy approval process by the legislature and electorate of any change to the law, along with the limited capacity and possible lack of expertise by the judges and politicians, means that the legal system is slow in reacting to changes. Moreover, a legal system captured by interest groups can oppose changes, and with its monopoly power it can become a barrier to competition and innovations. On the other hand, alternative mechanisms can adapt to changes much more quickly, and this process does not require the approval of the legislature. Weak enforcement power and long-term incentives of the alternative

[18] See Dixit (2004) for an excellent review of the advantages and disadvantages of the alternative mechanisms.

mechanisms can be significantly strengthened by effective reputation mechanisms as long as there are long-term profits to be made and shared by participating individuals and organizations.

The interaction between legal and alternative mechanisms is another reason why alternative mechanisms can promote economic growth and improve social welfare, even in static environments (and slow growing, developed economies). Since most of the laws are adopted from best practices, having a viable system of alternatives can thus improve the efficiency of legal institutions, especially in dynamic environments. Competition among formal and alternative mechanisms can also ensure that the best mechanism will be eventually adopted in the entire economy, and it is one of the keys to sustaining long-term economic growth. A viable alternative system is especially important in environments where special interest groups can easily capture the legal system. Finally, a fair and functional legal system can also improve the effectiveness of alternative mechanisms by adopting the best rules and enforcing the changes in the entire economy and by instilling stability amid frequent changes.

IV.2 Conditions for Developing Legal and Alternative Institutions

One reason that we advocate for alternative institutions is that the costs for developing formal institutions can be prohibitively high in emerging economies and the process can take years.[19] By contrast, the costs for developing alternative institutions are much lower as many such institutions have been in existence (often in certain regions and/or corporate sectors) for generations as a result of historical ties and social norms. But this implies that there can be a set of conditions required for a viable system of alternative mechanisms to exist and work. A good example is Africa. Clearly past efforts in building formal institutions by different governments and organizations have not worked well in promoting financial development and economic growth. It appears that alternative institutions have not worked well either, at least not as successfully as those

[19] Consistent with this view, Djankov, McLiesh and Shleifer (2007) find that, despite apparent significant economic benefits from reform, there is very little time variation of creditor rights over the past 25 years around the globe.

in emerging Asian countries such as China and India.

What is missing in Africa? Prior literature on development economics suggests that constant internal and external conflicts, including those related to and caused by ethnic fractionalization, have plagued many African countries over the past several centuries (e.g., Easterly and Levine, 1997). As described earlier, the experience in China during the first half of the 20th century (prior to 1949) suggests that political stability is not necessary to foster effective alternative institutions. However, what are common in China and India are long-lasting traditions and strong social and business ties and trust among families and in local communities, and these have contributed to the workings of alternative institutions—for example, dispute resolution mechanisms based on local notables and traditions. Hence, the lack of similar long-standing traditions and trust in conflict-stricken areas can be one reason why alternative institutions have not taken off in Africa.

The second factor, as documented in Allen, Carletti, Cull, Qian and Senbet (ACCQS, 2011), is related to population density. ACCQS compare determinants that are associated with banking sector development in Africa vs. those in other developing countries. They find that while factors such as the natural resource 'curse' and macroeconomic policies matter as much in Africa as in other emerging countries, population density matters a lot more for Africa's financial development. In most sub-Saharan African countries population density is much lower than that in China and India, and road coverage (including railroads) is poor. It is reasonable to argue that frequent interactions among firms, households, and investors are a necessary condition for business transactions and a viable system of alternative institutions. Their results thus imply that this is lacking in Africa and the costs for building roads are high. Given the associated high costs of developing viable banking sectors outside metropolitan areas—not surprisingly, bank branch penetration in Africa is much lower than that in China, technology advances, such as mobile banking, could be a promising way to facilitate both formal and alternative institutions in Africa.

We close this section by briefly talking about how to build formal institutions in emerging economies. While alternative institutions have been highly effective in the success of Hybrid Sector in China, these institutions have not been effective for the Listed Sector and the development of financial markets. There is abundant evidence (e.g., AQQ, 2008) showing that the financial markets in China are not efficient and have been plagued by insider trading and self-dealing transactions, similar to many other emerging economies (DLLS 2008). Financial markets have not played a central role during the past three decades of China's economic transition, but their role is likely to become much more important going forward, and so building legal and other formal institutions is a big part of the efforts. The same argument can be made for many other emerging economies.

There are two ways in which markets are regulated in practice: First, market forces and self-regulation, and second, government regulation. As described earlier, a good example of the first type of regulation is the capital markets in the UK in the 19th and early 20th century. The role of government regulation and intervention was minimal, yet the markets did extremely well and London became the financial capital of the world. As discussed earlier, one reason that the nonlegal mechanisms were effective is that many firms and exchanges are (initially) developed within tightly knitted communities, so that reputation and trust became one of the most important factors during business transactions and interactions among all the stakeholders of the firms.

In contrast, one of the central goals for developing the Chinese stock market in the early 1990s was to (partially) privatize firms in the State Sector. Hence from the very beginning, large and inefficient SOEs have had much easier access to the markets than the most efficient firms from the Hybrid Sector. In addition, the government plays the dual roles of regulator and large shareholder of most of the listed firms—through holdings of large amounts of nontradable shares. In fact, two thirds of the total number of shares in China prior to 2005 are held by the government and related entities (AQQZ 2010). These led to bad incentives and many loopholes.

So what should China and other emerging economies do to improve regulations? Recent research has shown that this involves changing the entire regulatory environment and reforming many (if not all) formal institutions in order for any one law or regulation to be effective. For example, Price et al. (2011) find that despite the efforts of regulators to push for the best practice of corporate governance in Mexico, including extensive disclosure of different aspects of governance (e.g., structure of the board, internal control and executive compensation) similar to that of the Sarbanes-Oxley Act in the US, there is no evidence that the overall disclosure quality or the operating performance has improved as a result of the governance reform. The authors conclude that this is because the broad institutional environment in Mexico remains weak, so that the effect of any legal reform is limited at best. A particularly important element is the concentrated ownership structure that significantly curtails outside monitoring and makes it difficult to implement the US-style shareholder-based governance mechanisms. In this regard, the recent share reform in China, which has converted and floated most of the nontradable shares controlled by the government into tradable shares, can have wide-ranging impact on other governance reforms in the Listed Sector.

While undertaking system-wide changes is a considerable challenge for emerging economies, major steps that are cost-effective can be taken to complete the entire task. Based on comprehensive studies of securities laws and enforcement institutions across the globe, LLS (2008) and DLLS (2008) conclude that information disclosure by the largest shareholders—and in particular, their ownership stakes in related parties, and allowing disinterested (smaller) shareholders to participate in the decision-making process are effective measures to restrain self-dealing transactions and promote stock market development; and these measures are (relatively) inexpensive to implement as compared to measures such as liability rules and litigation process. Li et al. (2011) compare how regulators tackle different types of widespread tunneling activities in China. They find that laws and regulations that are more clearly defined and easier to enforce, as

measured by lower costs in verifying legal vs. illegal transactions, will be more effective, especially in countries with weak institutions. In addition, laws and regulations are better enforced with well trained professionals with the correct incentives (e.g., Gleaser, Johnson and Shleifer, 2001).

V. Empirical Predictions and Policy Implications

In this section we provide testable predictions based on our theory and contrast them with existing literature on law, institutions, finance and growth. We also discuss policy implications regarding how to develop institutions in emerging economies. While there are extensive strands of literature studying law and legal institutions and their relationships to finance and growth, much less has been conducted in understanding alternative institutions in developed and developing economies and their role in supporting finance and growth. The main difficulty is the availability of data on alternative institutions and how they are utilized by firms, investors and other economic agents and entities. Data issues are particularly pronounced for small and medium firms that are not publicly listed but rely on these institutions much more than large and listed companies. Therefore, research methods such as household and firm surveys become much more important and in some cases these are perhaps the only way to get around the problem of lack of publicly available data. The other obstacle is identification strategies to separate the effects of alternative institutions from those of legal and formal institutions on financial and economic development, as they can be correlated in certain industries, countries and regions.

V.1 Empirical Predictions on Finance, Governance, and Economic Growth

One of the key predictions of the law and finance literature is that differences in the law and legal institutions have first order effects on financial development and economic growth. Since the common-law system provides the strongest protection to small investors and given the dominance of the US financial markets, a central implication of this line of work is that emerging markets

should exert efforts in developing legal institutions similar to the common-law system. By contrast, we argue that law and legal institutions do not matter much for fast-growing economies and during early stages of economic growth, so comparisons across developing countries will find that differences in these formal institutions cannot explain much of the differences in financial development (broadly defined) and economic growth. Our theory demonstrates that in these cases it is the viable alternative institutions that matter for financial development and economic growth. Our work on China, India and Africa suggests that this is the case. On the other hand, the difference in law will matter more for more developed countries, and there is plenty of empirical evidence (by LLSV and others) to support this at the country, industry and firm level.

Our theory also offers micro-level predictions on the different impact of legal and alternative institutions across corporate sectors (in both developed and developing countries). Large manufacturing firms with abundant tangible assets have easy access to bank finance and these (and listed) firms have easy access to legal institutions. On the other end of the corporate spectrum, unlisted firms and small and medium firms, especially those with a large amount of intangible assets, have much more difficulty in accessing formal financial and legal institutions, but they can grow much faster and contribute more to overall economic growth (e.g., Beck, Demirgüç-Kunt and Levine, 2005), as long as viable alternative mechanisms are at play.

A related issue is the pace of innovations and business transactions and the strength of legal and alternative institutions. As discussed earlier, competition among firms is an important driver for innovations, and excessive protection of property rights along with rent-seeking behaviors can deter innovations. We have also shown that nonlegal mechanisms can substitute for legal mechanisms and do better in enforcing contracts and resolving disputes. Therefore, as long as there are viable alternative institutions, contract disputes should not delay the pace of innovations and business transactions even without a functioning legal system. The difference in how legal and

alternative institutions adapt to changes also implies that the pace of innovations is faster in economies, especially fast-growing economies, with effective alternative institutions than that in economies with a dominant but rigid legal system. By contrast, innovations may be stymied if the legal system is captured by special interest groups.

Our theory also provides distinct predictions as compared to the literature on finance and growth. Most of the literature regards the development of financial markets and banks as the cornerstone for developing the financial system, which in turn promotes economic growth by providing external financing to firms. The literature also considers alternative finance as "picking up the slack" of bank and market finance and is therefore more costly for firms (e.g., Demirgüç-Kunt and Maksimovic (1998); Beck et al. (2005); Ayyagari et al. (2010)). Therefore, firms with access to market and bank finance are expected to grow faster than those without such access. By contrast, our theory argues that nonmarket, nonbank finance, backed by alternative mechanisms, can be superior to bank and market finance especially in fast-growing developing economies. ACDQQ (2011) provide evidence from India that is consistent with this prediction. An important type of alternative financing channel is trade credits. Recent research from both developed and developing countries has shown that while the initial fixed costs of trade credits can be high among firms without a long-term relationship, once a network of firms, customers and investors is forged, the average costs over an extended period can drop quickly so that the costs can be lower than those based on arms-length relationships including market and bank finance (e.g., Giannetti, Burkart, and Elligensen (2007); Giannetti and Yu (2007); Kim and Shin (2007)).

Another type of alternative finance is provided by various forms of private credit agencies, and they provide an important source of seed capital for firms in the Hybrid Sector in China (AQQ 2005). Anecdotal evidence from Tsai (2006) illustrates that these informal institutions take on many forms in China, from shareholding cooperative enterprises run by professional money

brokers, lenders and middlemen, to credit associations operated by a group of entrepreneurs (raising money from group members and from outsiders to fund firms), from pawnshops to underground private money houses. Further empirical studies based on surveys can examine the importance of these institutions and the exact mechanisms behind their business operations and risk management.[20] Our theory also indicates that excessive regulation of these institutions may be counter-productive in emerging markets as many start-up firms do not have access to formal financial institutions.

Finally, our theory also sheds some light on the comparison of shareholder-based corporate governance system among listed firms in the US, UK and other common-law countries, vs. stakeholder-based governance used in many other countries. The effectiveness of shareholder-based system depends crucially on the law and legal institutions, while a governance system that includes non-shareholder stakeholders, such as employees, business partners, customers and local communities, can be more effective, especially in environments of weak laws and formal legal institutions. Hence, the prediction is that in most emerging countries firms and corporate sectors with strong stakeholder-based governance mechanisms are more likely to succeed.

Allen and Gale (2000) build on Aoki's seminal work on Japanese firms (see Aoki,1990, for a survey of this literature). They develop an overlapping generations model of employees where firms hire both young and old workers. All the employees and managers of the firm must reach consensus and cooperate for the firm to run efficiently. The necessity of this consensus and cooperation can provide incentives for the provision of effort. There is mutual monitoring that forms the foundation of ensuring neither group shirks. By choosing strategies that attract young employees, the senior managers ensure that the long-run viability of the firms is maintained and all employees and shareholders do well. They show that a broader focus on stakeholders leads to a

[20] There is a strand of literature studying microfinance institutions and their importance in underdeveloped countries. See Morduch 1999 and Haley and Morduch 2002 for a review of existing microfinance programs, theoretical prediction and its empirical impact.

Pareto improvement in the allocation of resources. The mutual monitoring mechanism inherent in this approach does not require legal mechanisms and is therefore different from the standard maximization of shareholder value approach. This is based on the fiduciary duty of shareholders to managers and the protection of minority shareholders through legal mechanisms.[21]

V.2 Policy Implications

Our ultimate goal is to help design the optimal combination of legal and alternative institutions that best suit a country's needs, and it is not our intention to downplay the importance of the role of the law and legal system in finance and commerce. To this end we have concluded that legal mechanisms are an important part of developed economies' institutions, providing stability and strong long-term incentives. This conclusion is based on the premise that there are infrequent shocks to the economy that cause fundamental changes in ways that business is conducted, and that the legal system allows full access by all and promises fair resolution of disputes and enforces the rules uniformly. However, the assumptions making legal institutions the optimal system in developed countries are unlikely to hold in many emerging economies. A fast-growing economy is characterized by frequent shocks to the fundamentals of the economy, which make repeated changes to the practice of finance and commerce a requirement, not a choice. Given that it typically takes years to build a well-functioning legal system and other formal institutions, the fixed costs of using the legal system can be quite high in a dynamic economy, even if the system provides fairness and expertise when dealing with changes in the law. A much more severe problem with the legal system, perhaps, is the political economy factor. It would be much easier for interest groups to capture the legal system in a country with underdeveloped institutions than in a country with developed institutions. As a result, an economy relying on law and legal institutions as the sole

[21] Also see Acharya, Myers and Rajan (2011) for a model of internal governance where self-serving actions of top management are limited by the potential reaction of subordinates. This type of internal governance can mitigate agency problems and ensure that firms have substantial value even in the absence of little or no external governance.

basis for commerce may find that such reliance is, in fact, a barrier to change and innovation.

Therefore, we argue that alternative mechanisms play a much more prominent role in emerging economies and can actually be superior to legal mechanisms in supporting business transactions in certain industries or entire economies. Our main policy implication is that in emerging economies, alternative dispute resolution and contract enforcement mechanisms should be encouraged and developed alongside the development of legal and other formal institutions. In particular, measures that help foster competition and reduce entry barriers are welfare enhancing. The coexistence of and competition between alternative and legal mechanisms can also exert positive impact on the development of legal institutions, so that they are less likely to be captured by interest groups and become more efficient in adapting to changes.[22] Whether and how a transition from a system dominated by alternative mechanisms to one using the law and legal institutions as the focal point depends on the country's economic history and growth potential, as well as the workings of many other social and cultural factors that help build the social norms in the society and business communities.

VI. Concluding Remarks

Our starting premise is that the spectacular economic growth in Asian economies such as China, South Korea and Taiwan over the past five decades cannot be explained by most of the existing research on law, institutions, finance, and growth. In these economies the legal system is underdeveloped and of limited use in finance and commerce. During these economies' fast-growing periods, many firms do not rely on financial markets or banks to raise funds, and the government is autocratic and corrupt. A review of economic history also shows that similar

[22] Qian and Weingast (1997) argue that government decentralization since 1979 has helped foster competition among local officials and preserve market incentives in China. Allen and Qian (2008) argue that competition among officials from different regions curtails the negative impact of corruption on economic growth in China.

alternative institutions are important forces during the fast-growing periods of traditional industrialized nations such as the UK, Japan, and Germany.

In our view these economic success stories contain important lessons that are not well understood by economists. While using the law in finance and commerce has become a widely accepted idea, especially in the West, it is based on the history of institutional development in the same region. We have argued that it can be optimal in static environments with infrequent changes. In dynamic environments such as China and India today or Taiwan and Korea twenty years ago it may be better to use other mechanisms that do not rely on the law because this reduces the inefficiencies associated with political economy factors. Moreover, in a dynamic environment alternative institutions can adapt and change much more quickly than when the law is used, as this process does not require persuading the legislature and the electorate to revise the law. Therefore, designing economic institutions that minimize political economy problems by not relying on the legal system is one of the keys to fast economic growth. We conclude that in fast-growing economies and during early stages of economic growth, efficient alternative institutions are the main driver for finance, commerce and growth. In both static and dynamic environments, viable alternative institutions and competition among different types of institutions remain keys to ensuring that the most efficient mechanism prevails and sustaining long-term growth.

References

1. Acemoglu, D., and Johnson, S. (2005) “Unbundling Institutions,” Journal of Political Economy 113, 949-995.
2. Acharya, V., S. Myers and R. Rajan (2011) “The Internal Governance of Firms,” Journal of Finance 66, 689-720.
3. Aharony, J, Lee, J. and Wong T.J., (2000). “Financial Packaging of IPO Firms in China,” Journal of Accounting Research 38, 103-126.
4. Allen, F., Capie, F., Fohlin, C., Miyajima, H., Sylla, R., Wood, G, and Yafeh,Y. (2010). “How important historically were financial systems for growth in the U.K, U.S., Germany and Japan?” University of Pennsylvania Financial institutions center working paper #10-27
5. Allen, F., Chakrabarti, R., De, S., Qian, J., and Qian, M. (2008) “Financing Firms in India,” working paper, Philadelphia: Wharton Financial Institutions Center.
6. Allen, F., and Gale, D,.(1999) “Corporate governance and competition”, working paper, Philadelphia: Wharton Financial Institutions Center 99-28.
7. Allen, F., and D. Gale, 2000, Comparing Financial Systems, Cambridge, MA: MIT Press.
8. Allen, F. and Qian, J. (2008) “Corruption and Competition,” working paper, Boston: Boston College.
9. Allen, F. and Qian, J. (2010) “Comparing Legal and Alternative Institutions in Finance and Commerce,” Ch. 6. in *Global Perspectives of Rule of Law*, edited by J. Heckman and R. Nelson, Routledge.
10. Allen, F., Qian, J., and Qian, M. (2005) “Law, Finance, and Economic Growth in China,” Journal of Financial Economics, 77 (1): 57-116.
11. Allen, F., Qian, J., and Qian, M. (2008) “China’s Financial System: Past, Present and Future,” in L. Brandt and T. Rawski (eds) China’s Great Economic Transformation, Cambridge: Cambridge University Press.
12. Allen, F., Qian, J., and Zhang, C., and Zhao, M. (2010) “China’s Financial System: Opportunities and Challenges,” forthcoming in NBER book Capitalizing China, edited by R. Morck and J. Fan.
13. Allen, W., and Shen, H. (2010), “Assessing China's Top-Down Securities Markets,” NBER Working Paper No. 16713.
14. Aoki, M., 1990,"Toward an Economic Model of the Japanese Firm," Journal of Economic Literature, 28, 1-27.
15. Aw, B. (2001) “Productivity Dynamics of Small and Medium Enterprises in Taiwan (China)”, The International Bank for Reconstruction and Development/The World Bank. Stock No. 37188.
16. Ayyagari, M., Demirgüç-Kunt, A., and Maksimovic, V., (2010) “Formal versus Informal Finance: Evidence from China.” Review of Financial Studies23 (8): 3048-3097.
17. Bank for International Settlements (2008) “Statistics on Payment and Settlement Systems in Selected Countries: Figures for 2006.” Online: http://www.bis.org/publ/cpss82.pdf (accessed 23 November 2008).
18. Bearak, B. (2000) “In India, the Wheels of Justice Hardly Move,” New York Times, World (1 June).
19. Beck, T., Demirguc-Kunt, A., and Levine, R., (2005). "Bank Concentration and Fragility: Impact and Mechanics," NBER Working Papers 11500
20. -- (1996) “Merchant Law in a Merchant Court: Rethinking the Code's Search for Immanent Business Norms,” University of Pennsylvania Law Review, Vol. 144, No. 5: 1765-1821.
21. Bernstein, L. (1992) “Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry,” Journal of Legal Studies, 21: 115-157.
22. Bessen, J. and Meurer, M.J. (2008) Patent failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk, Princeton: Princeton Univ. Press.
23. Bingham L., Lee S.W., and Chang W.K (2007), “ Participatory Governance in South Korea: Legal

Infrastructure, Economic Development, and Dispute Resolution "Global Business & Development Law Journal 19: 375-399

24. Board of Governors of the Federal Reserve System (2008) "94th Annual Report 2007," Washington, D.C.: The Federal Reserve Board.
25. Bolt, W., Humphrey, D., and Uittenbogaard, R. (2005) "The Effects of Transaction Pricing on the Adoption of Electronic Payments: A Cross-country Comparison," International Journal of Central Banking 4, 89-123.
26. Brandt, L. and Rawski, T. (2008) China's Great Economic Transformation, Cambridge: Cambridge University Press.
27. Burkart, M., Panunz, F., and Shleifer, A. (2003) "Family firms," The Journal of Finance 58, 2167–2202.
28. Chen,K., Huang,k., and Lin, C. (2010), "An Empirical Investigation of Settlement and Litigation—The Case of Taiwanese Labor Disputes", Journal of Empirical Legal Studies, Volume 7, Issue 4: 786–810.
29. China, Government of (1904) "Company Law."
30. China (People's Republic), Government of (effective June 1, 2007) "Enterprise Bankruptcy Law," (official Chinese version) available online from the central government's website: http://www.gov.cn/ziliao/flfg/2006-08/28/content_371296.htm.
31. Cheung, S. (1973) "The Fable of the Bees: An Economic Investigation," Journal of Law and Economics 16, 11-33.
32. Choi, D, Michell P. and Palihawadana, D, (2008), "Exploring the components of success for the Korean chaebols", Journal of Business & Industrial Marketing 23/5: 311–322
33. Chu, W., (2009), "Family ownership and firm performance: Influence of family management, family control, and firm size", Asia Pac Journal of Management.
34. Clarke, D., Murrell, P., and Whiting, S. (2008) "The Role of Law in China's Economic Development," in L. Brandt and T. Rawski (eds) China's Great Economic Transformation: Cambridge University Press.
35. Clark, Robert C. (1986), "Corporate Law" 141., Aspen Publishers, Inc.
36. Claessens, S, (2001) "Ownership and Control Structures of East Asian Corporations: Facts and Relationships to Performance and Financing," (paper prepared for The Third Asian Roundtable On Corporate Governance of the OECD, April 4-6, 2001, Singapore)
37. Claessens S., Djankov S., Lang L.,(1999), "Who Controls East Asian Corporations?", The World bank Policy Research Working Paper 2054
38. Claessens, S., Djankov, S., Fan, J., Lang, L. (2000), "Expropriation of Minority Shareholders in East Asia", CEI Working Paper Series, No. 2000-4
39. Claessens, S., Fan,J., and Lang,L., (2002) "The Benefits and Costs of Group Affiliation: Evidence from East Asia" WIDER Discussion Paper No. 2002/47.
40. Coase, R., (1960) "The Problem of Social Cost," Journal of Law and Economics 3, 1-44.
41. Demirguc-Kunt, A., and Maksimovic, V. (1998) "Law, Finance, and Firm Growth", Journal of Finance, 2107-2137.
42. Dewatripont, M. and Legros, P. (2007) "Essential Patents, FRAND Royalties and Technological Standards," working paper, Brussels: European Center for Advanced Research in Economics and Statistics.
43. Dixit, A. (2004) Lawlessness and Economics, Princeton: Princeton University Press.
44. Djankov, S. McLiesh,C., Shleifer, A. (2007) "Private credit in 129 countries," Journal of Financial Economics 84, 299‑329.
45. Djankov, S. and Murrell, P. (2002) "Enterprise Restructuring in Transition: A Quantitative Survey," Journal of Economic Literature, 40: 739-792.

46. Djankov, S, La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (2002) "The Regulation of Entry", Quarterly Journal of Economics, Vol. CXVII, Issue 1:1-37

47. Djankov, S, La Porta, R., Lopez-de-Silanes, F. and Shleifer, A.(2008). "The law and economics of self-dealing," Journal of Financial Economics 88, 430-465.

48. Dollar, D. and Wei, S., (2007) "Das (Wasted) Kapital: Firm Ownership and Investment Efficiency in China," IMF working paper,WP/07/9.

49. Durand, R. and Vargas, V. (2003) "Ownership, organization, and private firms' efficient use of resources", Strategic Management Journal Volume 24, Issue 7, : 667–675,

50. Eger,T., Faure,M., and Zhang N (2007)., "*Economics Analysis of Law in China*", Edited by Eger,T., Faure,M., and Zhang N., Edward Elgar Publishing Limited

51. Esterly, W., and Levine,R. (1997) "Africa's Growth Tragedy: Policies and Ethnic Divisions", Quarterly Journal of Economics, Vol. 112, Issue 4, November 1997:1203-1250

52. Franks,J., and Mayer,C., (1998)"Bank control, takeovers and corporate governance in Germany", Journal of Banking & Finance 22, 1385-1403

53. Franks,J., Mayer,C., and Miyajima,H., (2007) "Evolution of Ownership: the curious case of Japan." Mimeo, Waseda University, available at: http://www.hbs.edu/units/bgie/pdf/miyajima.pdf

54. Franks,J., and Maye,C., and Rossi, S. (2006) "Ownership: Evolution and Regulation" , ECGI - Finance Working Paper No. 09/2003

55. Franks,J., and Maye,C. and Wagner,H.,(2006) "The origins of the German Corporation - Finance, Ownership and Control" Review of Finance Volume10, Issue 4 : 537-585

56. Giannetti, Mariassunta, Burkart, Mike, and Tore Elligensen, (2007). "What You Sell is What you Lend? Explaining Trade Credits Contracts," forthcoming, *Review of Financial Studies*

57. ____, and Xiaoyun Yu, (2007). "Connections and Information Acquisition in Capital Allocation," ECGI - Finance Working Paper No. 153/2007.

58. Giroud,X. and Mueller,H., (2011) Corporate Governance, Product MarketCompetition, and Equity Prices THE JOURNAL OF FINANCE • VOL. LXVI, NO. 2:563-600:

59. Glaeser, E., Johnson, S., Shleifer, A., 2001. "Coase vs. the Coasians," Quarterly Journal of Economics 116, 853-899.

60. Goetzmann,W., Ukhov, A., and Zhu,N., (2001) "China and the World Financial Markets 1870-1930: Modern Lessons From Historical Globalization" Yale ICF Working Paper No. 00-62

61. Greif, A. (1989) "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders," Journal of Economic History, 49: 857-882.

62. -- (1993) "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition," American Economic Review, 83: 525-548.

63. Haley B. and Morduch, J., 2002 "Analysis of the Effects of Microfinance on Poverty Reduction", NYU Wagner Working Paper No. 1014

64. Howson N and Khanna V, (2010) "The Development of Modern Corporate Governance in China and India", CHINA, INDIA AND THE INTERNATIONAL ECONOMIC ORDER, M. Sornarajah and J. Wang, eds., Cambridge University Press,

65. Huang, Shir-Shing, (1996) " The Reconciliation System of the Republic of China," in Eds.Fred E. Jandt and Paul B. Pedersen, Constructive Conflict Management: Asia-Pacific Cases, Part one

66. Humphrey, D., Pulley, L., and Vesala, J. (1996) "Cash, Paper, and Electronic Payments: A Cross-country Analysis," Journal of Money, Credit, and Banking, 28: 914-939.

67. International Monetary Fund (IMF) (2008) "World Economic Outlook Database." Online. Available: http://www.imf.org/external/pubs/ft/weo/2008/01/weodata/index.aspx/ (accessed 23 November 2008).

68. Jayaratne, J, and Strahan, P., (1996). 3 The Finance+Growth Nexus: Evidence from Bank Branch Deregulation.4 Quarterly Journal of Economics 101, 639+670.

69. Jones, L. P. and Sakong, Il, (1980), " Government, Business and Entrepreneurship in Economic Development: The Korean Case", Harvard University Press, Cambridge, MA

70. Kanda, H., and Milhaupt, C.,(2003) "Re-examining legal transplants: the directors' Fiduciary duty in Japanese corporate law," The American Journal of Comparative Law 51, 887-901.

71. Khan, Z. (2005) *The Democratization of Invention: Patents and Copyrights in American Economic Development, 1790-1920,* Cambridge: Cambridge University Press.

72. Kim, E. (2005), "The Impact of Family Ownership and Capital Structures on Productivity Performance of Korean Manufacturing Firms: Corporate Governance and the Chaebol Problem," HGCYWorking Paper Series No. 05-02

73. Kim, J. and Lee,C. (2005), "The Political Economy of Government, Financial System, and the Chaebols before and after the 1997 Financial Crisis in Korea", unpublished, http://www2.hawaii.edu/~lchung/Finance%20and%20Development%20in%20Korea.pdf

74. Kim J (2000) "Recent Amendments to the Korean Commercial Code and their Effects on International Competition", university of Pennsylvania Journal of International Economic Law, 21,:273-330

75. Kim, L., and Nugent, B, (1994), " The Republic of Koreas Small and Medium-Size Enterprises and Their Support Systems", World bank POLICY Research Working Paper 1404

76. Kim, S, and Shin, Hyun Song (2007). "Industrial Structure and Corporate Finance," working paper, Princeton University.

77. Kim,W. (2007). "Shareholder Activism: Corporate Governance Reform in Korea - By Han-Kyun Rho" Corporate Governance: An International Review, Blackwell Publishing, vol. 15(6),: 1480-1481

78. King, R., and Levine, Ross.,(1993) "Finance and Growth: Schumpeter Might Be Right", The Quarterly Journal of Economics, Volume108, Issue 3: 717-37

79. Kirby, W. (1995) "China Unincorporated: Company Law and Business Enterprise in Twentieth-Century China," Journal of Asian Studies, 54: 43-63.

80. Kirby, W. (2011) 3 The People's Republic of China at 60", Publisher: Harvard University Press.

81. Kondo, J. (2007) "Self-Regulation and Enforcement: Evidence from Investor-Broker Disputes at NASD," working paper, Boston: MIT.

82. La Porta, R., Lopez-De-Silanes, F., Shleifer, A. (2008) "The Economics Consequences of Legal Origins", Journal of Economic Literature, 46:2, 285+332

83. La Porta, R., Lopez-De-Silanes, F., Pop-Eleches, C., Shleifer, A., (2004) "Judicial Checks and Balances", Journal of Political Economy 112, 445-470

84. La Porta, R., Lopez-De-Silanes, F., Shleifer, A., Vishny, R. (1997) "Legal Determinants of External Finance", The Journal of Finance. Vol LII, NO.3, 1131-1159

85. La Porta, R., Lopez-De-Silanes, F., Shleifer, A., Vishny, R., (1998) "Law and Finance", Jounal of Political Economy, vol.106, no.6 :1113-1155

86. Lee, C. (1992), "The government, Financial System, and Large Private Enterprises in the Economic Development of South Korea," World Development 20 (2): 187-97

87. Lee, T.S., Woidtke, T. , Yeh,Y. and (2001) "Family Control and Corporate Governance: Evidence from Taiwan",International Review of Finance, Volume : 2 (2001) Issue 1&2:21-48

88. Lee, T. V. (1993) “Risky Business: Courts, Culture, and the Marketplace,” University of Miami Law Review, 47: 1335-1414.

89. Lerner, J. (2002) “150 Years of Patent Protection,” American Economic Review Papers and Proceedings, 92: 221-225.

90. Lerner, J. (2005) “150 Years of Patent Office Practice,” American Law and Economics Review, 7: 112-143.

91. Levine,R., (1997) “Financial development and economic growth: views and agenda”, Journal of Economic Literature; Jun 1997; 35, 2:688-726

92. Levine, R. and Zervos, S.,(1996) "Stock Market Development and Long-Run Growth," World Bank Economic Review, Oxford University Press, vol. 10(2), pages 323-39

93. Li, S. (2001) “Bankruptcy Law in China: Lessons of the Past Twelve Years,” Harvard Asia Quarterly, Volume V, No. 1, Winter 2001.

94. Li, K., Lu,L., and Qian, J., (2011) “Enforceability and the Effectiveness of Laws and Regulations”, working paper, Boston College.

95. Liu, L. (2000) "Simulating Securities Class Actions: The Case in Taiwan", Corporate Governance International, Vol. 3, Issue 4: 4-12

96. --, (2001)"A Perspective on Corporate Governance in Taiwan," Asian Business Law Review, No. 31, p. 22

97. Liu, Qiao, and Siu, A., (2007) “Institutions, Financial Development, and Corporate Investment: Evidence from an Implied Return on Capital in China,” working paper, University of Hong Kong. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=965631

98. Lu, S. and Yao, Y. (2008) “The Effectiveness of Law, Financial Development, and Economic Growth in an Economy of Financial Repression: Evidence from China”, World Development, Forthcoming ,Simon School Working Paper No. FR 09-07

99. Mayer, C. (2008) “Trust in Financial Markets,” European Financial Management”, 14: 617-32.

100. Macaulay, S. (1963) “Non-Contractual Relations in Business: A preliminary Study”, American Sociological Review, Vol. 28, No.1:1-23

101. McKinnon, Ronald I. (1973). “Money and Capital in Economic Development”, Washington, DC: Brookings Institution.

102. McMillan, J., (1995). China’s nonconformist reform. In Edward P. (Ed.) Economic Transition in Eastern Europe and Russia: Realities of Reform. Stanford: Hoover Institution Press, pp.419-433.

103. McMillan, J., (1997). Markets in transition. In Kreps, D., Wallis K. (Ed.) Advances in Economics and Econometrics 2, Cambridge: Cambridge University Press, pp.210-239.

104. Milhaupt, C., (1996) “A relational theory of Japanese Corporate Governance: Contract, Culture, and the Rule of Law” Harvard International Law Journal, Volume: 37, Pages: 3-64

105. Morduch, J. (1999). “The microfinance promise.” Journal of Economic Literature 37, 1569.1614.

106. Nakabayashi, M., and Okazaki,T., (2010) “The role of the courts in Economics development: the case of Prewar Japan”, PRIMCED Discussion Paper Series, No. 4.

107. North, D., and R. Thomas, (1973) The Rise of the Western World: A New Economic History, Cambridge: Cambridge University Press.

108. Organization for Economic Co-operation and Development, Directorate for Financial and Enterprise Affairs of the Competition Committee (2005) “Policy Roundtables: Intellectual Property Rights 2004.” Online. Available: http://www.oecd.org/dataoecd/61/48/34306055.pdf (accessed 23 November 2008).

109. Pagano Marco, and Volpin Paolo, (2005), “Managers, workers, and corporate Control”, Journal of Finance 60, 841-868

110. Park, C. "Institutional Investors in Corporate Governance of Korea", The Asian Business Lawyer, Vol. 5, Available: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1783122

111. Peng M., Jiang Y., (2008), "Institutions behind family ownership and control in large firms", working papers https://www.utdallas.edu/~mxp059000/pdf/PengJiangJMS0808final.pdf.

112. Petersen, M., and Rajan, R., (1995)"The Effect of Credit Market Competition on Lending Relationships," The Quarterly Journal of Economics, Vol. 110, No. 2: 407-443

113. Pirrong, S.(1995) "The Efficient Scope of Private Transactions-Cost-Reducing Institutions: The Successes and Failures of Commodity Exchanges", The Journal of Legal Studies, Vol. 24, No. 1: 229-255

114. Qian, Y. and Weingast, B. (1997) "Federalism as a Commitment to Preserving Market Incentives," Journal of Economic Perspectives, 11: 83-92.

115. Rajan, R. and Zingales, L.(1998) "Financial Dependence and Growth" The American Economic Review, Vol. 88, No. 3: 559-586

116. Rajan, R. and Zingales, L. (2003a) "The Great Reversals: The Politics of Financial Development in the Twentieth Century," Journal of Financial Economics, 69: 5-50.

117. -- (2003b) Saving Capitalism from Capitalists: Unleashing the Power of Financial Markets to Create Wealth and Spread Opportunity, New York: Random House.

118. Ravallion, M. and Chen, S. (2004) "China's (Uneven) Progress Against Poverty," World Bank Policy Research Working Paper 3408, Washington, D.C.: World Bank.

119. Roe, Mark J. (2006)"Legal Origin and Modern Stock Markets," 120 Harvard Law Review 460 (article review)

120. -- (2007) "Juries and the Political Economy of Legal Origin," 35 Journal of Comparative Economics 294

121. Stulz, A., and Williamson, R. (2003) "Culture, openness, and finance" Journal of Financial Economics 70: 313⁺349

122. Shanghai Stock Exchange, (2008) "Zhongguo Gongsi Zhili Baogao: Shangshi Gongsi Toumingdu yu Xinxi Pilu (2008 PRC Corporate Governance Report: Transparency of Listed Companies and Information Disclosure)", available at: http://ishare.iask.sina.com.cn/f/6224599.html?retcode=0

123. Sirmon, D. G. and Hitt, M. A., (2003) "Managing resources: Linking unique resources, management, and wealth creation in family firms", Entrepreneurship: Theory & Practice, Vol. 27, No. 4,: 339-358

124. Tsai, K. (2006), "Adaptive Informal Institutions and Endogenous Institutional Change in China," World Politics 59: 116-141

125. Upham, F. (2002) "Mythmaking in the Rule of Law Orthodoxy," working paper, The Democracy and Rule of Law Project, Washington, D.C.: Carnegie Endowment for International Peace.

126. United States, Government of (2003) "Check Clearing for the 21st Century Act," Washington, D.C.

127. Williamson, O., (1979) "Transaction Cost Economics: The Governance of Contractual Relations," Journal of Law and Economics 22, 233–61.

128. Xu, C., (2009), " The Institutional Foundations of China's Reforms and Development",CEPR Discussion Paper No. DP7654, Journal of Economic Literature, forthcoming

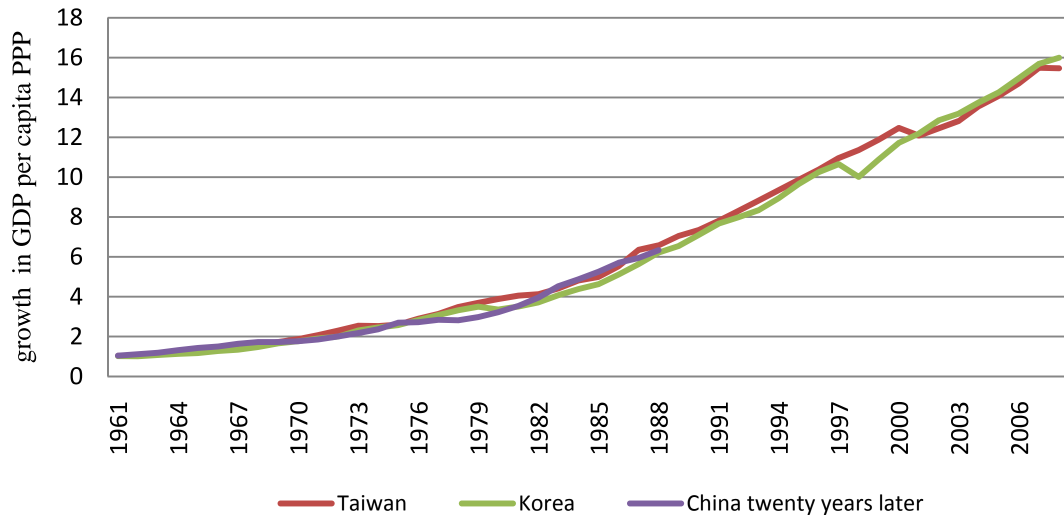
129. Zhang, Q., (1998) "Distribution of social capital and resource by network", in Social Cultural Psychology in China, Beijing, China social press.

130. Zheng, S., K. Storesletten, and F. Zilibotti, 2011. "Growing like China," American Economic Review 101, 196-233.

Table 1 The Largest 25 Economies in the World: GDP and Growth

	GDP in 2010 (simple exchange rates)		GDP in 2010 (PPP)		GDP growth: 1990-2010* (constant prices)		GDP per capita in 2010 (PPP)		Per capita GDP growth 1990-2010* (Constant Prices)	
Rank	Country /Region	US$ Billion	Country /Region	Int'l $ billion	Country /Region	Annual growth	Country /Region	Int'l $ unit	Country /Region	Annual growth
1	United States	14,658	United States	14,256	China	10.5%	United States	47,284	China	9.6%
2	China	5,878	China	8,765	Vietnam	7.4%	Netherlands	40,765	Vietnam	5.9%
3	Japan	5,459	Japan	4,159	India	6.5%	Australia	39,699	India	4.7%
4	Germany	3,316	India	3,526	Angola	6.1%	Canada	39,057	S. Korea	4.6%
5	France	2,583	Germany	2,806	Sudan	5.9%	Belgium	36,100	Taiwan	4.3%
6	U.K.	2,247	Russia	2,139	Malaysia	5.8%	Germany	36,033	Poland	3.8%
7	Brazil	2,090	U.K.	2,110	Bangladesh	5.4%	Taiwan	35,227	Thailand	3.7%
8	Italy	2,055	Brazil	2,108	Nigeria	5.3%	U.K.	34,920	Chile	3.7%
9	Canada	1,574	France	2,013	S. Korea	5.3%	France	34,077	Bangladesh	3.5%
10	India	1,538	Italy	1,740	Chile	5.1%	Japan	33,805	Malaysia	3.5%
11	Russia	1,465	Mexico	1,466	Taiwan	5.0%	S. Korea	29,836	Peru	3.2%
12	Spain	1,410	S. Korea	1,364	Peru	4.8%	Spain	29,742	Indonesia	3.2%
13	Australia	1,236	Spain	1,361	Egypt	4.6%	Israel	29,531	Argentina	3.1%
14	Mexico	1,039	Canada	1,281	Syria	4.6%	Italy	29,392	Egypt	2.5%
15	S. Korea	1,007	Indonesia	962	Indonesia	4.6%	Greece	28,434	Iran	2.4%
16	Netherlands	783	Turkey	880	Thailand	4.4%	Czech	24,869	Turkey	2.2%
17	Turkey	742	Australia	851	Pakistan	4.3%	Saudi Arabia	23,825	Pakistan	2.0%
18	Indonesia	707	Taiwan	828	Argentina	4.3%	Portugal	23,223	Australia	2.0%
19	Poland	469	Iran	736	Iran	4.0%	Poland	18,936	Columbia	1.9%
20	Belgium	466	Poland	689	Philippines	3.7%	Hungary	18,738	Syria	1.9%
21	Saudi Arabia	444	Netherlands	659	Poland	3.8%	Argentina	15,854	Israel	1.9%
22	Taiwan	431	Argentina	594	Turkey	3.7%	Russia	15,837	Greece	1.9%
23	Austria	377	Saudi Arabia	583	Colombia	3.4%	Chile	15,002	Philippines	1.7%
24	Argentina	370	Thailand	539	Australia	3.3%	Malaysia	14,670	Romania	1.7%
25	South Africa	357	South Africa	504	Brazil	3.1%	Mexico	14,430	Netherlands	1.7%

Source: IMF World Economic Outlook Database April 2011
Notes: Countries with population less than 10 million, GDP less than US$ 50 billion in 2010, or less than 15 years of GDP observations are excluded from the rankings.



Base year is 1960 for Taiwan and Korea , and 1980 for China

Figure 1 Per Capita GDP (in PPP terms) Growth in China, Taiwan and S. Korea

This figure compares growth in *per capita* GDP (in PPP terms; inflation adjusted) in Taiwan and Korea during 1960-2006 and China during the period of 1980-2006 (so that the first year for China corresponds to growth between 1980 and 1981). Data source is the website of A. Maddison (http://www.ggdc.net/MADDISON/oriindex.htm).

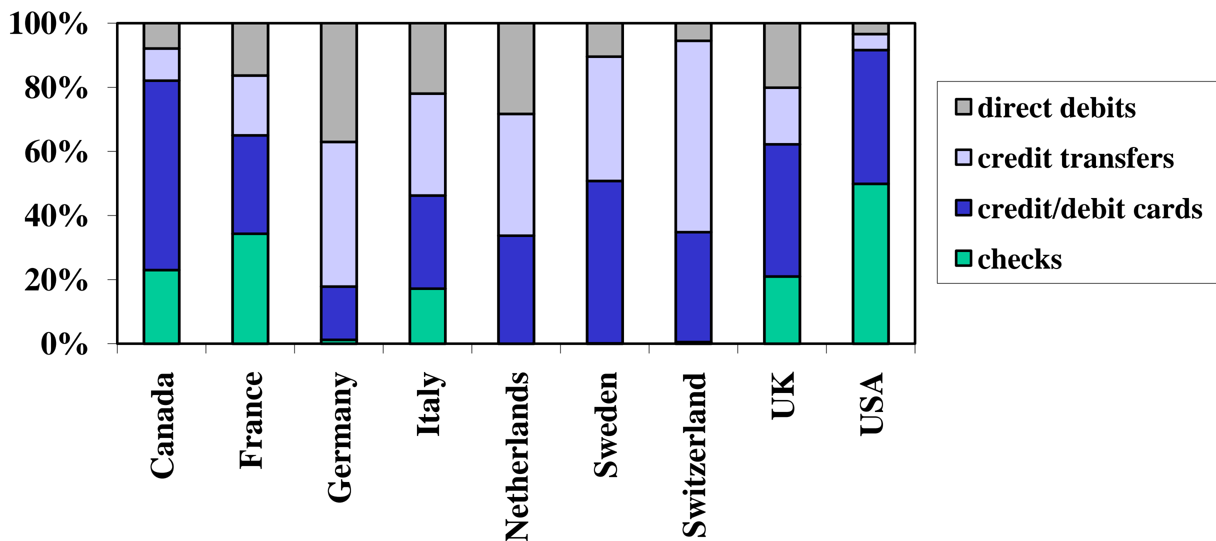


Figure 2 Comparing Payments Systems in Developed Countries

Source: Bank for International Settlements, "Statistics on Payment and Settlement Systems in Selected Countries," March 2006, www.bis.org/publ.