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Law and the Poverty of Nations

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Solomon's Knot

How law can end the poverty of nations.

by

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Chapter 1

The Double Trust Dilemma in Development

A grand master asks to be paid for a chess tournament by placing one penny on the first square of a chess board, two pennies on the second square, four on the third, etc. Using only the white squares, the initial penny would double in value thirty-one times, leaving $21.5 million on the last white square. Growth compounds faster than the mind can grasp. Compounded over a century, 2% annual growth increases wealth more than 7 times, 5% annual growth rate increases wealth more than 130 times, and 10% annual growth increases wealth almost 14,000 times.

From the perspective of two centuries, the richest and poorest countries have diverged like the two rims of the Grand Canyon. The gap has opened because the richest countries grew richer, not because the poorer countries grew poorer. One scholar estimated income per capita for 56 countries in 1820.[1] He found that the richest countries in the sample had income per capita of approximately $1,800, and the poorest countries had approximately $400, for a ratio of 4:1. Instead of 1820, we repeated the same exercise for 2003 and found the richest countries had income per capita of approximately $25,000 and the poorest countries had approximately $500, for a ratio of 50:1. Such is the difference between roughly 2% and .1% annual growth over two centuries. Most poor countries today are somewhat richer relative to their past and much poorer relative to the rich countries of the contemporary world.

The question of whether growth is faster in rich or poor nations will determine whether living standards in the world converge or diverge. If poor nations grow faster than rich nations, the gap between them will close surprisingly quickly. Lifting so many Asians out of poverty in the late 20th Century, especially by rapid growth in China and India after 1980, is one of history's remarkable accomplishments. Conversely, if rich nations grow faster than poor nations, the gap between them will widen surprisingly

[1] Cite Maddison… He used 1990 dollars as the base.

quickly. Income per person declined in sub-Saharan Africa by roughly 20% between 1970 and 1990, which is one of history's depressing failures.

In the modern world, nations are poor because their economies fail to grow. Compared to sustained growth, other sources of wealth are insignificant. Our explanation of national poverty, consequently, begins with an explanation of economic growth. The most important process of economic growth is innovation, which can take the form of a faster computer program in Silicon Valley, an improved assembly line in Sichuan, or a new market in Italy for leather from Swaziland. Innovations in technology, organization, and markets sustain economic growth.[2]

Regardless of its form, innovation confronts the same economic problem – the separation of ideas from capital. When someone discovers a better way to make something or something better to make, developing the new idea requires capital. To combine new ideas and capital, the innovator must trust the financier with her idea, and the financier must trust the discoverer with his capital. We call the problem of uniting capital and ideas the *double trust dilemma of innovation*. Countries that solve the double trust dilemma grow, and countries that fail to solve it stagnate. An ancient motif on this book's cover depicts two interlinking rings called "Solomon's Knot." Like the two rings, King Solomon of the Bible united two separate kingdoms into a single nation. Similarly, ideas and capital must unite to develop innovations. This book tells the story of how law unites innovative ideas and capital.

Separation of Ideas and Capital

New ideas and capital repel each other like tee shirts and tuxedos. An example illustrates the problem: An economist who worked at a Boston investment bank received a letter that read: "I know how your bank can make $10 million. If you give me $1 million, I will tell you." The letter captures concisely the problem of financing

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2 We distinguish innovations into technology, organization, and markets. Joseph Schumpeter distinguished a new good, a new method of production, a new organization, and a new market. Since technological innovations yield new goods and methods, his categories resemble ours. However, he adds a fifth type: new sources of raw materials. We omit his fifth type because, unlike ideas, resources are exhaustible. In general, our theory of innovation draws heavily on Schumpeter, especially his idea of entrepreneurs creatively disrupting equilibria. See <u>The Theory of Economic Development</u> (1934).

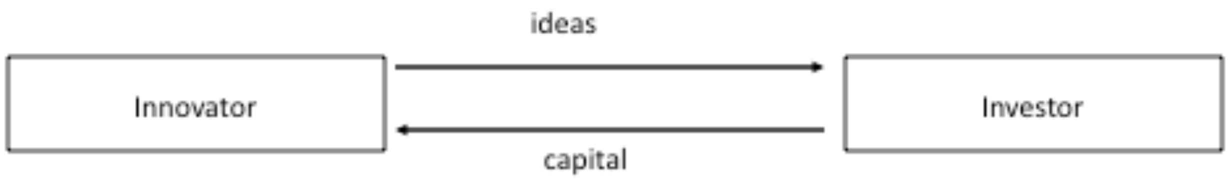
innovation: The bank does not want to pay for information without first determining its worth, and the innovator fears to disclose information to the bank without first getting paid.

To give another real-life example, a Berkeley mathematician named Richard Niles invented bibliographic software called EndNote that many professors use on their computers. In the early stage of development, he hoped and feared to receive a call from Microsoft. If Microsoft called, it would ask for an explanation of EndNote. Then it might buy his company and make him rich, or develop its own version of his program and bankrupt him. Niles eventually got a call from Microsoft, which he answered with trembling, but Microsoft was merely trying to sell him software. Later Niles got his rich reward when a large publisher, Thompson, bought EndNote.

In general, a person cannot evaluate an idea until after its disclosure to him, and after its disclosure he has little reason to pay for it.[3] Economists have explored the problems created by this characteristic of ideas.[4] To combine ideas and capital, the innovator must trust the investor not to steal his idea, and the investor must trust the innovator not to steal his capital. This is the "double-trust dilemma of innovation," as depicted in Figure 1.1. We will describe some pretty good solutions – the dilemma has no perfect solution.

[3] Economist's call this fact "Arrow's paradox of information." See the next footnote.
[4] A central insight of the economics of information is that one party to a transaction often knows more than the other, and they face a problem of authenticating the disclosure. Thus the seller may know that a good is high quality but proving this fact to the buyer can be problematic. For an early exploration of this problem of asymmetric information, see Arrow, Kenneth J. (1972) The Value of and Demand for Information, in C. B. McGuire and R. Radner (eds.), Decision and Organization, New York: North-Holland, Chapter 6.

Figure 1.1. Double Trust Dilemma of Innovation



Consider some ways to establish trust between competitors. To secure peace between two rival kings in the past, each one gave a valuable hostage to the other. Thus in the 5th century, King Geiserich of the Vandals gave his son as hostage to King Theoderich of the Visigoths, who reciprocated by giving his daughter as hostage.[5] Hostage exchange works best when each side values cooperation more than its hostage. For example, King Geiserich presumably valued getting his own son back alive more than he valued killing the daughter of King Theoderich, and vice versa for King Theoderich, so each one had reason to keep the peace.

Modern business transactions take a similar approach. To illustrate, when a buyer in Argentina contracts to purchase machine tools from a seller in Germany, the buyer fears that the seller will keep the money without delivering the machines, and the

[5] The son and daughter were to marry if peace were preserved. Alas, Theoderich allegedly plotted against Geiserich, so Theoderich's daughter was mutilated and sent back to her father.

seller fears that the buyer will keep the machines without paying the money. Contract law and banking institutions offer a solution to this problem: The buyer deposits the purchase price at an international bank ("letter of credit"), and the bank releases the money to the seller on presentation of documents proving that the seller delivered the goods to the designated place. The system works because the Argentine buyer values the machine tools more than their purchase price, the German buyer values the purchase price more than the machine tools, and each one can get what he wants only by doing what the contract says.

Like the exchange of hostages between King Theoderich and King Geiserich, or international trade the German seller and the Argentine buyer, developing an innovation involves reciprocal risks between the innovator and financier. To develop an innovation, the innovator must explain it to the financier and the financier must finance its development. The innovator risks losing his secrets, and the financier risks losing her investments. In effect, the financier's money and the innovator's ideas are a double bond to guarantee their cooperation, like the exchange of hostages between King Theoderich and King Geiserich. The two interlocking rings in Solomon's Knot on the book's cover stand for the bond between innovator and financier.

Solving the double trust dilemma of innovation requires structuring payoffs so that the innovator and financier value cooperation more than defection. The financier must expect to gain more by cooperating than stealing the innovator's secrets, and the innovator must expect to gain more by cooperating than by appropriating the financier's investment. The double bond is effective as long as each side believes that collaborating to develop the innovation will produce more value than any alternative use of the secrets and the money.

The phrase "double trust dilemma of innovation" is original to this book, but the underlying idea draws from a rich economics literature. For example, researchers have explored how venture capitalists and the founders of a startup company overcome their mutual distrust.[6] Contemporary research on finance builds on an earlier literature addressing this question: How can an investor, who puts his money under the control of a manager, write a contract so that the manager profits most when the investor profits most? (This single-trust dilemma is called the "principal-agent problem."[7]) Besides innovation, other circumstances also require two parties to cooperate in which each one takes a risk. Later chapters of this book discuss other double trust problems besides innovation, notably structured finance and political reform.

An Innovation's Life-Cycle in Silicon Valley

To explain double bonding in business innovation, we first describe the life cycle of an innovation. An innovator has information that other people lack, like the secret recipe for Coca Cola. Developing the innovation requires a costly investment, which is very risky. If it succeeds, the innovation yields exceptional profits for a time. Profits, however, attract competitors who try to learn what the innovator knows. Thus Coca-Cola attracted competitors like Pepsi who learned to make similar drinks. As competitors come to understand what the innovator knows, the innovator's private information becomes public. It is available to everyone, like formulas in a chemistry book. As an innovation becomes public, the innovator loses its competitive advantage and its profits return to the normal level. When an innovation ages, three things generally decrease: privacy, risk, and profits.

This story suggests distinguishing three stages in an innovation's life cycle. First, someone has a new idea and obtains capital to develop it. The innovator may form a new firm or work inside an established firm. At the first stage, only a few people in the innovator's inner circle understand the innovation. In the first stage, the innovation's economic value has not been established. The innovator often has to persuade the

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[6] For example, the existence of an active stock market is part of the solution. See Bernard Black and Ronald Gilson, "Does Venture Capital Require an Active Stock Market?," , 11 Journal of Applied Corporate Finance 36 – 48 (2005). For more on this point, see Chapter 6.

[7] This is a single trust problem because the principle's asset is at risk, but the agent does not risk anything. A good introduction to this vast literature is Kenneth J. Arrow, "The Economics of Agency: An Overview," in Principals and Agents: The Structure of Business, ed. John W. Pratt and Richard J. Zeckhauser, 1985.

investor of its value. First-stage investors take the greatest risk of failure and earn the highest profits from success.

Second, the innovator develops the innovation sufficiently to prove its value in the market. When the innovation succeeds economically, the innovator's organization enjoys exceptional profits and it expands faster than its competitors. Although profits are exceptional, second-stage investors take less risk and earn lower profits than first-stage investors.

Third, competitors observe the innovator's success and try to learn what the innovator knows. As competitors emulate the innovator, the innovator's profits fall and its growth slows. Economic evolution emulates the most fit through profit detection, whereas biological evolution eliminates the unfit through natural selection. In the end, competitors assimilate the innovation, and the innovator's profits and risk return to an ordinary level.

In the life-cycle's second stage, successful innovation causes monopoly. Some theorists think the opposite -- monopoly causes innovation. Thus Joseph Schumpeter reasoned that innovations come especially from insecure monopolists. Insecurity motivates change and monopoly cushions profits sufficiently to look to the future, build laboratories, conduct research, and try out ideas. In contrast, competitive firms cannot look to the future and secure monopolists cannot bother to innovate.[8] This theory supported the view in the 1980s, now discredited, that Japan's large firms would lead the world in innovation.[9]

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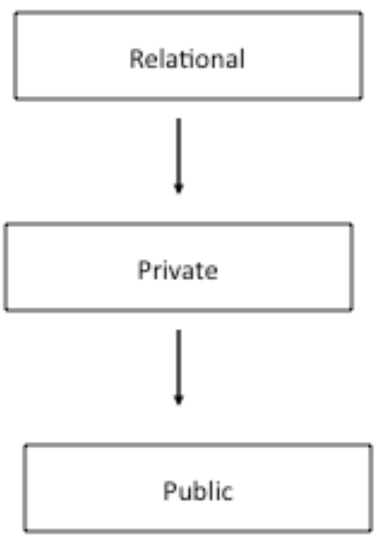
[8] Joseph Schumpeter, The Theory of Economic Development, 1934. Schumpeter's theory recalls an experiment by Harry Harlow involving a monkey, two boxes, a stick, and a banana. The monkey could stack one box on top of the other, climb up, and use the stick to knock down a banana tied to the ceiling. Like an insecure monopolist, a hungry animal would solve it. Like a secure monopolist, a satiated monkey would not bother to try. Like a competitor, a very hungry monkey lacked the patience to solve it – he often threw the box at the banana. Harry Harlow, "Incentive size, food deprivation, and food preference," J Comp Physiol Psychol (1953).

[9] Japan historically shielded its large firms from domestic competition, which gave them monopoly profits to invest in innovations that would drive foreign sales. The remarkable development of venture finance suggests that small firms in places like Silicon Valley can solve the double trust problem of innovation, without bringing innovation inside the laboratories of large, hierarchical firms.

Three Stages of Finance in Silicon Valley

The three stages in an innovation's life cycle correspond to three phases of finance in Silicon Valley, as depicted in Figure 1.2. According to a popular quip, initial funding for startup firms comes from "the 3 Fs": family, friends, and fools. Family and friends have confidence in the innovator, even though they cannot evaluate the innovation's market value. Personal relationships motivate these investors, so we refer to the first stage as *relational finance*. A few fools may invest who think that they can evaluate an innovation without understanding it. (Later we explain why government officials are the biggest fools.)

Figure 1.2. Finance in Silicon Valley



Most innovators have too few personal relationships with wealthy people to finance an innovation's full development, so they must eventually turn to strangers. The second stage of funding comes from "venture capitalists" who are not family, friends, or fools. Unlike relational finance, venture capital is a form of *private finance*. Finance is private because it comes from a small group of experts at evaluating innovations in an early stage of development.

Founders and venture capitalists have good reasons for distrusting each other. The creative people who found a company often manage it badly. When the founders prove to be bad managers, the venture capitalists must take the company away from them and put its resources under the command of good managers. In these circumstances, the venture capitalist must seize the firm to increase its profitability. However, venture capitalists may also seize the firm to avoid sharing profits with the founders. Venture capitalists may gain from removing the firm' founders even when the founders are good managers. The initials "v.c." stands for "venture capitalists" and also "vulture capitalists."

Conversely, Silicon Valley innovators sometimes expropriate the investments of their financiers. To illustrate, John P. Rogers convinced some prominent California investors to give him $340 million in venture capital for a high-tech startup named Pay By Touch, which sought to "transform how America pays its bills" by using "biometric authentication technology" (e.g. fingerprints). In 2008 the company was bankrupt and investors contend in lawsuits that Rogers burned through $8 million per month without producing anything of value.[10]

Given the grounds for mutual distrust, how do innovators and venture capitalists solve the double trust dilemma? The founders often commit to performance goals in exchange for financing from venture capitalists. If the founders fail to meet the stated goals, they lose their investment and their jobs. Specifically, the venture capitalists are preferred shareholders and the founders are common shareholders. Thus the financing contract may say that preferred shareholders can demand repayment of their investment after three years, so the founders must earn enough profits to repay the venture capitalists within three years or risk losing the firm. Such a contract reassures the venture capitalists that the founders will do their best to make profits from the investment, and the contract also reassures the founders that the venture capitalists will

[10] Lance Williams, "How 'visionary' raised – and lost – a fortune," San Francisco Chronicle, December 7, 2008, SF Gate edition, http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2008/12/07/MNIK147QU3.DTL.

keep the firm's secrets.

Corporate governance provides another device to solve the double trust problem in Silicon Valley. The firm's bylaws may stipulate that common shareholders (founders) and preferred shareholders (venture capitalists) appoint an equal number of directors to the company's board, plus an independent director accepted by both sides. If the founders and venture capitalists disagree, the independent direct holds the decisive vote. Thus the independent director will decide whether or not the venture capitalists can replace the founders with new management.

In the third stage, a successful startup sells itself to the public. The startup may sell directly to the public through an initial public offering of its stock, or it may sell indirectly when a publicly traded company acquires it. In order to sell stock to the public in the U.S., a firm must comply with disclosure rules of the Securities Exchange Commission. After information is disclosed, brokers quickly disseminate it to the investors whom they advise. Many people understand the innovation sufficiently to decide whether or not to invest in its further development. Because investors are a large group of people, we describe the third stage as *public finance*.

Like biological mutations, most startups fail and a few succeed spectacularly. The first stage is the most risky for investors; so first-stage investors get the stock at the lowest price. Only the innovator understands the innovation in the first stage and finance is relational. Those startups that survive the first stage have something substantial to show to venture capitalists in the second stage. In the second stage, a small group of specialists invest in development, so finance is private. Venture capitalists get the stock cheap, but not as cheap as first-stage investors. By the end of the second stage, the innovation has proved its profitability in the market. The firm ceases to be a startup when it reaches the third stage. Third-stage investors face lower risk and pay a higher price for stock. Many people understand the idea in the third state and finance is public.

After the stage of public finance, the double trust dilemma dissolves, because more and more of the firm's private information becomes public. As competitors understand its ideas, the innovator's profits return to their normal level. In economic theory, markets are forever tending towards an "equilibrium" where all profits are ordinary and no one has valuable private information. Thus the fourth and final stage is ideally a "competitive equilibrium."

The three stages of finance are not unique to Silicon Valley. The industrial revolution in England, which was the world's first, followed this pattern. In the early 18th century, inventions were developed by relying on the inventor's personal assets and loans from family and friends (relational finance). As the venture proved successful, a small group of outside investors might join (private). Finance of industrial companies by sales of stocks and bonds to the general public came later historically, following the successful public financing of infrastructure like canals, docks, and railways .[11]

Adaptation in Developing Countries

In every country, growth occurs through innovation, but the form of innovation can be very different from Silicon Valley. Innovations in Silicon Valley usually have a technological basis, such as new computer chips or programs that were previously unknown to the world. Instead of improving technology, many innovations improve organizations and markets. Thus Philip Knight, co-founder of the Nike Corporation, began by selling running shoes out of the trunk of his car in 1972. In 2006 the company reported $15 billion in worldwide sales of sports equipment and clothing. Knight obviously discovered something new, but what was it?

His company does not manufacture anything. Its main facility in Beaverton, Oregon, is a "campus," not a factory. Instead of manufacturing, it contracts with foreign companies to make all of the goods that it sells. The business of Nike is research and marketing. It thinks up new products, contracts with other firms to make them, and then markets them through extensive advertising. This new organizational form has spread dramatically in America as more and more companies "outsource" manufacturing and focus on research and marketing. Other examples of recent innovations in markets and

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[11] See Deane, P. (1965). The First Industrial Revolution Cambridge Univeristy Press, summary on pages 166-167. For financing of key 18th century inventions by name, see pages 165-165.

organizations in the United States include debit cards, hostile takeovers, networks of innovators, and team production (imported from Japan).

Technological innovation often requires research universities and similar institutions. Their relative weakness in developing countries at this point in history limits the scope for technological innovation. Technology mostly flows from developed countries to developing countries through international trade, investment, and educational exchanges. The flow hastened in the last century when major wars ended, communism collapsed, and tariffs and transportation costs fell.

With technological innovation limited, innovation in developing countries mostly takes the form of improving organizations and finding new markets. Entrepreneurs in developing countries often transfer organizations and markets that originate in developed countries and adapt them to local conditions. To illustrate, people who buy edible oil for cooking need to confidence in its quality. African consumers assure that it is fresh and unadulterated by smelling or tasting it, which requires sale in open containers. Closed containers, have many advantages, including lower shipping and storage costs. Bhimji Depar Shah figured out how to secure the trust of African consumers in oil sold in closed containers. He started an edible oil company in Thika, Kenya, in 1991 that developed into a business empire. The company's homepage reads: "Integrity is what all our people value and uphold ruthlessly which enables trust leading to empowerment." To create a team of reliable salespeople and trustworthy workers dispersed around Africa required innovation in organization, like Phil Knight and the Nike Corporation. Similarly, Leo Stan Ekeh from Nigeria found a way to produce computers in black Africa, which involved much more organizational creativity than simply imitating Hewlett-Packard or Lenovo.

Adaptation in markets and organizations often involve introducing new kinds of contracts. According to Easterly, two such innovations were crucial to developing the textile business in Bangladesh: bonded warehouses and back-to-back letters of credit.[12] Enforcing the contracts requires judges who appreciate how business works.

Adaptation in developing countries faces the same obstacles as invention in developed countries. The adapter has a novel idea that is new to a developing country and requires investment to prove its value in the market place. In the case of organizational and market adaptations, developing the idea imbeds it in an organization. The innovator must trust the investor not to steal his organization, and the investor must trust the innovator not to steal his money. Development is risky, success attracts competitors, and competitors diffuse the innovation and reduce the innovator's profits.

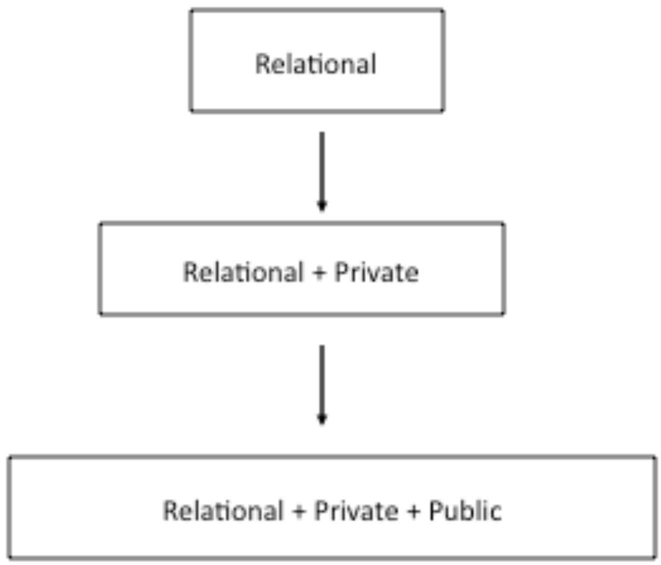
In business, adaptation is creative and risky. Instead of adaptation, some people imagine that developing countries can grow by imitation that is mechanical and safe. If growth were this simple, poor countries would already be rich. In poor and rich countries alike, new ideas in business mostly fail and the investors lose their money, whereas a few succeed spectacularly and drive growth. Picking out the adaptation that will succeed in Africa is just as hard as picking out the invention that will succeed in Silicon Valley. In both cases,

Innovation and Finance in Developing Countries

Biologists sometimes say, "Ontogeny recapitulates phylogeny," which means that the development of a single organism from birth to maturity resembles the evolution of the entire species. Similarly, the three stages of finance for a startup in Silicon Valley resemble three stages of historical evolution in capital markets for countries. First, in countries without capital markets, businessmen mostly borrow from family and friends. Finance remains relational, which keeps business small and local. Some peoples, notably Chinese and Jews, have extensive family networks that extend business relationships beyond the usual boundaries.

[12] William Easterly, The Elusive Quest for Growth: Economists'Advetures and Misadventures in the Tropics (MIT PRess, 2001).

Figure 1.3. Finance and Development



Relationships, however, constrain the amount of capital available to finance growth. To overcome this constraint and increase the scale of business, an economy must augment relational finance with private finance. In countries where banks dominate finance, an elite of wealthy insiders lend to businesses based on private information. Bank finance corresponds to the second stage in Silicon Valley.

As countries become affluent, however, they increasingly augment private finance with public finance, which means selling stocks and bonds to the general public. The third stage of finance requires public capital markets such as stock exchanges.

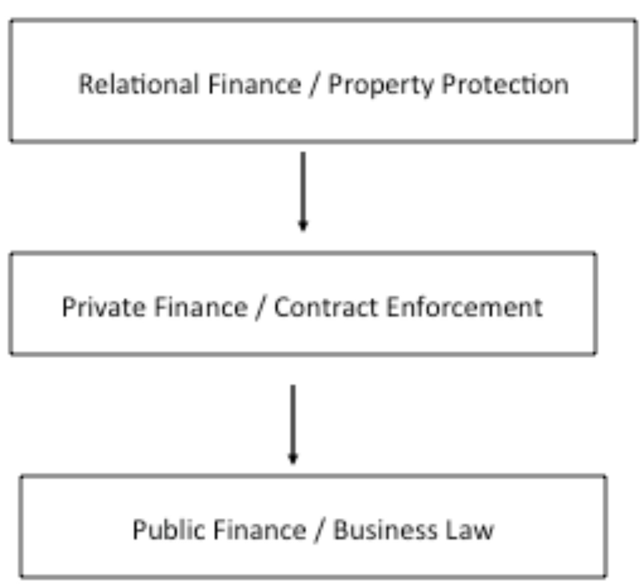
Figure 1.3 depicts the three stages of finance in economic development. The poorest countries rely on relational finance, not private or public finance. Starting from a very low level, relationships can finance the initial stages of growth, as in China in the 1980s. As wealth accumulates, however, relational finance constrains further growth. No modern country became wealthy by relying exclusively on relational finance. Richer countries augment relational finance with private finance. The richest countries augment relational and private finance with public finance. The three stages concern augmenting, not replacing, earlier forms of finance. As in Silicon Valley, all three forms of finance – relational, private and public – coexist and remain important in the richest countries.

While the richest countries have all three forms of finance, the mixture of private and public finance varies significantly from one country to another. Some countries or regions, such as Japan and northern Italy, have achieved affluence mostly through relational and private finance, with relatively little public finance. The U.S. and Great Britain, in contrast, rely mostly on public finance for mature industries. Germany appears to be shifting away from the former to the latter. Later we discuss this point in detail.

Law for Growth

What determines a country's stage of finance? We have a simple answer: effective law. Law is effective when legal obligations are enforced sufficiently so that most people keep them. (Later we explain what makes laws effective – it's not just the police and courts.) The most relevant laws for economic growth concern property protection, contract enforcement, and business organization. Substantial theoretical and empirical evidence supports this claim, as subsequent chapters demonstrate. The special relevance of property protection, contract enforcement, and business organization tracks the three forms of finance, as depicted in Figure 1.4.

Figure 1.4. Finance and Law



Without effective property protection, a person fears that thieves will steal his wealth. Hoodlums, mafias, cheating accountants, Ponzi artists, conniving state regulators, thieving politicians, and other predators make owners insecure. They hoard their wealth instead of investing it, and wealth flows from makers to protectors. With effective property protection, owners believe that they will enjoy future rewards from current investments. Families, clans, and gangs can also protect property, but an effective state is much more reliable. State protection of property is the legal foundation for relational finance. Relational finance can get by without much more legal support from the state than protection of property. Thus families can use informal sanctions to make relatives keep their promises to each other.

As development proceeds, however, sustained growth requires finance from non-relatives. Relationships among non-relatives are too thin for informal mechanisms to carry the burden of enforcing promises. To cooperate, strangers need to make promises backed by sanctions that third parties enforce. Flourishing private finance requires effective contract enforcement, not just property protection. An effective state enforces contracts much more reliably than clans or gangs. Contract law underpins markets for loans, banks, and direct foreign investment. Flourishing private finance also leads to specialized laws for debt collection, bonds, and banking.

With private finance, investors retain substantial control over how firms use their investments. When finance moves to the third stage, the general public buys stock or bonds, and they have little control over the use of their money. Instead, their money comes under the control of the insiders who manage the firm. Insiders have many opportunities to appropriate outsiders' investments. For example, insiders use accounting tricks to convert profits into salaries, thus depriving stockholders of their dividends. Protecting outsides from insiders requires more than protecting property and enforcing contracts. The additional protection comes from the law of securities, corporations, and bankruptcy, which we call "business law."

These facts suggest how finance constrains innovation and growth. Starting from a condition of lawlessness, imposition of secure property rights can cause a spurt of growth based on relational finance alone. The growth rate, however, eventually settles down to a rate sustained by relational finance. Starting from a condition with secure property, imposition of effective contract law can cause a spurt of growth based on relational and private finance. The growth rate eventually settles down to a rate sustained by relational finance and private finance. Finally, if effective business law supplements property and contract law, growth spurts and then settles down to a rate sustained by all *three* -- public, private, and relational finance.

What Makes Law Effective?

Growth requires effective law, not merely law-on-the-books. When we speak of "effective law," we mean rules that control behavior, not merely written rules. What makes laws effective? Many laws are obligations backed by sanctions. Sanctions give the victim a credible threat against the potential injurer. Foreseeing sanctions, the potential injurer usually does right, not wrong.[13] Effective law deters wrongdoing and ineffective law does not.

Writing down a law does not make it effective. Written law in a poor country often resembles written law in a rich country. Thus property and contract law-on-the-books in India and Nigeria resemble English common law, and property and contract law-on-the-books in Peru resemble the Spanish civil code. The written laws, however, are less effective in India, Nigeria, and Peru than in England or Spain. Social and state

[13] To deter a rational person from doing wrong, the expected sanction should equal or exceed the person's gain from wrongdoing. The expected sanction equals the probability of the sanction times its magnitude. A sanction worth $100 applied with probability ½ will deter wrongdoing by a rational person whose gain does not exceed $50. Applying the sanction is unnecessary except when the wrongdoer is too irrational to be deterred.

institutions interact to make law effective, and they differ by country according to its history and culture.[14]

Figure 1.5 depicts three sources of sanctions that make law effective. The sanctions that make law effective come from society, not just the state. Early anthropologists decisively proved this fact by studying stateless societies. Instead of speculating about the "state of nature" from his room in London, Bronislaw Malinowski traveled to the Trobriand Islands in 1914 and observed how people resolve their disputes. He found that when one person harmed another, Trobriand Islanders used social pressure to force the injurer's family to compensate the victim's family.[15] Facts like these persuaded anthropologists that law is much older than the state.

[14]This observation reflects Dani Rodrick's conclusion: "The cross-national literature has been unable to establish a strong causal link between any particular design feature of institutions and economic growth. We know that growth happens when investors feel secure, but we have no idea what specific institutional blueprints will make them feel more secure in a given context. The literature gives us no hint as to what the right levers are. Institutional function does not uniquely determine institutional form." See D. Rodrick (2006) Goodbye Washington Consensus, Hello Washington Confusion? A Review of The World Bank's "Economic Growth in the 1990s: Learning form a Decade of Reform, JEL , XLIV 973-987, p.979

[15] Malinowski, B. (1926). Crime and custom in savage society. New York Harcourt Brace & company Inc. In the Trobriand Islands, as among other tribal people in Polynesia, liability law traditionally crowded out criminal law. Malinowski's empirical discovery of this fact contracted a priori theorists of tribal life.

Figure 1.5. Effective Law

Like the Trobriand Islands in 1914, social sanctions remain important in modern societies. Social sanctions are flexible and cheap, so the victims of wrongdoing in business rely on them first. When a businessman breaches a contract, for example, the victim may stop trading with the injurer (refusal to deal), break promises owed to the injurer (retaliatory breach), sully the injurer's reputation (reputational sanctions), and encourage others not to deal with the injurer (boycott).

To improve the efficiency of social sanctions, people use non-state organizations. Thus most uncut diamonds are traded without written contracts in a small number of exchanges in cities like Manhattan and Antwerp. The diamond exchanges have merchant courts to resolve disputes without relying on state sanctions. Banishment from the exchange, which ruins a diamond dealer's livelihood, is the ultimate punishment.[16]

[16] Lisa Bernstein, "Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry," J. Legal Studies 21 (1992): 115-157.

By making information easier to obtain, the Internet has increased the effectiveness of reputational sanctions, especially by posting evaluations sellers by buyers. Reputational sanctions on the Internet are so efficient that strangers buy antiques online without examining them. Instead of decreasing over time, perhaps people will rely more on social sanctions in the future.

Social norms are the first cause of effective law, but not the only one. Social sanctions are insufficient to prevent wrongdoing in some transaction, especially one-time transactions with high stakes. Thus car dealers and real estate agents are notoriously exploitative. Even ordinarily moral people can be ruthless when buying or selling a car or house. In big deals, people need the state behind contracts much like diplomats need an army behind foreign policy. Financing innovation resembles buying a house -- a big deal with high stakes. Overcoming the double-trust dilemma requires effective state law to prevent stealing by the worst people and cheating by ordinary people.

Besides social sanctions, people in Europe and elsewhere ultimately look to state courts to enforce the law. Thus the victim of a broken contract may file a civil complaint against the injurer and threaten to sue for compensatory damages. To be effective, a threat to sue must be credible, which means that the plaintiff stands to gain more in damages from the court than his costs of litigating. Costs of litigating include lawyers' fees and delays. By keeping litigation costs down, courts increase the credibility of threats to litigate by the victims of wrongdoing and enable them to extract settlements on favorable terms. When courts resolve routine business disputes efficiently, most disputes settle on terms favoring the party who is on the right side of the law. In many poor countries, however, inefficient or corrupt courts decrease the credibility of threats to sue and prevent the party in the right from extracting a favorable settlement from the party in the wrong.

Third, besides social and court sanctions, civil servants in the state bureaucracy apply administrative sanctions, such as revoking permits, canceling contracts, applying regulations, investigating violations, or imposing fines. Autocratic states especially rely on administrative sanctions to protect citizens. Thus the state bureaucracy in contemporary China, and the Communist Party that stands behind it,[17] protect the sources of economic growth by guaranteeing most property rights and enforcing many contracts. To illustrate, imagine than an industrial enterprise and a farm in Guangzhou dispute the right to a piece of land. To mediate the dispute, the parties first appeal to powerful private persons. If private mediation failed, they might turn next to a local official in the city government. If one of them rejects the local official's decision, the next appeal might go to a communist party official in Beijing. By this chain, a combination of social and state sanctions deters wrongdoers. Some observers believe that China has effective property and contract law without having effective courts, while others disagree.

Is law more effective in some legal traditions than others? In particular, if we sort the countries of the world into "common law" derived ultimately from England, and "civil law" derived ultimately from France, does law tend to evolve towards greater efficiency in the former than the latter? In a series of papers, Andre Shleifer and his associates use cross-country econometrics to answer, "Yes."[18] Even if they are right, which we doubt, a country like, say, French Guiana, cannot change its legal history. (Question: "How do you get to Dublin? Useless answer: "Don't start from here.") Fortunately, these papers provide evidence on many legal changes that a country can make, regardless of its legal tradition, to promote economic growth. Subsequent chapters cite some of these specific results and research inspired by them.

Examples

This book proposes a "legal theory" of economic growth. As summarized in Figure 1.4, relational finance requires effective protection of property, private finance requires effective contract law, and public finance requires effective business law. Progressing through these forms of finance, the scope of effective law expands from

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[17] China has a dual system of government. For each office in the state – mayor, legislator, judge, administrator – there is a parallel office in the communist party. State officials have discretion in routine affairs, but the communist party official has final say in important matters.

[18] These papers involve the collaboration in different combinations of La Porta, Lopez-de-Silanes, Shleifer, and Vishny – hence the acronym LLSV. Perhaps the best review with citations is Paul G. Mahoney, "The Common Law and Economics Growth: Hayek Might Be Right," J. Legal Studies 30 (2001): 504.

anarchy to property, from property to contracts, and from contracts to business law. The most fundamental defect in law that retards economic growth in poor countries is ineffective protection of property, followed by ineffective contract law, and ending with ineffective business law. Ineffective law affects the economy like a toothless gear that spins without moving the vehicle forward.

Next we provide some examples of this pattern of defects, which we analyze throughout the book. At the lowest level, ineffective protection of property rights devastate an economy, as illustrated by this example from the 1990s.

> <u>African Diamonds</u>: Diamond miners in central Africa use hand-tools to dig in a riverbed under the guard of teenage soldiers with Kalashnikov rifles. The miners sell the diamonds to a military officer at a small fraction of world market prices. The diamonds subsequently pass through various intermediaries until they reach Europe. Finally a courier arrives at the central railway station in Antwerp, Belgium, walks quickly to one of the nearby diamond shops, the merchant examines the diamonds and pays in cash, and the courier leaves the city by train within an hour.

In central Africa, producing and transporting diamonds in recent years occurred in conditions that approached anarchy; so central Africa produced few diamonds and received much less than the world price for them. If anarchy were replaced by a secure system of property rights, central African nations could produce diamonds with better technology, export them through the regular channels of trade, and receive the world price. And the profits would not go to thugs. (We say nothing here about the unspeakable cruelties and heinous abuse of human rights from this region's anarchy).

> <u>Moscow Security</u>: A man opens a small shop selling household goods in Moscow in 1992. A month later three young men visit him with copies of his bank records. Using these numbers, the men calculate a monthly fee that he must pay them to "protect his shop from hooligans." If he does not pay, they will destroy his shop. The shopkeeper pays and his business succeeds.

Unlike diamond thieves, Moscow criminals who sell security do not want to take everything from their clients. Selling protection presupposes something to protect. In this example, the Moscow criminals impose a "security tax" that leaves room for the shopkeeper to succeed. When organized criminals provide security, however, the "tax" is much higher than when a successful state provides it. Security is a "natural monopoly," which means that states can provide it more cheaply and reliably than private parties. The Moscow criminals burden business much more heavily than successful states that provide security.

The two preceding examples illustrate that private security of property is better than anarchy and worse than effective state law. Now we turn from property to contracts:

> Indonesian Textiles: In Jakarta in the 1990s, a businessman manufactures cloth, makes the cloth into dresses, hand-decorates them, and exports the finished product. The entire process occurs inside a single factory where cotton and silk come in the door and decorated dresses go out the door. Managers in the factory are mostly relatives of the owner. Rural households outside Jakarta would do the hand-decorations at lower wages than factory workers in the city. The businessman, however, is unwilling to leave the dresses in rural households in exchange for a promise to decorate them.

In this example, the businessman gathers everyone needed to produce a particular product into a single factory, where his relatives can monitor them. In countries with weak legal institutions, economic cooperation usually involves people with personal ties, especially relatives and friends. Most people, however, do not have enough relatives and friends to achieve the scale of activity required for affluence. Property and contract law lower the cost of monitoring and extend cooperation to strangers, which facilitates dispersed production, larger organizations, and wider markets. The example of Indonesian textiles illustrates that weak contract law can keep trade local and organizations small.

Loans are an important and pervasive type of contract, as illustrated by this example:

> Mexican Loan: A poor man in Mexico City needs a loan to buy a refrigerator for storing food that he sells on the street. The lender needs security against the debtor's failure to repay. The court process for repossessing the refrigerator from a defaulting debtor is too slow and unreliable. Instead, the lender requires the borrower to provide information about his family and friends – telephone numbers, addresses, and place of work. If the borrower falls behind in payments, the lender will use the borrower's family and friends to pressure him to repay the loan, and, if necessary, the lender will use their influence to repossess the refrigerator.

This example illustrates a pervasive obstacle to business in poor countries: The impracticality of collecting debts though courts. Thus Mexican courts assess such low interest rates on delays in collecting court judgments that debtors gain by stringing out the legal process. Similarly, judges regularly take bribes to decide cases in some countries. A friend told us that, instead of trying cases, many Indonesian judges in lower courts "auction" them. High-cost debt collection dries up loans to small businesses like the Mexican street vendor.

In this example, however, the parties found a way around debt collection through the courts: rely on family and friends. The lender apparently found a way to use relational finance in circumstances where the borrower and lender have no relationship. In fact, one of Mexico's richest businessmen, Ricardo Salinas, began to build his fortune by figuring out ways like this to collect debts from poor people who buy consumer durables.

A different kind of financial problem known as the "soft-budget constraint" exists in countries with a socialist tradition:

> Chinese steel: When the government privatized a steel company in northern China, it created shares of stock and divided them three ways. 33% were sold to the public who can resell them freely ("tradable" shares). 47% were allocated to the government. And 20% were allocated to insiders who cannot sell them ("non-tradable" shares). After privatization, the steel company keeps losing money. Its managers, who have political influence, pressure a state bank to finance its losses by buying its bonds, which are commercially unsound. "Soft loans" from the government enable the steel firm to postpone the painful changes necessary to become profitable.

From China to the Czech Republic, partly privatized companies subsist from soft government loans. In the case of China, their voracious appetite for cash crowds out the bonds of profitable companies that are the engine of China's growth. Without access to the bond market, profitable private firms must rely on relational finance. If the government hardened the soft budget constraint, the bond market would finance growth more effectively.

In some circumstances, every country softens the budget constraint of firms, as shown by the financial crisis that erupted in the fall of 2008. The U.S. government committed to loaning or giving over $700 billion to financial institutions. Many of the beneficiaries were former business associates of the program's administrator, Secretary of the Treasury Henry Paulson. Earlier Paulson had profited vastly from dismantling the regulations protecting against such a financial crisis.[19] Most economists in the U.S. endorsed making vast loans to banks in order to avoid a depression resembling 1929, but they did not necessarily endorse the way the funds were distributed. By softening the budged constraint on American financial institutions, the program surely slowed the restructuring of failed organizations.

Now we turn to an example of involving stock markets.

> Ecuadorian stocks: A family owns a successful shrimp farms in the coastal mangrove swamps on the Gulf of Guayaquil. To grow faster, the business needs to obtain more capital, either by selling stocks or getting a loan. The family knows that shrimp prices could fall in the international market. If the family sells stocks, investors will receive dividends when shrimp prices are high, and nothing when shrimp prices are low. If the family gets a loan, however, the bank must receive periodic payments, regardless of whether shrimp prices are high or low. To reduce its risk, the family wants to sell stock, not get a loan. The family seeks advice from a financial expert in Guayaquil, who says that the small size of the Ecuadorian stock market makes selling stock impractical. (In a recent year, Ecuadorians obtained 150 times more capital from loans and sales of bonds than from selling stocks.) Since the family cannot sell stock and it regards fixed-interest debt as too risky, it decides to forego outside finance and grow more slowly.

When you invest in a company that you do not control, you run the risk that the people who control it will appropriate your investment. The problem is harder to solve for stocks than loans and bonds. Stocks entitle their owners to a share of profits. A company's managers can manipulate reported profits and make dividends disappear. A stock market cannot flourish unless corporate and securities laws effectively protect non-

[19] As chief executive of the investment banking firm Goldman Sachs, Paulson advocated "self-regulation" to comply with international banking protocols known as "Basil II." Self-regulation allowed investment banks to sharply increase their ratio of debt to equity ("leverage"). The result was extreme risk-taking, which yielded vast bonuses to executives in the short run and the collapse of the investment banks in the long run. To become Secretary of Treasury, Paulson had to sell his stock so that he would not be federal regulator for companies in which he had a personal interest. When he sold his stock, commentators estimated that he received hundreds of millions of dollars. Furthermore, the law allowed him to avoid paying capital gains on this stock because he sold it in order to enter government service. Thus he avoided tax liabilities that commentators estimate to be in the tens of millions of dollars.

controlling investors. Unlike stocks, bank loans and bonds prescribe an exact repayment schedule that the borrower must meet or go bankrupt. Courts can enforce a prescribed repayment schedule for a loan easier than profit sharing for stocks. Consequently, the credit market can flourish under conditions where the stock market languishes.

When credit markets flourish and stock markets languish, as in Ecuador, bank loans finance much business expansion. As explained, borrowing at fixed interest rates is much more risky for an entrepreneur than borrowing against a share of future profits. A larger stock market would enable entrepreneurs to spread their risk. The skew in financing away from stocks dampens investment in startups and slows the pace of innovation.

Conclusion: Why read this book?

Wealth is a means like a hammer, not an end like a family. Wealth can buy tangible goods -- hamburgers, penicillin, houses, cars, books, theater tickets, etc. The tangible goods are means to abstract goods like nutrition, health, comfort, enjoyment, education, culture, travel, etc. Wealth is also a means to social power, which humans and chimpanzees crave. However, wealth is not an end in itself like happiness, goodness, holiness, beauty, love, knowledge, or self-fulfillment.

Treating means as ends perverts values, according to philosophers and priests. Does our study of economic growth make wealth into a fetish, like falling in a love with a shoe? Is the nation that wins the growth race like the winner of the pie-eating contest whose prize is another pie? Before turning to the next chapter, we pause to consider why the wealth of nations is worth studying and why this book is worth reading.

To appreciate wealth's value, consider how economists measure it. Shingles, tractors, word-processors, antibiotics, movies, insurance, and all other goods sold in markets have prices. Multiply the market price times the quantity of each good that a nation produces, sum these numbers, and you have a measure of national income. This is the foundation of such familiar indicators as gross domestic product (GDP). To this measure to innovation and growth, note that shingles repel rain better than thatch, a tractor ploughs faster than a hand hoe, a word processor corrects errors easier than a typewriter, a moving picture entertains more than a zoetrope, antibiotics cure infections better than sulfa drugs, exchange with money is quicker than barter, investment banks allocate capital more efficiently than a rich nobility, insurance provides more security than gold bricks, universities educate more people than tutors, etc. Almost everyone counts changes like these as improvements that enrich a nation, but by how much? Measures of wealth like GDP use market prices to provide an answer. When innovators make better goods, the additional amount that people are willing to pay for them measures the innovation's market value. When innovators find a better way to make things, the additional amount that producers can supply at the same cost measures the innovation's market value.

However, a simple measure of national income like GDP omits, or measures inadequately, the value of non-market goods such as national parks, safe streets, clean rivers, public health, graceful buildings, and longevity. The same is true for non-market "bads" like strip-mall ugliness, congestion, global warming, global dimming, high blood pressure, street-sleepers, junk food, stupid television shows, empty cathedrals, intimidating punks, and unloved children. Instead of GDP, perhaps our book should focus on inclusive measures of wealth, including nonmarket goods that are part of the quality of life.[20]

Or perhaps we should skip the study of wealth and go directly to one its ends – say, happiness. Does more wealth cause more happiness? Even songwriters disagree. Thus Barrett Strong's hit song of 1959 proclaimed, "Money don't get everything it's true/What it don't get I can't use." The Beatles replied in 1964 with another hit: "I don't care too much for money, money can't buy me love." Using statistics instead of songs, economists have examined the connection between money and happiness. To find out what makes people happy, economists survey people for

[20] Note that governments supply many non-market goods, and GDP measures their value by their cost (e.g. salaries paid to civil servants), not by their benefits to the citizens. Cost-benefit analysis can measure some of these non-market values more convincingly. To measure the value of non-market goods, economists try to find out how much people would pay for them if they had to pay, given that they don't have to pay. This can be a measurement maelstrom, so national accounting limits its use of cost-benefit analysis.

self-reported happiness: “Is your overall satisfaction with your life high, medium, or low?” Comparing nations, people report a *little* more happiness on average in richer countries than in poorer countries, but not a lot more. Similarly, within a nation, people with more money report a little more happiness on average than those with less money. On the individual level, increasing someone’s wealth causes a large, immediate increase in self-reported happiness, but the increase is short-lived and the wealthier person’s happiness soon reverts almost to its former level.[21] Perhaps our book should focus on insights like these to analyze how economic development can increase happiness.

Inclusive wealth or happiness comes closer than GDP to measuring the ends of life, but, even so, a compelling reason makes us focus on market wealth in this book. While wealth is not the ultimate end in life, it matters a lot to most people. Almost everyone would prefer the wealth of Belgium rather than the poverty of Bangladesh. Governments throughout the world proclaim that they want more wealth to make a better life for their people. Individuals and governments struggle mightily to increase their wealth. The value of this book is explaining how to succeed. Whereas increasing wealth is a struggle, individuals or nations who consider themselves too wealthy do not need this book, because they have an easy cure at hand -- give some away.

Whether in Silicon Valley, Swaziland, or Sichuan, sustained growth in market wealth comes especially from economic innovation, which occurs when people solve the double trust dilemma. This book explains how law solves the double trust dilemma of innovation, so it offers a legal theory about innovation in markets. The double trust dilemma arises from the need for investors and innovators to cooperate in pursuing wealth. In contrast, non-market goods require public choices, which have a different logic. The double trust dilemma of innovation does not have such a prominent place in explaining how to improve the supply of nonmarket goods. They are subjects for other books that deal with public choices.

Chapter 1 explained that solving the double trust dilemma through relational finance requires the protection of property; solving it through private finance requires the

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[21] B. S.Frey and A. Stutter (2002), "What Can Economists Learn from Happiness Research?" Journal of Economic Literature.

enforcement of contracts; and solving it through public finance requires effective business law. The chapters that follow in this book analyze property, contract, and business law, respectively, from the perspective of the double trust dilemma. We will consider theory and evidence about how these bodies of law promote or obstruct growth. We will explain the wealth-increasing effects of law, not the wealth-decreasing effects exhausting legal disputes and thickets of regulation. But before considering specific bodies of law, the next chapter surveys some facts about economic performance of nations around the world.

Chapter 2

The Economic Future of the World

If poor nations grow faster than rich ones, peoples will mingle and merge through trade, travel, and talk. Convergent growth unites the families of man, like Europe's common market united peoples separated by two thousand years of warfare. Conversely, if rich nations grow faster than poor ones, their ways of life will separate and sympathy will attenuate, as between affluent citizens and shabby illegal immigrants in modern cities. Divergent growth undermines the common sense of humanity and separates the families of man.[1] So growth rates will determine the future of the world.

This chapter surveys the facts about the wealth of nations that the rest of the book tries to explain. Angus Maddison heroically attempts to measure the wealth of nations over millennia.[2] He calculates that Egypt was the richest country in the world 2000 years ago, with a per capita income 50% higher than in other countries of the Roman Empire, China or India. In the year 1,000 Iran and Iraq under the Abbasids were the economically most advanced countries with a per capita income about 50% higher than in Europe or Asia. In the year 1,500 Italy had the lead with a per capita income 50 per cent higher than in the rest of Western Europe, double that of Asia and three times that of Africa. After the Napoleonic Wars in 1820 Western Europe and the USA had the highest income, twice as much as in Eastern Europe, Latin America and Asia, and three times as much as in Africa.

Moving forward, where the data becomes more reliable, the fastest growing nations surged ahead of the laggards, creating a gap between rich and poor nations without historical precedent. In the year 1900 the per capita income of the richest nations was around $4,000 dollars, which is 6 times higher than in

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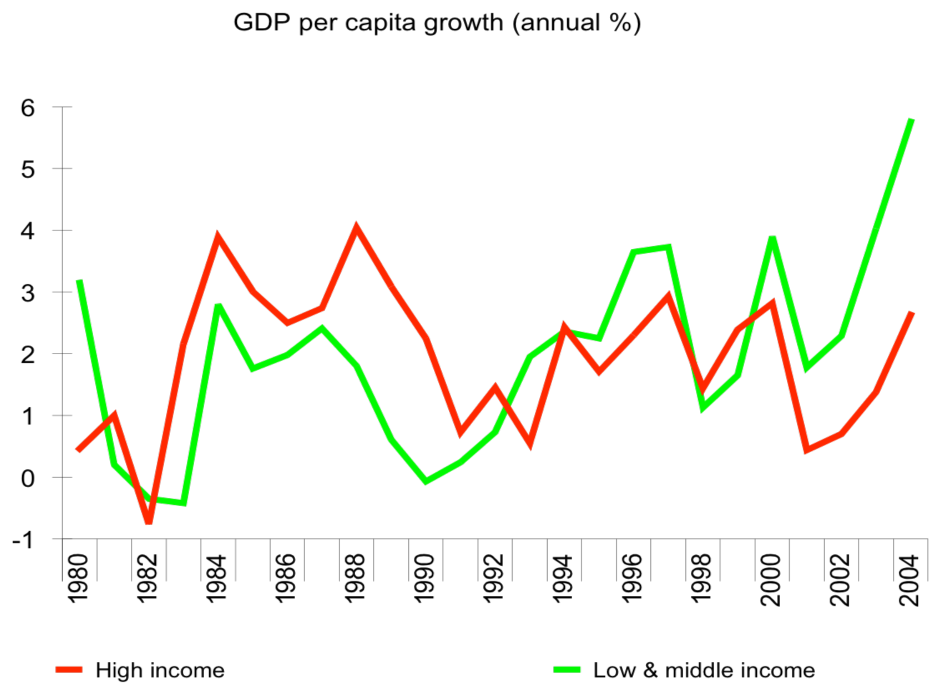
[1] In economic terms, cultures are equilibria that separate when wealth diverges.
[2] A. Maddison *Monitoring the World Economy 1820-1992*, OECD, Paris 1995; *The World Economy: A Millennial Perspective*, OECD Development Centre, Paris 2001; The World Economy: Historical Statistics, OECD Development Centre, Paris 2003.

the poorest nations. In 2003 the world' richest countries had a per capita income of $24,000 dollars, which is 40 times higher than the poorest nations.

A comparison of four nations – South Korea, Mexico, Turkey, and Senegal -- shows how dramatically income rankings can change over a period of 50 years. In 1950 South Korea's income per capita was slightly lower than the other three countries, although all of them were similarly poor. By 2003, South Korea's income per capita had increase more than 900%, Mexico and Turkey had increase by more than 300%, and Senegal had declined slightly. In 2008 South Korea's income per capita was more than twice as high as the second in the group (Mexico), and 10 times higher than the last in the group (Senegal).

In recent years, do countries that start poor tend to grow slower and fall farther behind countries that start rich, or do countries that start poor tend to grow faster and overtake countries that start rich? Figure 2.1 depicts the percentage growth rate of income per capita for high-income countries from 1980 to 2004, and also for low and middle-income countries. Like two ballroom dancers, the two curves move up and down together, which shows that all nations are part of a world economy. Economic growth by one group of countries apparently does not cause economic decline by the other group, or else the curves would move in opposite directions. For the first half of the period, the relatively rich countries grew faster, causing living standard to diverge. More recently, the relatively poor countries grew faster, causing living standard to converge. Over the full period, there is no clear tendency for poor countries to grow faster or slower than rich countries. Nor is there a tendency for the rich to get richer by making the poor get poorer.

Figure 2.1. Annual Percentage Growth of
Gross Domestic Product (GDP) Per Capita



Regions of the World

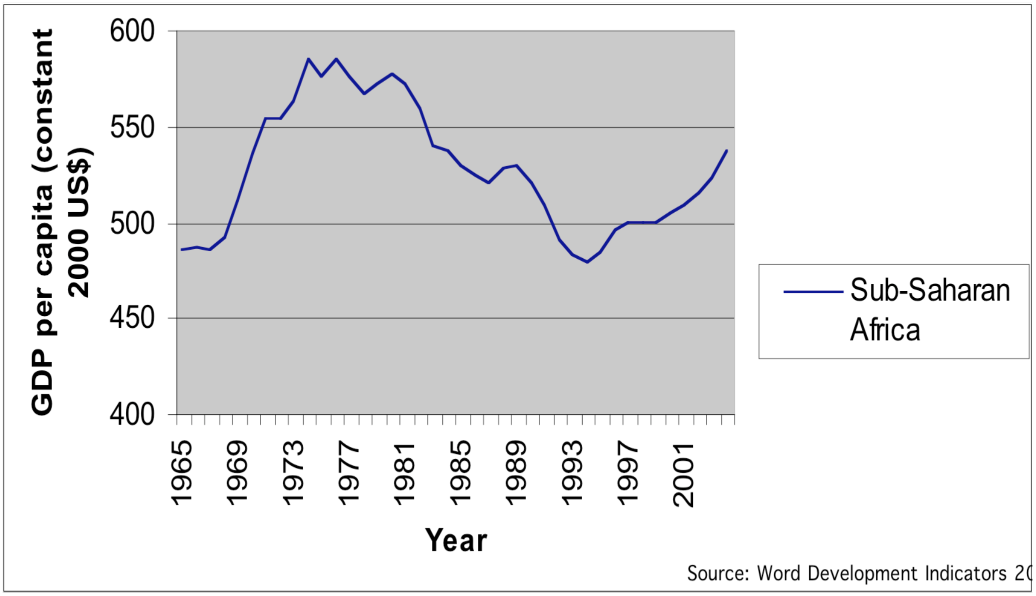
Figure 2.1 aggregates the countries of the world into two groups. Next we disaggregate to the level of the world's regions.

Africa

Figure 2.2 shows that sub-Saharan Africa enjoyed substantial increases in per capita income in the late 1960s and early 1970s. From the mid 1970s, however, this region suffered 20 years of decline in income per capita -- a decline of more than 20% between 1975 and 1995.[3] After the mid 1990s, income resumed increasing.

[3] GDP per person in sub-Saharan Africa has declined since 1974, roughly by the order of 20%. In 1974 it was 600 US Dollars (at constant prices of 2000) per capita. It declined to 470 dollars in 1994 and since then increased slowly to 510 Dollars in 2003. See World Bank, World Development Indicators 2005.

Figure 2.2. Income Per Capita in Sub-Saharan Africa



Eastern Europe

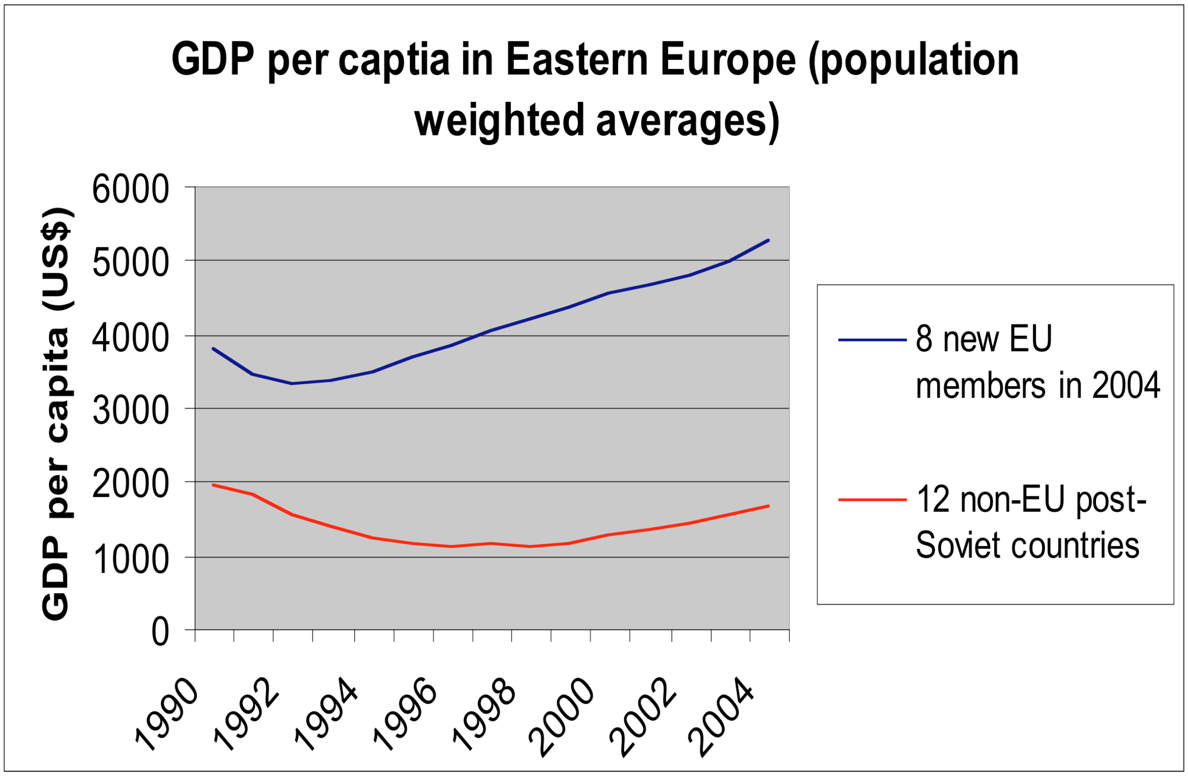
Next we turn to the formerly communist countries of Eastern Europe. When communism collapsed in 1989, so did central planning, which was the organizing principle in these economies. Two groups of countries responded differently to these traumatic events. Figure 2.3 divides the countries of Eastern Europe into the 8 that became members of the European Union in 2004, and the 12 that did not join the EU.[4] In the aftermath of communism's collapse, income per person declined from 1990 to 1994 in both groups of countries. The countries that joined the EU, however, recovered in the mid 1990s and grew steadily. By 1995 their income achieved its former level before communism's collapse, and then increased by roughly 25% from 1994 to 2004. The 12 non-EU economies, however, remained stagnant during the second half of the 1990s. On average, income per capita in 2004 had not recovered to its level in 1990. In the case of

[4] After 1989, some of the formerly communist countries -- Poland, the Czech Republic, Slovakia, Slovenia, Hungary, Latvia, Estonia, and Lithuania -- committed to a path resulting in full membership in the European Union in 2004. More recently, Bulgaria and Rumania completed a similar process and joined the EU. Russia, Belarus, Georgia, Moldova, and Ukraine did not commit to a path leading to EU membership.

Russia, income per capita apparently declined by 42% from 1990 to 1998.[5] After 2000, this group of countries recovered and now are they regaining the level enjoyed in 1988 under communism.[6]

[5] This estimate in the World Bank Development Indicators attempts to encompass the illegal, underground economy, which is large and hard to measure. Subsequently, Russia has recovered by becoming more lawful and enjoying rising mineral prices.
[6] The pattern in Figure _7 is presumably correct, but the numbers require cautious interpretation. Under communism, producers over-stated production in order to meet the targets set for them by the state. Under capitalism, producers under-state production in order to avoid paying taxes.

Figure 2.3. GDP Per Capita in Eastern Europe (population weighted averages)



Latin America

Turning to Latin America, the region enjoyed robust growth in income per capita from 1965 until roughly 1980, as depicted in Figure 2.4. Then the region suffered a decline and pause in growth resembling Eastern Europe, although milder in form. In the 1990s, income per capita resumed its upward path at a modest pace.

Figure 2.4. Income Per Capita in Latin America & Caribbean

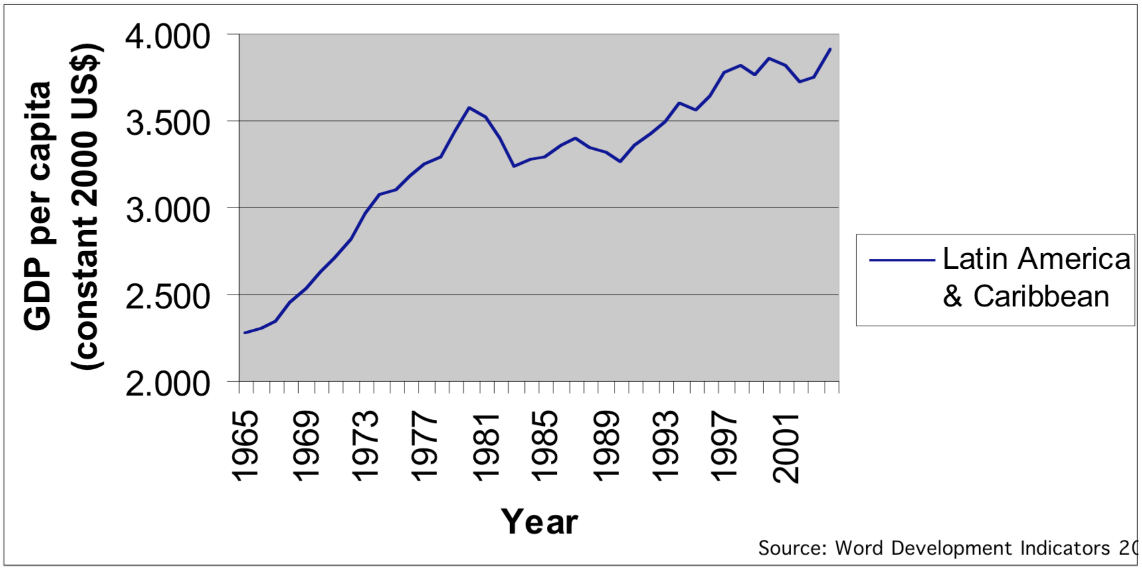
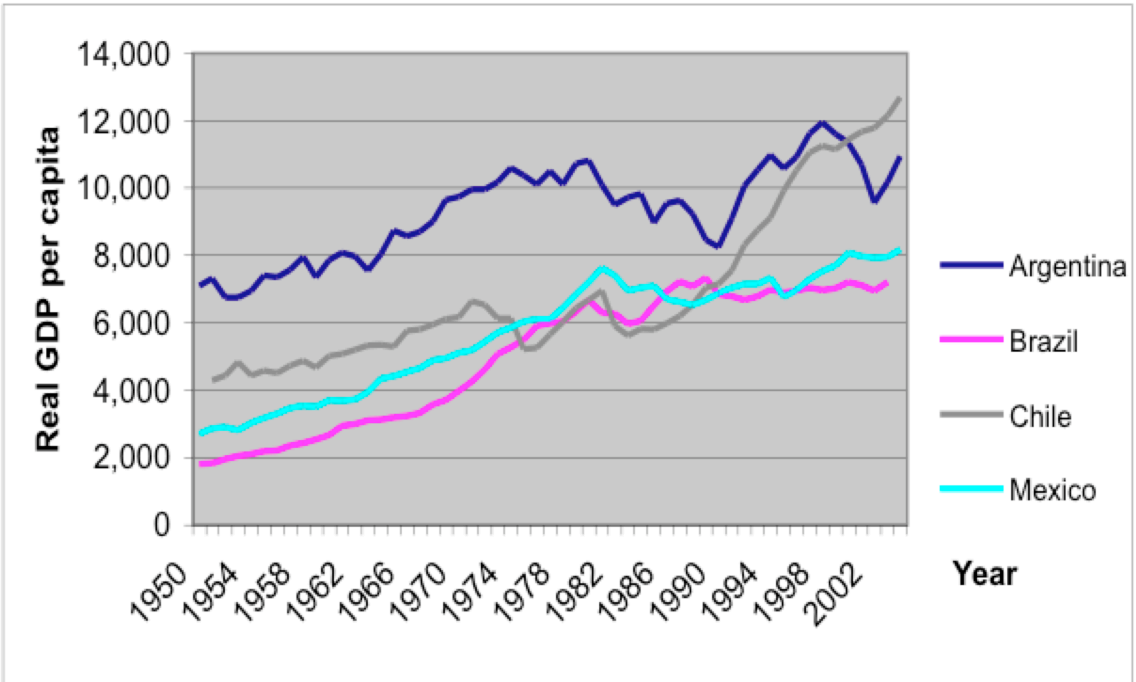


Figure 2.5 shows the growth of four of the larger Latin American countries. The downturn in the 1980s and recovery in the 1990s were steepest in Argentina. Growth in Brazil and Mexico impressed until the 1980s, and then slowed. Note that Chile's growth accelerated after 1985 and remained high. (In each region of the world, exceptional countries like Chile contradict the regional pattern.)

Figure 2.5. Income Per Capita in Four Latin American Countries



China

Figure 2.6 depicts income per capita for China. Until the mid-1980s, income per capita was low and stagnant. From the mid 1980s through 2004 China enjoyed spectacular growth without respite. China's performance in lifting so many people out of poverty in the last 20 years has no historical parallel. Most people cannot imagine China with more economic influence in the world than the U.S, but, if recent trends continue, China will surpass the U.S. in national income in 2014.[7] The world is becoming multi-polar in economics and business, and the change is happening faster than people can comprehend, especially Americans.

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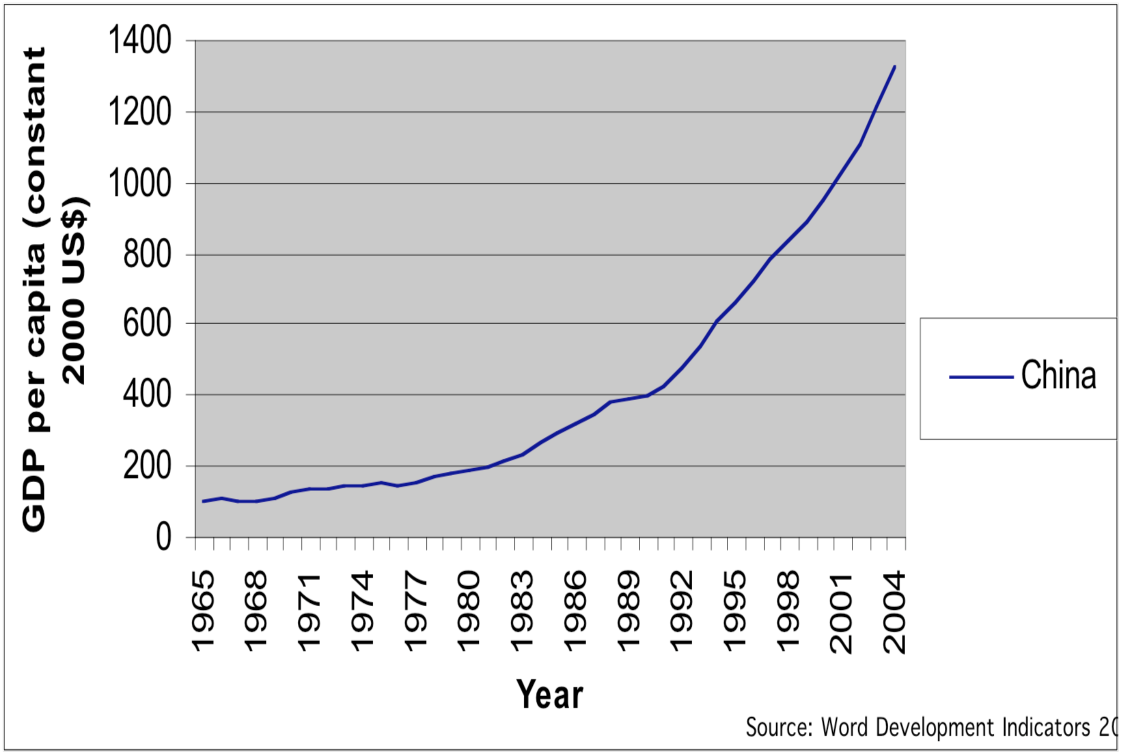
[7] This prediction was made by C. J. Dahlman, Luce Professor of International Affairs and Information of Georgetown University, in remarks to the Chinese Reform Summit, National Development and Reform Commission (NDRC), Beijing Diaoyutai State Guesthouse, July 12th-13th, 2005. Dahlman extended existing trends, allowed for a modest slowing of Chinese growth rates, and used the purchasing power parity method of comparison.

Since China's population is 4 to 5 times greater than the U.S., China's income per capita in 2014 will still be ¼ to 1/5th that of the U.S.

Figure 2.6. Income Per Capita in China

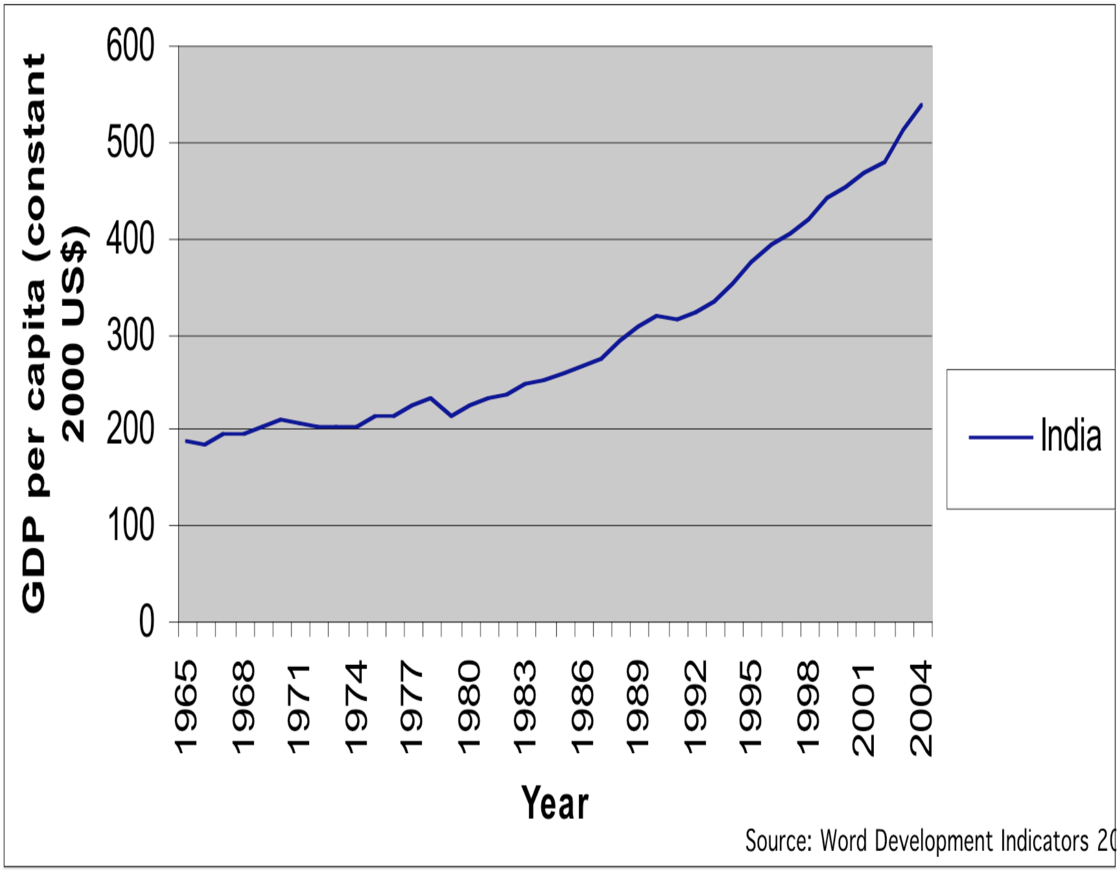


Source: Calculated from World Development Report 2007

India

Figure 2.7 depicts income per capita for India. Until roughly 1980s, income per capita grew very slowly. After 1980, growth increased significantly. The result is a remarkable achievement by historical standards, although less than China's. India started higher than China in 1965 and ended significantly lower in 2004. Roughly 40% of the world's population lives in China and India. The remarkable economic performance of these two economies accounts for much of the world's progress in lifting people out of poverty in recent decades.

Figure 2.7. Income Per Capita in India

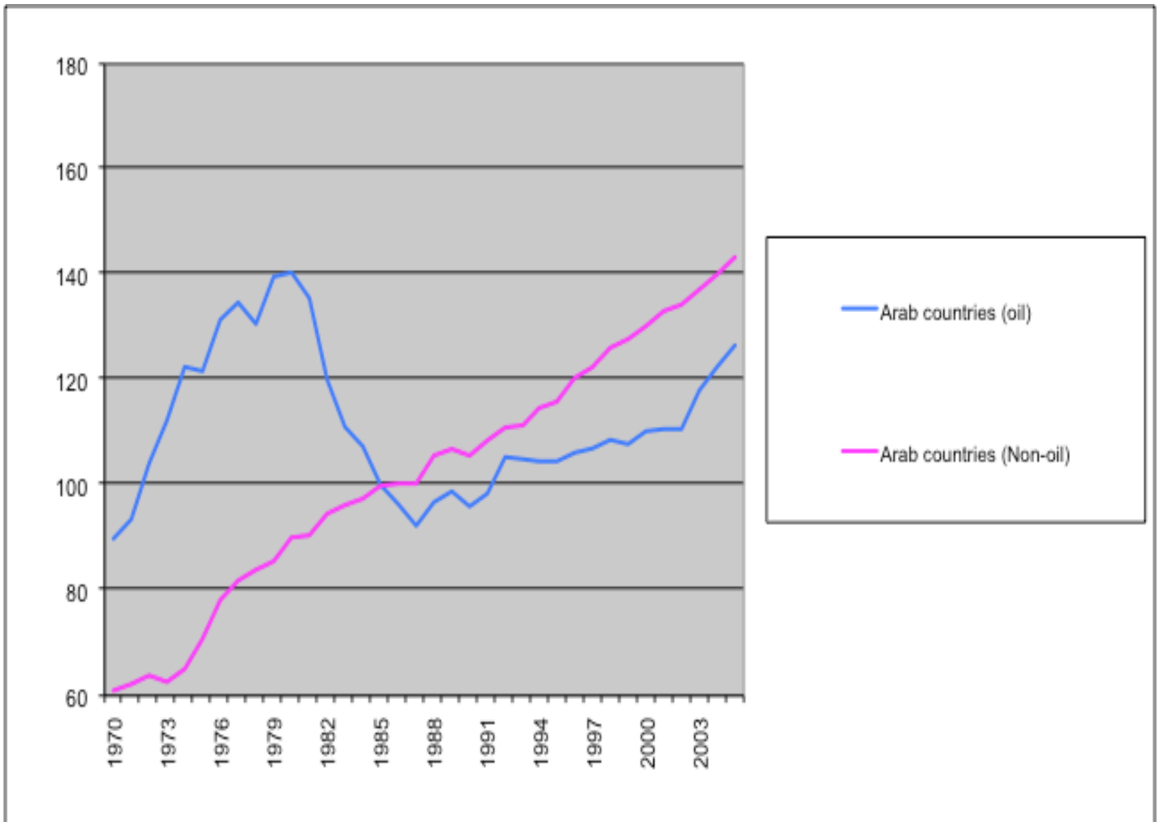


Arab Countries

Finally, we turn to the Arab countries, whose economic performance differs dramatically depending on whether or not they have abundant oil. The blue line in Figure 2.8 describes the growth in income per person for the Arab oil countries. According to this figure, income per person in the Arab oil countries rose in the 1970s, declined in the early 1980s, stabilized, and rose after the late 1990s. This is exactly the pattern of world oil prices.

In contrast, the Arab non-oil countries have far less income per person than the Arab oil countries. To fit the Arab non-oil countries on the same graph, Figure 2.8 uses a convention: It assigns the value “100” to both groups of countries in the baseline year of 1983, even though “100” represents a much higher absolute value for the oil countries than for the non-oil countries. All changes are measured against this baseline year of 1983. As depicted in Figure 2.8, income per person in the Arab non-oil countries increased almost at a constant absolute rate per year from the mid 1970s. A constant growth in absolute income, however, implies a falling *percentage* growth, just like 5 centimeters is a smaller percentage growth for a teenager than a toddler.[8]

Fig. 2.8. Index of *Change* in Income Per Capita in Arab Countries[9]



Regional Causes of Growth

Economic growth in a nation has multiple causes – law, capital accumulation, factor mobilization, demographic change, education, health, religion, culture, world prices, depressions, central bank policies, regulations,

[8] George T. Abed (2003) Unfulfilled Promise, Why the Middle East and North Africa region has lagged in growth and globalization, Finance and Development, Vol. 40, 1.
[9] Calculated from World Development Report 2007.

tariffs, to name a few.[10] Changes in the protection of property, enforcement of contracts, and effectiveness of business law are the most important legal causes. Large changes in these laws resulted from decolonization in Africa, the collapse of communism in Eastern Europe, the dissolution of the communes and restoration of private business in China, privatization and liberalization in Latin America, and dismantling central planning in India. We hypothesize that these large legal changes were prominent causes of the large changes in economic growth and decline depicted in the preceding graphs.

To elaborate, colonies in sub-Saharan Africa became independent countries in a process that concluded in the 1960s. After the euphoria of freedom subsided, unresolved ethnic and political conflicts too often devolved into anarchy or civil war. Besides ethnic strife, the newly independent countries allegedly suffered increasing corruption and decreasing competence in administration.[11] We hypothesize that these factors caused a sharp decline in protection of property and enforcement of contracts in the 1960s and 1970s. The situation gradually improved in the 1990s. According to our hypothesis, these changes were prominent causes of the pattern in economic growth for sub-Saharan Africa depicted in Figure 2.2.

Turning to Eastern Europe under communism, state planning displaced markets, nationalized industries dwarfed private ownership, and public law crowded out private law. Even so, bureaucratic behavior gave particular people stable power over resources somewhat like property rights, and political bargains created obligations resembling contracts.[12] Communism's collapse after 1989 destabilized these arrangements and production declined as these countries

[10] Others include interest rates, inflation, regulations, embargoes, tariffs, foreign investment, foreign aid, independence of the central bank, and International Monetary Fund policies.
[11] These are brilliantly depicted in Chinua Achebe's novels, Things Fall Apart and No Longer at Ease.
[12] A more accurate term than "property rights" is "use-rights" – Soviet officials had stable, predictable powers to use particular resources in particular ways, including socialist firms, although not necessarily the right to sell them. See A. Sajo, "Diffuse Rights in Search of an Agent: A Property Rights Analysis of the Firm in the Socialist Market Economy," International Review of law and Economics 10 (1990): 41-60. In Russia, contracts between enterprises were enforced through "arbitration courts." For a series of empirical papers on them, see Kathryn Henley's publications at http://law.wisc.edu/profiles/pubs.php?iEmployeeID=143.

struggled to introduce a market economy. Ten countries committed to a path to full membership in the European Union.[13] The EU imposed timetables and gave tactical support for eliminating state corruption, creating independent courts, and enforcing civil law. The effective law of property, contracts, and business improved dramatically, which contributed to vibrant economic growth.

The other five formerly communist countries in Europe did not join the EU.[14] They made much less progress towards reducing corruption, creating independent courts, and enforcing property and contract rights. Some observers describe the result as "gangster capitalism." In any case, their economies stalled for a decade in the 1990s. They began to recover after 2000, partly because of improvements in state administration and civil law, among other factors.[15] According to our hypothesis, these changes contributed to the pattern of economic growth depicted in Figure 2.3. (A similar history applies to the non-European countries of the former Soviet Union.[16])

Turning to Latin America in the late 1970s and early 1980s, almost all countries ended state ownership of key industries (privatization), reduced the regulation of private business (liberalization), and removed barriers to international trade (free trade).[17] The market was liberalized in a context of weak state protection of investors and competitors. These events resemble a milder form of Russia's transition to markets with weak institutions. Liberalization and privatization in 1990s produced worse economic performance than Latin America had enjoyed in earlier decades, with the remarkable exception of Chile. More stability returned to finance and property law in the 1990s and economic growth resumed.

Turning to China, after the communist revolution triumphed in 1949, the state followed the Russian model of replacing markets with state administration. Bureaucracies gave particular officials power over resources somewhat like

[13] Poland, the Czech Republic, Slovakia, Slovenia, Hungary, Latvia, Estonia, and Lithuania joined in 2004. More recently, Bulgaria and Rumania completed a similar process and joined the EU.
[14] Russia, Belarus, Georgia, Moldova, and Ukraine.
[15] Rising world oil prices were probably the most important factor in Russia, but not in Belarus, Georgia, Moldova, and Ukraine.
[16] Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.
[17] We discuss the "Washington Consensus" and privatization in Chapter _.

property rights, and economic bargains among officials somewhat resembled contracts. In the 1960s, however, China's Cultural Revolution attacked the state bureaucracy and the remains of the private sector. Security of property and the enforcement of contracts collapsed, as did the economy. However, the reforms under Deng Shao Ping in the 1980s dissolved the agricultural communes and restored private businesses. In the 1980s, the communist party, the state bureaucracy, and business networks dramatically increased protection of property and enforcement of contracts. In the 1980s, China replaced state led growth with state protected growth, which yielded spectacular results.

Earlier we characterized the decline and recovery in Latin America as a milder form of the pattern in Eastern Europe. Similarly, the pattern in India is a milder form of the pattern in China. After Indian gained independence from Britain in 1947, state planning gradually crowded out markets, and public law gradually crowded out private law. By 1980 India had a state-led economy like China, but it never devolved into the chaos of China's Cultural Revolution. India remained a democratic state with independent courts and good written laws of property and contracts. After 1980, India reversed itself and gradually dismantled state planning. India took many small steps towards privatization, liberalization, and free trade. As the state withdrew its economic controls, private property and freedom of contract strengthened. The country enjoyed high growth rates for more than 20 years.

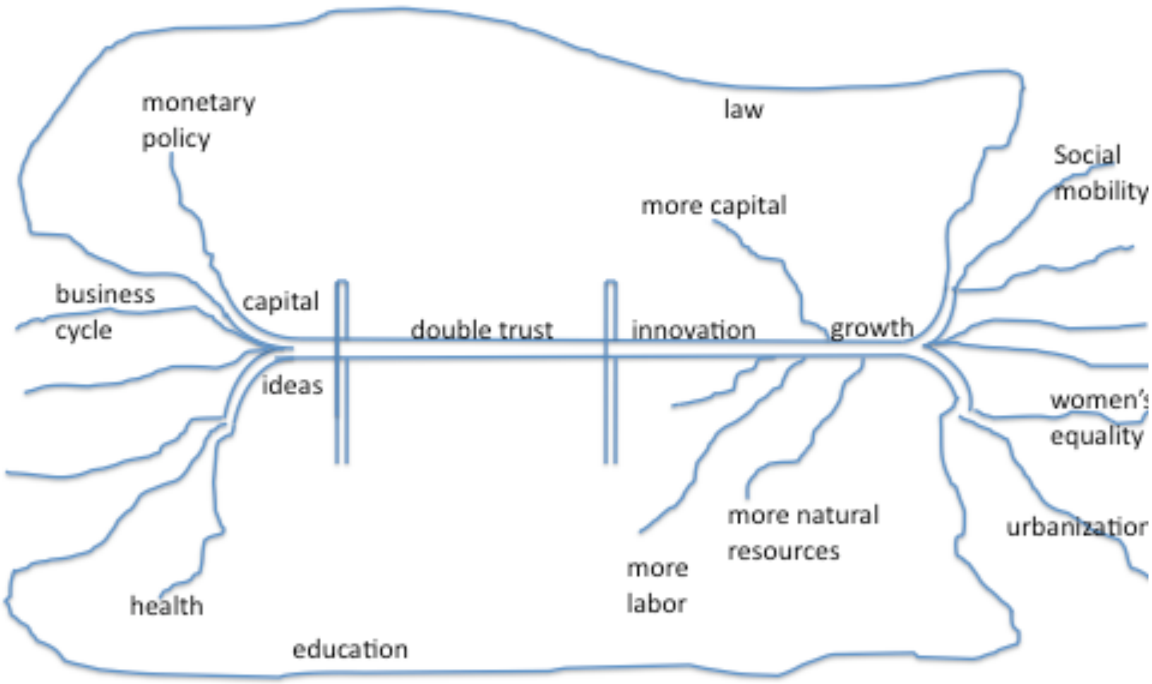
Turning to the Arab countries, economic growth and decline in the Arab oil countries precisely tracks the world price of oil, which overwhelms the effects of changes in law. So we turn to the non-oil Arab countries. Colonies like Algeria and dependencies like Jordan gained their independence in a process similar to sub-Saharan Africa that concluded in the 1950s and 1960s. The fully independent countries pursued socialist policies that increased the power of state administrators over the economy. Perhaps the administrative apparatus became less efficient and more corrupt with time. Weak protection of property and unreliable enforcement of contracts undoubtedly hampered economic growth. However, we cannot point to changes in effective law in this region that were so large and systematic as, say, in China or Africa.

Conclusion

Convergent growth unites the families of man and divergent growth undermines the common sense of humanity. The surprising power of compound growth will determine whether humanity is one or two. The gap in wealth between the richest and poorest nations is much larger today than ever before in history. The gap opened because the currently rich countries grew quickly, and the currently poor countries stagnated, not because the currently poor countries got poorer. Economic growth by one country does not usually cause economic decline by another country. Today, some poor countries are surging ahead and changing the ranking of countries by wealth, and others are languishing.

We want to interpret the data and explain the causes of growth. Two problems afflict the interpretation of evidence concerning economic growth. The first problem is to give the correct weight to law and the other factors affecting economic growth. Like pregnancy, innovation has one proximate cause and many effects. Uniting capital and ideas is the one proximate cause of economic innovation. Many factors converge on the proximate cause and many effects diverge from it, like roads and the Golden Gate Bridge depicted in Figure 2.9. Focusing on the double trust dilemma is like focusing on the traffic where it crosses the bridge. Complete explanation of an event necessarily includes its proximate cause, but identifying the proximate cause is not a complete explanation.

Figure 2.9. Innovation and the Golden Gate Bridge



The second problem of interpreting evidence is to distinguish between the effects of law on growth and the effects of growth on law. Thus Figure 2.9 shows "law" and "education" as causes and effects of innovation that loop around and feedback. To illustrate the problem concretely, social scientists try to measure the quality of law by the "rule of law index." It is a single number that combines perceptions of the incidence of crime, judicial quality and honesty, and the enforceability of contracts by courts and state agencies.[18] A nation's score on the rule of law index typically increases with its wealth, and every wealthy country

[18]This index is useful, although far from ideal for studying economic growth. The ideal index for testing our legal theory of economic growth would measure *effective* law as distinguished into three components: property, contracts, and business law. For an attempt to measure the effective law of property and contracts, and to use the index in cross-country regressions, see Bernhard Heitger, "Property Rights and Their Impact on the Wealth of Nations -- A Cross-Country Study," JKiel Working Paper No. 1163, Kiel Institute for World Economics (2003). His simultaneous regression model indicates that doubling the index of the quality of property rights leads to a more than doubling in per capita incomes.

has a high score.[19] Thus wealth *correlates* with lawfulness as measured by this index. But these facts could indicate that lawfulness *causes* wealth, or that wealth *causes* lawfulness. Perhaps lawfulness makes a country wealthy by encouraging business activity, or perhaps a wealthy country improves the law by spending more on it like automobiles and wine.

In general, causes and effects feed back on each other in social life and public policy cannot intervene to improve outcomes without breaking the causal circle. To illustrate, if wealth mostly causes lawfulness and not the contrary, then public policy to improve lawfulness cannot increase wealth, like a birthday party cannot make a person older. Understanding the direction of causation requires breaking aggregates like "law" into factors, some of which do not feedback. In this way, we create a virtuous circle of explanation, not a vicious circle.[20] For example, Chapter 6 explains that a law requiring Korean firms to appoint an independent director to the board caused an increase in the value of firms' stock.

In recent decades, dramatic events demarked new eras in the history of developing countries, notably decolonization in Africa, the collapse of communism in Eastern Europe, accession to the European Union, privatization and liberalization in Latin America, the dissolution of the communes and restoration of private business in China, and dismantling central planning in India. These events caused seismic changes in protection of property, enforcement of contracts, and effectiveness of business law. We hypothesize that these large changes in law caused economic growth and decline. In principle, statistical analysis can test this hypothesis by overcoming the problems of multiple causes and feedback.[21] This book draws upon those analyses whenever possible. In

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[19] Barro, R. (1997). Determinants of Economic Growth: A Cross-Country Empirical Study. Cambridge, MIT Press.

[20] Statistical estimation of simultaneous equations requires finding instruments that affect the circular movement of events without being affected by it.

[21] In technical terms, the task is to estimate simultaneous equations in several variables. Determining causation requires breaking down aggregate variables like GDP and the Rule of Law Index into smaller components, notably the protection of property, enforcement of contracts, and effective business law. Given small units, the next step is to examine the timing of events and exploit statistically the fact that causes precede their effects in time. For example, one could compare the dates for the dissolution of communes in different regions of China and the increase

practice, however, data is inadequate for proving the highest generalizations about law and growth, like oxygen is inadequate for climbing the highest mountains. Where statistics fall short, historians and most lawyers rely on qualitative evidence. (Some of our law school colleagues are uncomfortable with generalizing from imperfect data, although they are comfortable with generalizing from no data at all.)

As we will show, much statistical and qualitative evidence suggests that large changes in the protection of property, enforcement of contracts, and effectiveness of business law have large consequences for growth, and small change often have measurable consequences. Instead of the highest generalizations, the remaining chapters mostly explain the theory and describe the evidence from specific bodies of law. Some of this evidence achieves statistical rigor, and some of it achieves the lesser rigor of most historical and legal writing. As a whole, these chapters make a strong case for the hypothesis that law has decisively influenced growth in recent decades in developing countries. If we are right, then improvements in the protection of property, enforcement of contracts, and effective of business law can accelerate economic growth in most developing countries.

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in agricultural production. If the former is the cause of the latter, then the former should always precede the latter in each region.

Appendix: Table of Countries by Rule of Law Index and GDP Per Capita

Figure 2.10. Rule of Law and GDP per Capita

Country	rule of law index 2005	Rule of law Rank 2005	GDP per Capita ppp 2005	GDP ranking	Country	rule of law index 2005	Rule of law Rank 2005	GDP per Capita ppp 2005	GDP ranking
Switzerland	1.97	1	35,182	7	Namibia	-0.04	44	4,599	55
Denmark	1.94	2	33,654	12	Marocco	-0.08	45	3,554	62
Norway	1.94	2	47,538	1	Mali	-0.16	46	1,004	80
Finland	1.90	4	30,462	18	Senegal	-0.18	47	1,541	72
Austria	1.82	5	34,075	11	Bulgaria	-0.19	48	9,328	40
Singapore	1.81	6	41,479	4	Ghana	-0.21	49	1,160	78
Sweden	1.79	7	32,016	14	Madagascar	-0.22	50	834	84
Canada	1.75	8	34,972	8	Romania	-0.23	51	9,368	39
Australia	1.73	9	34,106	10	Malawi	-0.26	52	648	87
Germany	1.73	9	30,445	19	Viet Nam	-0.41	53	2,134	68
Netherlands	1.72	11	34,492	9	China	-0.42	54	4,088	58
United Kingdom	1.63	12	31,371	16	Tanzania	-0.42	54	933	81
Ireland	1.59	13	37,886	5	Syrian Arab Rep	-0.43	56	4,002	59
USA	1.52	14	41,813	3	Philippines	-0.44	57	2,956	65
HongKong	1.47	15	35,690	6	Brazil	-0.45	58	8,474	45
Belgium	1.43	16	31,699	15	Mexico	-0.51	59	11,387	35
Japan	1.35	17	30,290	20	Argentina	-0.55	60	10,815	37
France	1.33	18	30,591	17	Ukraine	-0.57	61	5,583	54
Chile	1.16	19	12,248	32	Zambia	-0.62	62	1,171	71
Spain	1.10	20	27,180	23	Mozambique	-0.68	63	677	86
Portugal	1.08	21	19,956	28	Uganda	-0.69	64	848	82
Taiwan	0.85	22	n.a.		Libya	-0.70	65	10,883	36
Korea, Rep	0.78	23	21,273	25	Algeria	-0.72	66	6,062	52
Czech Rep	0.74	24	20,280	27	Colombia	-0.72	66	5,867	53
Israel	0.73	25	22,627	24	Iran, Islamic Rep	-0.76	68	9,314	41
Kuweit	0.73	25	43,551	2	Peru	-0.78	69	6,452	50
Hungary	0.71	27	17,014	29	Ethiopia	-0.80	70	581	89
Greece	0.65	28	29,261	21	Niger	-0.85	71	602	88
United Arab Em	0.58	29	33,484	13	Indonesia	-0.86	72	3,209	64
Malaysia	0.56	30	11,678	34	Serbia	-0.86	72	8,644	43
Italy	0.52	31	27,750	22	Bangladesh	-0.87	74	1,068	79
Slovakia	0.44	32	15,881	30	Bolivia	-0.87	74	3,715	51
Jordan	0.43	33	4,342	57	Pakistan	-0.87	74	2,184	67
Uruguay	0.40	34	9,266	42	Ecuador	-0.88	77	6,737	49
Poland	0.33	35	13,535	31	Russian Federation	-0.88	77	11,858	33
Tunisia	0.22	36	6,382	51	Kenya	-0.99	79	1,375	75
Saudi Arabia	0.19	37	21,220	26	Papua New Guinea	-0.99	80	1,754	70
South Africa	0.18	38	8,478	44	Paraguay	-1.00	81	3,824	60
India	0.13	39	2,222	66	Thailand	-1.06	82	7,061	47
Thailand	0.10	40	7,061	48	Cameroon	-1.07	83	1,993	69
Turkey	0.08	41	7,786	46	Togo	-1.09	84	742	85
Sri Lanka	0.05	42	3,420	63	Cuba	-1.13	85	n.a.	
Egypt	0.03	43	4,574	56	Venezuela	-1.26	86	9,877	38

Chad	-1.33	87	1,471	74
Nigeria	-1.41	88	1,520	73
Liberia	-1.46	89	312	90
Myanmar	-1.60	90	838	83
Sudan	-1.61	91	1,711	71
Zimbabwe	-1.62	92	n.a.	
Haiti	-1.70	93	1,178	76
Iraq	-1.88	94	n.a.	
Afghanistan	-1.89	95	n.a.	

Sources: World Bank Rule of Law 2008 and World Developing Indicators 2008

Chapter 3

Make or Take – The Property Principle

Artisans and merchants in Bukhara on the “Silk Road” enriched themselves and their city, until 1220 when it opened its gates to an over-powering army sent by Ghengis Khan. The Mongolian army entered the city, stripped its wealth, enslaved the useful population, executed the rest, and reduced the city to a gravel pit. Since the end of World War II, no foreign army has robbed a great city of its treasures and carried them home. However, the harshest critics regard modern business as camouflaged plunder, especially global business. Thus a recent book asserts that “rule of law” rhetoric camouflages the plunder of resources by foreign corporations in poorer countries.[1] Similarly, Marxism’s core – the labor theory of value -- holds that working people make the wealth and the rich take it from them.

Against this view, many economists see the global economy as the greatest engine of wealth creation in the world’s history. It lifts the living standard of workers by lifting their wages. Countries remain poor when the global economy bypasses them, not when it exploits them. The global economy has various faults -- unevenness, instability, environmental spillovers -- but robbing the poor is not one of them.

Which view is more accurate? Do wealthy people today resemble the artisans who made Budkhara’s wealth or the Mongolian soldiers who took it? People create wealth by investing time, effort, and resources in production. Entrepreneurs, industrialists, farmers, laborers, shopkeepers, doctors, scientists, programmers, and teachers mostly make wealth. Conversely, people take wealth by guile, force, and power. Gangsters, frauds, stock manipulators, commissars, aristocrats, autocrats, monopolists, cartels, and politicians take wealth from others.

In the balance between making and taking, much depends on law. Good law aligns productivity and ownership of wealth. When owners get wealth by

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[1] Ugo Mattei and Laura Nader, Plunder: When the Rule of Law Is Illegal (Wiley-Blackwell, 2008).

making it, law spurs production. Most rich nations today became wealthy because law and social norms channeled the best efforts of their citizens into making wealth. Bad law aligns owning and taking wealth. When owners get wealth by taking it from others, law spurs redistribution. Most poor nations today stay that way because law and social norms channel too much effort of people into taking wealth from others. Taking less from entrepreneurs in these countries would cause their economies to grow, like catching less fish in the Peruvian anchovy fishery would cause the stock of fish to grow.[2] This chapter uses the distinction between making and taking to formulate a general principle of law for economic growth, applies it to capital and labor, and relates it to inequality and social justice.

Property Principle

How much encouragement should law and policy give to economic innovators? Some hypothetical numbers suggest an answer that Figure 3.1 depicts. Assume that an innovator has a new idea. If the new idea succeeds, it will create value of 100 for society. Many innovators try and few succeed. Recent U.S. data suggests that 40% of new businesses survive and 60% disappear within four years.[3] So assume that the new idea has a 40% chance of surviving. Discounting social value of 100 by the survival rate of 40% yields the expected value of the innovation to society of 40.

Now lets calculate the amount of this value that goes to the innovator. Innovating was famously described as “creative destruction”[4]— new organizations destroy old organizations, new markets destroy old markets, and new technologies destroy old technologies. In the creative phase of an

[2] All the world’s fisheries are beyond the maximum sustainable yield. For theory and data, see Tom Tietenberg, Environmental and Natural Resource Economics (3rd: Harper, Collins, 1992).

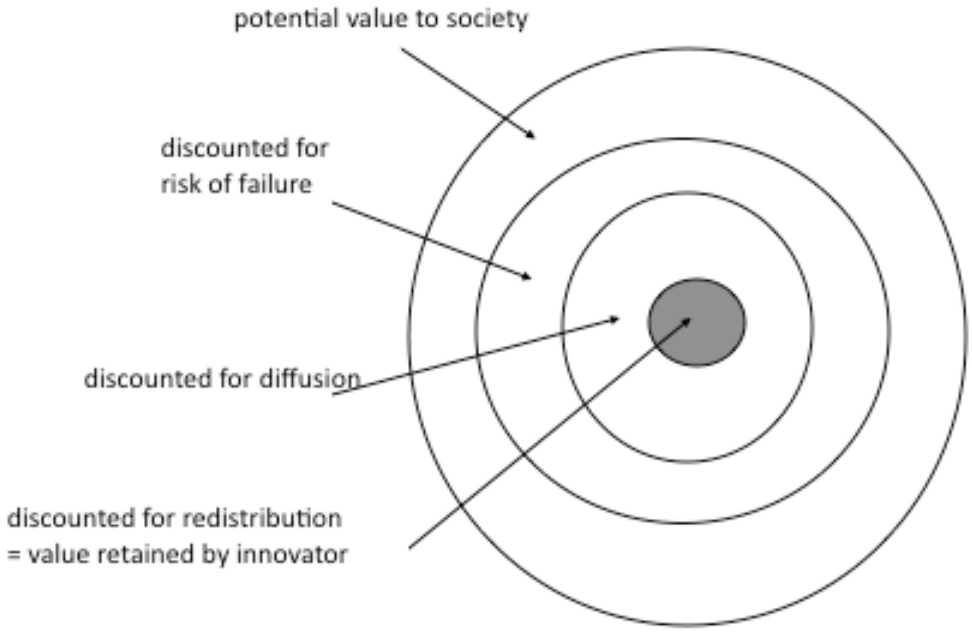
[3] 44% of U.S. businesses started in the 1990s still existed 4 years afterwards. See Knap, A. E. (2005). "Survival and longevity in the Business Employment Dynamics data." Bureau of Labor Statistics of the U.S. Department of Labor. The number given by Dun and Bradstreet is 37% as cited in “Some of the Reasons Why Business Fail and How to Avoid Them,” Entrepreneur Weekly, Issue 36, 3-10-96.

[4] Joseph A. Schumpeter, Capitalism, Socialism and Democracy, 5th ed. (London: Unwin University Books, 1966).

innovation, the innovator often enriches himself by earning extraordinary profits. Thus Lakshmi Mittal made a vast fortune by reorganizing moribund steel plants, and the inventor of the Rubik cube made a small fortune by marketing an amusing toy. In the period of extraordinary profits, many entrepreneurs save money in order to remain wealthy later.[5] Next, in the assimilation phase, the new idea leaks into the public sphere. The innovator's profit rate falls as the value of the innovation disperses to competitors. However, the innovation's diffusion causes competing and complementary businesses to increase their productivity and profitability. The industry eventually settles into equilibrium, like the crowd eventually stops yelling after a goal is scored at a football match. In the death phase, a new innovation destroys the old one's value, diverts the industry away from equilibrium, and sends it in a different direction that begins a new cycle.

[5] In Silicon Valley, the founders of a startup company begin with an unbalanced portfolio consisting of the firm's stock. As founders, they have private information that makes them value the stock more than any outsider. After the company succeeds, outsiders value its stock more, and the founders become willing to sell their stock in order to hedge against the remaining risk that the company will not succeed. Eventually the founders sell much of their stock to the public, or sell all of it to a public company, and exit from the business. At this point they have portfolio containing many different assets. By definition, a diversified portfolio earns the ordinary rate of return.

Fig 3.1. Value of Innovation



In the creative phase the innovator's share of the innovation's economic value is large – to simplify, say the innovator gets 100% and others get 0%; in the diffusion phase the innovator's share of the innovation's economic value eventually approaches 0% and the share of others approaches 100%; and in the death phrase the innovation loses its value to anyone. Over the full cycle, the innovator generally earns much less than the innovation's economic value to society, say 50%. So, recalling that the innovation's expected value is 40, we assume that the innovator expects to earn 20 over the innovation's life cycle and others also expect to earn 20.

The innovator, however, cannot expect to keep the 20 that he earns. In many countries, a combination of taxes, license fees, monopoly prices, regulations, bribes, protection money, and theft redistributes the innovator's earnings to others. Redistribution leaves, say, 25% for the innovator or 5, and transfers 75% to others or 15.

To summarize, an innovation potentially worth 100 is discounted for risk of failure (60%), diffusion (50%), and redistribution (75%), yielding an expected payoff of 5 to the innovator. This is not much compensation for the innovator's risk and anxiety. To justify anyone trying something new, the innovator must keep enough of what he makes to offset the discount for failure, diffusion, and redistribution. Since successful innovators enrich others even more than themselves, they deserve encouragement. To spur innovation, the state should adjust its policies and laws in order to reward innovators more than in our numerical example, especially laws affecting diffusion and redistribution.

The state has significant control over diffusion through laws of trade secrets, employment, competition, patents, and copyright. The state has significant control over redistribution through laws concerning taxes, license fees, regulations, monopoly, finance, corporations, bankruptcy, bribes, intimidation, and theft. Subsequent chapters analyze these laws. For now, we develop a very general principle. The high risk of innovation to the innovator, and the great benefits of innovation to society, suggest that innovators who make wealth should keep much of it. We call this proposition the *property principle for innovation.* When this proposition is implemented, greed overcomes fear, and people enrich others by enriching themselves.

What does "keep much of it" mean precisely? Does the property principle require innovators who make wealth to keep 50%, 25%, or 10%? Innovation causes sustained growth, which benefits society so much that we simplify and focus exclusively on it. Thus we can interpret the property principle to mean that *law and policy should enable innovators to keep the amount of wealth that maximizes the economy's sustained growth*. For example, if research shows that the economy grows faster when laws enable innovators to keep 25% of the social value of their innovations instead of 15%, then the property principle prefers the former laws.

Given this simplification, the property principle for innovation poses an empirical question: To cause the economy to grow at its maximum rate, how much of the wealth that an innovation creates for society should the innovator keep? This book proceeds by analyzing specific bodies of law – property, contracts, banking, corporations, and so forth. Subsequent researchers can try to aggregate the findings from specific laws into an average for the whole economy, like 25%.

Few people will object to small producers keeping much of the value of their innovations, like Indian farmers adapting "miracle rice" to local conditions, or Beijing shopkeepers discovering that their customers will buy coffee, or a Malaysian converting a craft shop into a textile factory. What about rich people? A few stars in the Milky Way are brightest, and a few entrepreneurs are richest. The five richest people in the world in 2008 were, in order, Warren Buffett, Carlos Slim, William Gates, Lakshmi Mittal, and Mukesh Ambanai.[6] They averaged approximately $50 billion in wealth.[7] If you invested that much money in no-risk bonds, you would have to spend approximately $200,000 per minute to keep your wealth from growing larger.[8] Should law and policy allow the super-rich to keep much of what they make?

Besides great wealth, these five people have something else in common: They did not inherit vast agricultural estates like 19th century Indian maharajas, or own desert sands that float on oil like Saudi princes, or divert taxes into Swiss bank accounts like African dictators, or collect massive bailouts from taxpayers like American investment banks. Rather, they created extraordinarily profitable businesses.[9] To earn extraordinary profits, improve an Indian steel plant's organization, supply mobile phone service to ordinary Mexicans, develop a computer operating system that becomes a world standard, or identify and invest in the companies that will grow fastest.

For all five, a significant portion of their wealth apparently came from innovations whose value spilled over and benefitted others. Presumably they

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[6] Forbes magazine annually estimates the wealth of the world's richest people and ranks them.
[7] Forbes magazine annually estimates the wealth of the world's richest people and ranks them.
[8] $50 billion invested at 4% per year yields enough interest to spend $200,000 per minute for a year.
[9] Three of the five started life relatively poor and made all of their wealth. Two of the five started life with modest wealth and then added vastly to it. Forbes magazine's list of people with at least $1 billion in personal wealth in 2006 consisted of 746 people, most of whom made their money through business.

also gained from unproductive sources of wealth like natural monopoly, political patronage, or regulatory favoritism. We can only guess at the combination of productive and non-productive sources of their wealth. In any case, Lakshmi Mittal's wealth in 2008 was roughly $50 billion, which came from reorganizing the manufacturing and marketing of steel around the world. If much of it came from innovations, then, instead of taking $50 billion from others, he presumably created more for others than he gained for himself. This one person's value to society apparently exceeded $50 billion. Such is the unimaginable power of innovation.

According to the property principle for innovation, the law should enable innovators, including the super-rich, to keep the amount that will cause the maximum rate of sustained growth in the economy. For maximum growth, creative and successful entrepreneurs like Lakshmi Mittal should control the flow of capital to industries, not civil servants, bureaucrats, or intellectuals. To control capital, people like Lakshmi Mittal should keep much of what they make in so far as they reinvest it. Various laws can promote this end. For example, the tax system can impose no tax on income that is invested and high taxes on income that is consumed.[10] As this example suggests, we will focus on laws that enable entrepreneurs to keep the capital that they invest in growing the economy.

Besides innovation, people make wealth in conventional businesses. Instead of creativity, conventional business mostly requires effort and judgment. Figure 3.1 shrinks the innovator's share of social value by discounting for risk, diffusion, and redistribution. The situation is different for conventional business. In conventional business, the risk of failure is smaller and diffusion is less.[11] However, redistribution from taxes, licenses, regulations, bribes, protection money, etc. is very high in some countries. In terms of our numerical example, a conventional producer who makes 100 for society discounts little for risk and

[10] Thus a "progressive consumption tax" can be implemented in countries like the U.S. by allowing individuals to deduct their investments from taxable income. The U.S. tax system goes some way in this direction by giving investment tax credits at particular times to particular industries, and by allowing individuals to deduct investments in retirement accounts and postpone the tax on the income earned by these accounts until it is withdrawn from them.

[11] Conventional business obviously involves fewer unknowns than innovative businesses. Also conventional businesses have less valuable private information to diffuse to competitors.

diffusion, and discounts, say, 75% for redistribution, yielding a payoff of 25 to the producer.

To encourage effort and judgment, conventional producers need to keep much of what they make, although not as much as innovators. What does "keep much of what they make" mean precisely? Conventional producers increase the wealth of a nation by making the most wealth possible from available resources, not by innovating. In economic jargon, this is a problem of "static efficiency," whereas increasing the rate of sustainable growth is a problem of "dynamic efficiency." So conventional producers should keep the amount that causes them to maximize the nation's wealth from available resources. Economic data is extensive on static efficiency – more than on dynamic efficiency – so we can draw on many studies concerning taxes, regulations, and other laws.[12] However, we must pass by this attractive inquiry like a sideshow at the circus in order to advance our main theme of innovation and growth.

We have discussed the best incentives for conventional producers and innovators. Combining them yields the *generalized property principle: People who make wealth should keep much of it*. Conventional producers should keep the amount that maximizes the wealth of society, and innovators should keep the amount that maximizes the sustainable rate of growth of wealth. In economic jargon, law for conventional producers should aim for "static efficiency" and law for innovators should aim for "dynamic efficiency." This principle implies that innovators, who are our main concern, should usually keep more than conventional producers because innovators face greater risks and benefit others more.

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[12] We cannot summarize this massive literature, but we cite two works on its origins. Perhaps the beginning of modern literature on static efficiency is Ramsey's mathematical paper showing how the state can minimize the burden of collecting any given amount of tax revenues. (Answer: Tax goods inversely proportional to the elasticity of demand for them.) Frank P. Ramsey, "A mathematical Theory of Saving," Economic Journal 38 (1928): 543-559. Similarly, the study of the burden of regulation accelerated after Stigler showed that many regulations produce monopoly profits for concentrated industries, rather than serving the public good. George Stigler, The Citizen and the State (Chicago: University of Chicago Press, 1975).

Are Workers Exploited?

Having discussed entrepreneurs, now we turn to workers in order to compare their pay to the value of what they make. To be concrete, consider this chain of transactions: A factory in Mumbai (formerly Bombay) makes cloth from Egyptian cotton and German dyes. It sells the cloth to a factory in Kolkata (formerly Calcutta). A seamstress in the Kolkata factory uses the cloth, a pattern, a sewing machine, a building, and electricity to sew jackets. She sews 10 jackets per week and her weekly wages equals 5,000 rupees, which buys enough on local markets in India to survive. 5,000 rupees exchange at international rates for roughly $10 U.S., which does not buy enough on markets in the U.S. to survive.[13] The Kolkata factory sells the jackets to an Italian wholesaler for $50 each. Does the factory owner keep most of the wealth that the seamstress makes, or does the factory owner pay most of it to her in wages?

On this question, many commentators disagree with most economists. Among the opponents of modern economics, we will reference Karl Marx because of the purity of his thought and his continuing influence. Marx remains an icon in some universities in developing countries, although seldom in economics departments. According to Marx's "labor theory of value," workers make everything and capitalists take all of it except a survival wage.[14] While the Kolkata seamstress gets paid 5,000 rupees per week, Marxist theory holds that the value of her labor is much higher, say 25,000 rupees per week. The difference between the value of what she makes and her pay – in this example, 20,000 rupees or approximately $40 weekly – measures her exploitation.

Marx thought that private property enables owners to exploit workers, so he proposed a simple prescription to end exploitation:

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[13] Textile workers in Kolkata in 2008 earn on average somewhat less than $2 per day at international exchange rates. Instead of using international exchange rates, wages in different countries can be compared by their local purchasing power, which is more relevant to comparing the welfare of workers.

[14] Marx made three predictions in the form of "laws": Capitalist economic development would cause rising production, falling wages, and falling profits. If production rises, how can both wages and profits fall? Where is the money going? Robert Solow, Nobel laureate in economics, remarked that, from a logical viewpoint, Marx proposed one law too many. CITE

> "[T]he theory of the Communists may be summed up in a single sentence: Abolition of private property."[15]

Like holes in socks, the weaknesses in ideas show with time. When the communists abolished private ownership of farms and factories in the 20th century, the results varied from ghastly to grey. Collectivizing agriculture contributed to famine in Russia and China that apparently killed more people than World War II.[16] Communists nationalized factories and put politicians and bureaucrats in charge. State factories produced a monotonous stream of low quality goods that people would not buy who had other choices. Instead of ending history as predicted by Marx, socialism in Eastern Europe ended in cynical jokes, such as "They pretend to pay us and we pretend to work."

Modern economists use a different idea than Marx to parse the contributions of different people in a complex economy. To isolate one person's contribution in a production string, find the increase in the product's market value caused by that person's participation in the production process. If the Kolkata seamstress uses inputs that cost $49 per jacket, and the finished jacket sells for $50, she adds $1 in value. If she sews 10 jackets per week, then $10 per week is her "marginal value product."[17]

One kind of exploitation consists in paying someone less than the value of what she makes. The seamstress in the preceding example gets paid 5,000 rupees per week and, according to marginal productivity theory, the value of what she makes is 5,000 rupees per week. So, according to marginal productivity theory, she is not exploited.

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[15] Karl Marx and Friedrich Engels, The Communist Manifesto (1848).

[16] The Soviet Union apparently suffered approximately 10 million military deaths and 12 million civilian deaths in WWII. World War II killed approximately 4 million Chinese military and 6 million Chinese civilians. So the combined total of war deaths is around 30 million. Robert Conquest estimates famine deaths in the Soviet Union as 11 million from 1926 to 1937. China's Great Leap Forward apparently resulted in around 30 million deaths. So the combined total of famine deaths is over 40 million. Estimates of deaths vary significantly by source. Collectivization of agriculture occurred in a context of other disastrous policies that contributed to the deaths, such as forcing farmers to neglect agriculture and work in village industries in China. For a website that compares estimates, see "Source List and Detailed Death Tolls for the Twentieth Century Hemoclysm", http://users.erols.com/mwhite28/warstat1.htm. For a list of casualties by country in World War II, see "World War II casualties," Wikipedia, at http://en.wikipedia.org/wiki/List_of_World_War_II_casualties_by_country#Casualties_by_country.

[17] Her marginal *physical* product is 10 jackets, each of which has a market *value* of $1.

What would cause her pay to equal her marginal product? According to economic theory, competition among employers to hire able employees eliminates exploitation that consists in paying someone less than the value of what she makes.[18] Keeping wages below marginal productivity normally requires thwarting competition among employers for employees, for example by forming cartels.[19] Employer cartels seldom form in large cities like Kolkata because they require too much cooperation among too many employers. In addition, if the jurisdiction has effective antitrust laws, the conspirators risk fines or imprisonment. So we expect workers in cities like Kolkata to get paid approximately their marginal product.

We have contrasted Marx's theory of exploitation and the economists' theory of marginal productivity. Marx's theory holds that workers make much of value and capitalists take it from them. According to this view, the Kolkata seamstress is highly productive and badly exploited. In contrast, marginal productivity theory holds that most people in poor countries make little of value. According to this view, the Kolkata seamstress gets paid approximately the value of what she makes. The two theories disagree over whether poverty's cause among workers is severe exploitation or low productivity.

The structure of labor markets determines which theory is approximately true. Competition roughly equates wages and marginal product. The intensity of competition increases with the number of competitors, which increases with the size of the labor market and the mobility of workers. In large cities, or in countries where people can move freely, marginal productivity theory is approximately correct and the pay of workers roughly equals the value of what

[18] Here is how it works. The employer pays the seamstress her wage and sells her product. If her product exceeds her wage, the employer earns a profit from her labor. Competition will prevent him from doing so. If her employer pays her a wage that is below the value of her product, another employer can profit by inducing her to change jobs at a slightly higher wage. Competition among employers should bid up her wage until it approaches her marginal value product, which is $10 per week.

[19] For a Marxist theory that focuses on monopoly power, see P. A. Baran and P. M. Sweezy, Monopoly capital; an essay on the American economic and social order (New York, Monthly Review Press, 1966).

they produce. In contrast, the absence of competition for workers causes exploitation.

Marginal productivity theory easily beats Marx's labor theory as a simple generalization about the modern world. However, modern labor economics is much more complicated than the contrast between Marx and marginal productivity theory. It encompasses many departures from marginal productivity theory such as cartels, regulations, tariffs, unions, minimum wage legislation, and executive compensation in public companies. It also encompasses a compelling political issue in many countries -- discriminatory practices that favor men over women, high caste over low caste, the powerful ethnicity or tribe or religious group in power over the powerless one.[20] These theories allow for earnings below marginal product as with discrimination, or earnings above marginal produce as with executives in public companies and unionized workers.

Instead of pursuing these topics, however, we must return to our main theme of innovation and growth. What can the Kolkata seamstress do to increase her wages? According to marginal productivity theory, she needs to increase her productivity. She might apply to work in a foreign-owned factory where productivity and wages are higher, or emigrate to work in an oil-rich country. Or she might get technical training in a public school or one of the many private schools in Kolkata's poor neighborhoods. Basic education and technical training significantly increases productivity, and the state should assuredly use tax revenues. If she is like many workers, however, she will remain in her job and wait for economic growth to raise everyone's wages, like the tide lifting all the boats in the harbor.

In an innovative economy, she will not wait long. Robert Allen collected data on money wages in various trades (masons, farm laborers, building laborers, etc.) in various countries and eras, and he also collected data on the prices of staples (bread, clothes, housing, etc.). He uncovered some surprising facts, e.g. medieval northern Europeans spent roughly 30% of their income on

[20]For an summary of economic theories of discrimination as market imperfections, see Chapter 14 of Robert Cooter's The Strategic Constitution (Princeton, 2000),

bread and 20% on beer. He combined the data on wages and prices to measure the purchasing power or "real wages".[21] Allen found that real wages changed little by time and place in Europe from 1250 to 1450, and then real wages decreased from 1450 until 1650. After 1815, real wages began to increase in Europe, and the rate of increase accelerated after 1850.[22] Defining "poverty" as having enough money to buy the staples needed for existence, he calculated that construction workers in three European cities were living in poverty in 1820. Their real wages increased over the 19th century by more than 100% in London and Amsterdam, and by more than 50% in Paris. By World War I, wages had increased to two or three times the poverty level.[23] The rising productivity of workers apparently resulted in rising wages, as predicted by marginal productivity theory.

Contemporary international data from developing countries confirms the connection between productivity and real wages in developing countries. The numbers that we pieced together in Figure 3.2 require cautious interpretation, but the overall pattern confirms that real wages and labor productivity move together. Averaging roughly over the last decade, real wages in China increased annually by 10% or 170% in a decade, real wages in India increased annually by 2.5% or 30% in a decade, and real wages in Brazil *de*creased by 1% in Brazil or 16% in a decade. The wage increases in China and India are commensurate with productivity increases, whereas wages declined moderately in Brazil while productivity increased moderately. (Labor productivity is not the *only* determinant of real wages.[24]) A picture of current global developments of wages resembles

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[21] To be precise, he first calculates wages in terms of grams of silver per day, and then deflates by prices of a basket of consumer goods with roughly 70% food (mostly food). He used this consumer basket in 1820 to define the poverty line. Naturally, the data gets much better in the 19th centuries, so we have more confidence in the more recent results.

[22] R. Allen, The Great Divergence in European Wages www.economics.ox.ac.uk/Members/robert.allen/WagesFiles/wagesnew2.pdf (last visited October 2008)

[23] R. Allen (2008) http://www.economics.ox.ac.uk/Members/robert.allen/WagesPrices.htm, July 2008

[24] For example, when the business cycle turns down and causes unemployment, the ratio of capital to employed workers rises, so labor productivity can rise. Also, a large increase in the labor supply due to immigration can bid wages down while productivity is rising. From the three

Europe and the USA in the 19th century when real wages followed economic growth.

Figure 3.2. Productivity and Real Wage Increases by Country

Country (time period considered)	Average annual increase of labor productivity (GDP per person employed) in per cent[a]	Average annual increase of monthly real wages in per cent[b]
China (1995-2003)	9,15	10,36
Estonia (1995-2004)	4,99	4,66
Hungary (2000-2005)	4,55	3,19[25]
India[c] (1994-2005)	4,78	2,68
Hungary (2000-2005)	4,55	3,19
Ireland (2000-2005)	3,97	2,47[3]
Korea Rep. (1995-2005)	3,71	3,12
Egypt (1995-2003)	3,33	3,40
Poland (2000-2005)	3,11	1,92[3]
Singapore (1995-2005)	2,83	3,01
UK (1995-2004)	2,45	1,85
USA (1995-2004)	2,42	0,05
Argentina (1995-2004)	0,95	- 2,20
Brazil (1995-2003)	0,94	- 1,96
Mexico (2000-2005)	0,06	0,98[d]
Zimbabwe (1995-2001)	-5,93	- 1,74

[a]Own calculations from World Development Indicators 2008
[b]Own calculations from ILO, Key Indicators of Labor Markets KILM), 5th Ed. 2007 , KILM 15, Manufacturing Wage Indeces, KILM 16, Occupational Wage and Earning Indices, http://kilm.ilo.org/2007/register/
[c]Data for India from C,P. Chandrachekar and J. Gosh (2008) Recent Employment Trends in India, real wages are wages of regular male workers at 1993/94 constant prices.
[d]hourly wages.

Who takes?

Having discussed making wealth, we turn to taking it. People who obstruct growth by taking wealth from others include criminal gangs, scheming managers, appropriating bankers, dishonest accountants, corrupt unions, overbearing tax collectors, bribe-seekers, nepotistic regulators, expropriating politicians, subsidized farmers, and cartels and monopolists of all kinds. Whereas innovators earn *less* than the wealth that they make for society, businesses that take wealth from others earn *more.* We will distinguish several

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Latin American countries in Figure 3.2, slow growth in the region seems to have affected wages more negatively than other sources of income.
[25] hourly wages

ways to take wealth from others -- illegally through theft and bribes, legally through state subsidies and regulations, and by forming cartels and creating monopolies.

Theft and Bribes

Mineral resources are the most saleable assets in many poor countries. After communism collapsed in Russia in 1989, gangster-capitalists looted the state's mineral resources and sold them abroad. The richest 300 people in the world in 2003, according to Forbes Magazine, included 16 Russians, 11 of whom made their wealth in oil. Mikhail Khodorkovsky, the richest of the gangster capitalists, was arrested in 2005, sentenced to nine years in prison, and the Russian state expropriated his company. Commentators disagree about whether Khodorkovsky behaved worse or better than the state officials who jailed him and seized his business.[26]

Khodorkovsky was a private businessman, whereas some mineral thieves are government officials. Forbes magazine makes an annual guess of the world's 10 richest "kings, queens, and dictators." Most people on the list rule oil-rich countries (but not all -- the 2006 list includes the Queen of England and Fidel Castro). To illustrate how power makes politicians rich, after oil was discovered in 1995 in Equatorial Guinea, its ruler, Teodoro Obiang, and his government deposited $700 million in private accounts in the Riggs Bank of Washington, D.C. These facts surfaced when regulators fined the bank for not reporting possible money laundering. Similarly, Sese Seku Mobutu, Congo's president from 1960-97, held billions of dollars in Swiss Bank accounts that he had ransacked from his country.[27]

While oil-rich government officials mostly take their wealth from the state, other government officials take wealth from private citizens. Most constitutions require the state to compensate private owners for taking their property. Some

[26] Khodorkovsky's opponents believe that he was correctly convicted for his criminal actions related to the privatization of state assets during the 1990s. Khodorkovsky's supporters, however, believe that Vladimir Putin, the Russian President, was retaliating for Khodorkovsky's support of political groups that oppose the government's policies.

[27] For the whereabouts of Mobutu's billions, see New Statesman, July 26. 2007. CHECK CITE

politicians, however, are above the constitution. When power outweighs law, politicians can expropriate private citizens, especially their enemies. In 2000 President Mugabe of Zimbabwe encouraged his political allies to expropriate the farms of white citizens. The Zimbabwe constitution prohibited the state from taking land without compensation, so Mugabe amended the constitution.[28]

Instead of stealing oil or land, however, many corrupt officials extort small sums of money from people who need something from them. The officials may demand a bribe for a license, performance of a duty, over-looking a regulatory violation or tax liability, obtaining a state document, granting a variance, or holding a hearing. A subsequent chapter on crime considers the "corruption tax" – the cost of pervasive petty bribes imposed on businesses. The corruption tax slows growth like an under-inflated tire slows an automobile.

Subsidies and Regulations

We discussed illegal ways to take wealth from others, notably stealing and extracting bribes. Alternatively, instead of breaking the law, people can use law to take wealth from others. Thus privileged industries and firms extract subsidies from the state that other people ultimately pay. Farmers subsidized city workers in Peron's Argentina and Mao's China, whereas city workers subsidize farmers in the U.S. and the European Union. In Tanzania protective tariffs kept a company in the business of assembling bicycles from imported components that cost more than importing assembled bicycles.[29] One country or another subsidizes telephones, banking, railroads, electricity, steel manufacturing, airplane flights,

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[28] The amendment shifted the responsibility for compensating white farmers from Zimbabwe to its former colonial power, Britain. In the end, no one compensated them, most of them were robbed and exiled, and some of them were murdered. For a popular memoir of these events, see Peter Godwin, When a Crocodile Eats the Sun: A memoir of Africa (New York: Little, Brown and company, 2006). For facts about compensation, see Pan, E. (2005). Africa: Mugabe's Zimbabwe. http://www.cfr.org/publication/7723/africa.html, Council on Foreign Relations.

[29] Other studies have found goods assembled in developing countries whose imported components cost more than importing the assembled good. The validity of these results has also been challenged. For a survey see Henry J. Bruton (1998), "A Reconsideration of Import Substitution," Journal of Economic Literature, Vol. XXXVI pages 903–936

windmills, coalmines, southern industries, northern industries, core industries, export industries, green industries, minority businesses, majority businesses, and so forth.

Subsidies are part of the government's budget. Alternatively, special interests often disguise subsidies as when lawyers in silk suits riddle tax codes with special provisions. To disguise tax subsidies, loopholes are called "incentives" that allegedly serve national goals like oil exploration, energy conservation, self-sufficiency in food, small business development, small-scale farming, and home ownership. A clever accountant smiles slyly when he says to his client, "There are no tax loopholes, only tax incentives."

Besides tax loopholes, the state directs money from citizens to its favorites by restricting competition. To get rich by restricting competition, obtain an exclusive license to operate cabs at an international airport, sell road signs to a city through closed bidding, own all of a country's electro-magnetic spectrum for mobile phones, or build cars behind tariff walls in a country with two automobile plants. One country or another requires farmers to sell coffee beans exclusively to a state exporter at prices below world market prices, forbids selling aspirin without a pharmaceutical license, prohibits optometrists and lawyers from advertising their prices, requires banks to lend to political favorites at below-market rates, and forbids dry cleaners from locating within a mile of each other.

Restrictions on competition are usually disguised through licenses, charters, permits, restrictions, regulations, orders, variances, privileges, and government contracts. By such devices, administrators and politicians determine where a factory can locate, what goods it can produce, to whom it must sell, and whom it employs. These devices shield the friends of politicians from competition, and the friends repay the politicians with donations, bribes, and electoral support. Political power can restrict competition and create market power for politically favored factions of all kinds – entrepreneurs, unions, the upper class, the working class, the ethnic majority, the ethnic minority, men, women, optometrists, pharmacists, defense contractors, religious schools, state schools, to name a few. The beneficiaries of these restrictions justify them in the name of fairness, employment, economic growth, national security, equal opportunity, public health, consumer protection, pollution abatement, and so on.

Cartels and Monopolies

Whenever executives in competing firms talk to each other, consumers are in imperil. Talk leads to constraints on trade -- price setting and exclusive territories, like European colonialists dividing Africa in the 19th century. To combat this problem, most countries enacted statutes in the 20th century that prohibit firms from collaborating to set prices or divide territory. If enforced impartially, these statues can benefit the public, but administering them is often politicized. A subsequent chapter, which discusses antitrust law in more detail, explains that the simplest and most reliable antitrust policy for most sectors of an economy is free trade.

While antitrust law forbids private businesses from organizing cartels, governments routinely do so. The firms in an industry sometimes capture its regulator, who operates a cartel on their behalf. To illustrate, a plane flight from Boston to Washington in 1980 cost about twice as much as a flight of similar distance from San Francisco to San Diego, because the federal government regulated air travel between states and did not regulate air travel within states. On Boston-to-Washington flights that cross state lines, federal law allowed the presidents of competing airlines to act like a cartel by, say, agreeing to ask their regulator to increase the fare. On San-Francisco-to-San-Diego flights that remain inside California, the presidents of competing airlines who had such a discussion risked fines or imprisonment under federal antitrust laws.

We have discussed three harmful ways that people take wealth from each other: illegally through theft and bribes, legally through state subsidies and regulations, and by monopolies and cartels that can be legal or illegal. Whereas innovators earn *less* than the wealth that they make for society, businesses that take wealth from others earn *more.* So, laws that encourage people to make wealth enrich the nation, whereas laws that encourage people to take wealth impoverish the natiom. Many business fortunes come from a combination of innovation and power, and law determines the balance between making and taking.

Inequality

We have discussed ways that people get rich by taking wealth from others. Besides taking from the poor to give to the powerful, the state also takes from the rich to give to the poor. Equality-increasing redistribution is widely admired and sometimes implemented. Does equality-increasing redistribution contradict the property principle, according to which the people who make wealth should keep much of it? Next we consider whether or not the property principle is fair.

Fairness and Justice

A famous philosopher, Robert Nozick, argued that it is unfair for people who make wealth to keep much of it. Instead, fairness requires them to keep *all* of it. People should keep all the wealth that they make, according to Nozick, because it is *theirs*. Taking their wealth away from them is unfair, including taxation for poverty relief, equality, and social goods.[30]

In contrast, theories of social justice usually regard wealth as part of a comprehensive social system that should be fair as a whole. In a fair system, a person is not automatically entitled to keep what he makes. Besides productivity, a fair system takes the needs of people into account. According to this view, a person with greater needs may fairly claim part of what someone else makes. Redistributive taxes ideally give people their fair share, according to this view, rather than taking away some of what belongs to others.[31]

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[30] Robert Nozick, Anarchy, State, and Utopia (New York: Basic Books, 1974).

[31] Murphy, L. B. and T. Nagel (2002). The Myth of Ownership: Taxes and Justice. Oxford and New York, Oxford University Press. While we do not agree with the thesis that ownership is a myth, we commend this book for a remarkable interweaving of philosophy and economics. They write

> "…Individual citizens don't own anything except through laws that are enacted and enforced by the state. Therefore, the issues of taxation are not about how the state should appropriate and distribute what its citizens already own, but about how it should allow ownership to be determined."

Do social justice theories contradict the property principle? The property principle for innovation has the same social justification as patents. To encourage inventions, the state grants the inventor a temporary monopoly in the form of a patent, which results in higher prices for buyers during the patent's lifetime. Higher prices yield extra-ordinary profits, which encourages inventors. Patents are justified in so far as the gain from more inventions outweighs the temporary disadvantage of higher prices. Up to a point, patent protection increases growth, which increases wages for workers and tax revenues available for the state to redistribute to the poor.

This reasoning also applies to innovations that are not patentable. When kept secret, innovations in organizations and markets yield extraordinary profits for some years. Up to a point, laws that slow the diffusion of innovations, notably trade secrets laws and employment laws, can increase the rate of growth. These laws are justified in so far as the gain from faster innovation outweighs the disadvantages of temporarily higher prices. Generalizing, the property principle innovation maximizes the rate of sustained growth, which eliminates national poverty as quickly as possible. In contrast, taking more from entrepreneurs than the property principle authorizes will slow growth and prolong national poverty. Innovators should keep much of what they make if the gain from faster growth outweighs the loss from temporarily higher consumer prices. For these reasons, social justice theorists should accept the property principle for innovation.

For example, John Rawls developed the most influential theory of justice among western philosophers in the second half of the 20th Century.[32] Rawls formulated the principle that a just society should maximize the "primary social goods" enjoyed by its worst off members.[33] This principle implies that a just society lets innovators keep what they make if, and only if, doing so benefits its poorest members. Faster growth increases the wages of the poor and the tax

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[32] John Rawls, A Theory of Justice (Cambridge: Harvard Univ. Press, 1971).
[33] This is the famous Maximin Principle – maximize the minimum payoff in society.

revenues that the state can collect and redistribute to them. So, depending on its interpretation, Rawls's theory could justify keeping taxes low on innovators.[34]

Regardless of their justification, these laws will strike many people as unfair because reward disconnects from effort. Among hard working businessmen, creativity and luck distinguish those who succeed from those who fail, not effort. Businessmen who become super rich do not work harder than many others. Lakshmi Mittal apparently made $50 billion for himself, and more for society, by creativity and luck.[35] The collapse of socialist steel plants around the world occurred at just the right time for him to acquire them by expanding his family's steel business. To achieve economic growth, law and policy must allow markets to reward creativity and luck disproportionately to effort.

Conversely, a theory of social justice that precludes sustained growth should be modified or abandoned. Thus, after the failure of harsh egalitarianism during China's Cultural Revolution, Premier Deng Xioping devised a famous motto for the 1980s: "For everyone to get rich, some must get rich first."[36] People can accept others' moving ahead as long as they expect that their turn will come soon, rather like motorists waiting in line in a highway tunnel.[37] With sustained growth, most people get their turn for an increase in income.

Unfortunately, not everyone gets a turn. Rising wages do not necessarily reach people who do work for money -- children, the elderly, women-at-home, the disabled, the insane, vagabonds, criminals, etc. "Residual poverty" refers to the people left behind as a nation gets rich – the people who sleep under railway

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[34]We say "might" because economic growth extends across generations and the theory of Rawls does not encompass justice between different generations of people. Thus theorists quickly realized that innovation creates problems for the maximin principle. With innovation, future generations have an advantage over the present generation. If the present generation is worse off than future generations, the maximin authorizes the present generation to consume enough capital to exactly offset the advantage of innovation to future generations. Thus every generation is equal and society never gets richer. For various essays reconsidering Rawls, see E. S. Phelps, edited, Economic Justice (1973).

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[36] This formulation of the motto, which is distilled from a longer paragraph, is from Robert Elegant, Pacific Destiny: Inside Asia Today (Crown Publishers, Inc., New York, 1990), page 309.

[37] Albert Hirschman formulated the "tunnel effect" in "The Changing Tolerance for Income Inequality in the Course of Economic Development," in Essays in Trespassing (Cambridge University Press, 1981).

bridges, shuffle behind shopping carts piled with rags, or pick through garbage at the dump. About 22 percent of all people living in low and middle income countries live in absolute poverty defined as less than one dollar a day, and about half of all people live in poverty defined as less than two dollars a day.[38] And poverty is dangerous – life-expectancy is roughly 35 years less in Nigeria than Japan.[39] Whereas the cure for national poverty is rising productivity and wages, the cure for residual poverty is efficient redistribution -- sharing in families, charitable gifts, and state taxes and expenditures. But we are getting off track. Our topic is national poverty, not residual poverty.

Equality and Growth

Besides poverty, social justice theory concerns equality. Does faster growth increase or diminish equality? Does more equality increase or diminish growth? To answer these questions, we begin with the fact that equality and growth go together, at least roughly. Economists measure equality of income in a nation by an index number between 0 and 1, where "0" indicates the most equality, and "1" indicates the least equality. Using this index, Figure 3.3 sorts selected countries by equality into low, medium, and high. Most low equality countries are also low-income countries in southern Africa and Latin America. Conversely, most high equality countries are high-income countries in Europe and East Asia. Figure 3.3 thus shows that equality goes roughly with income per capita in nations. Since income per capita is the result of past growth, we conclude that equality also goes roughly with growth in income per capita in nations.

[38] Table 3.3. Poverty Headcount, percentage of population living from less than 2 dollars a day (2001), World Dev. Ind. (2005).
[39] See "Table xx: Life Expectancy at Birth in Selected Counties," World Development Indicators, 2008.

Figure 3.3: Income Equality in Selected Countries

High equality	Index*	Medium equality	Index*	Low equality	Index*
Japan	.25	India	.33	Niger	.51
Sweden	.25	Canada	.33	Nigeria	.51
Belgium	.25	France	.33	Argentina	.52
Denmark	.25	Poland	.34	Zambia	.53
Norway	.26	Indonesia	.34	El Salvador	.53
Finland	.27	United Kingdom	.36	Mexico	.55
Hungary	.27	Italy	.36	Panama	.56
Germany	.28	Turkey	.40	Chile	.57
Ukraine	.29	United States	.41	Colombia	.58
Ethiopia	.30	Iran	.43	Paraguay	.58
Russia	.31	China	.45	South Africa	.58
South Korea	.32	Philippines	.46	Zimbabwe	.57
				Brazil	.59
				Central African Rep.	.61
				Namibia	.71

* Gini Coefficient

Source: World Bank, World Development Indicators 2006

We have explained that equality and growth roughly go together. What is the direction of causation? Does growth causes equality or does equality cause growth? Many causes in economic life respond to their effects, like a man courting a woman. The feedback between equality and growth is complicated, but we can give some important examples.

Here is an example where equality and growth have the same cause. Better schools improve the education of workers. Better-educated workers are more productive and receive higher wages, which increases equality. Better-educated workers are also more innovative, which increases growth. So better schools cause growth and equality, as depicted in Figure 3.4.

Figure 3.4. Education, Growth, and Equality

Chinese agriculture provides another example where equality apparently caused growth. In the late 1950s, China's communist party forced farmers into communes and diverted some of their labor from agriculture into village industries. Farmers starved in the winters of 1959 and 1960. In the 1980s the communist party reversed itself, dissolved the communes and created family farms.[40] Agricultural production soared. When dissolving the communes, the land was divided roughly equally among families, which apparently contributed to soaring productivity. An equal distribution gave every family an equal chance to prove who is the better farmer. An unequal distribution probably would have favored politically loyal families. An equal distribution thus identified the better farmers more clearly than an unequal distribution, like an equal start to a race identifies the faster runners more clearly than letting your friends start first.[41]

Competition drives innovation, whereas cartels suppress it. Innovation creates alternatives to the cartelized product, either in the form of a new product or a new way to make the old product. By suppressing innovation, a cartel slows

[40] The next chapter has more on dissolving China's communes.
[41] Given weak capital markets, Chinese farmers had to invest in their farms from retained earnings. Some economic theory suggests that an equal division of land probably enabled the best farmers to earn and invest more than an unequal division. For the proposition that an equal initial division of property is efficient in the presence of weak capital markets, see Yeon-Koo Che and Ian Gale, "Market versus Non-Market Assignment of Initial Ownership," Berkeley Law and Economics Workshop (2007).

growth in order to prolong its monopoly profits, which also increase inequality. For example, a small number of members of the New York Stock Exchange, who were very rich, historically collected large fees for matching the buyers and sellers of stocks, so they delayed adoption of electronic matching. Compared to cartels, competitive markets increase growth by rewarding competition and increase equality by eroding an innovator's extraordinary profits. As depicted in Figure 3.5, cartels cause stagnation and inequality, and competition causes growth and equality.

Figure 3.5. Competition, Growth, Equality

The most destructive cartels are oligarchies in which a few wealthy families hold all state power. When a few families control the state, they can use it to suppress economic competitors and secure monopoly profits. Figure 3.6 estimates the percentage of corporate assets owned by the fifteen richest families in some Asian countries. The fifteen richest families own more than half of the corporate assets in Indonesia, the Philippines, and Thailand. By contrast, the fifteen richest families own roughly 3% of corporate assets in Japan and the United States.

Figure 3.6. Ownership of company assets by the 15 richest families in selected Asian Countries and USA in 1996.

Country	Ownership	Country	Ownership
Indonesia	62%	Singapore	30%
Philippines	55%	Malaysia	28%
Thailand	53%	Taiwan	20%
Korea	38%		
Hong-Kong	34%	Japan	3%
		USA	3%

Source: Claessens, S., Djankov, S., & Lang, L. 2000. "The separation of ownership and control in East Asian corporations," Journal of Financial Economics 58: 81-112.

Most business want effective state law to protect their property and enforcement their contracts. However, oligarchs do not need protection from state laws because they are the state. Effective rights of property and contract slow them down.[42] When the few dominate the many, the few have less interest in submitting their power to the restraints of law. These considerations suggest what facts confirm: Economic equality correlates with the rule of law index.[43]

To illustrate, after the collapse of communism, Russia quickly privatized over fourteen thousand medium and large enterprises. Theorists hoped that the new owners would secure their property by pressing politicians to create effective property law. This did not happen. Instead, a few tycoons called "the oligarchs"

[42] According to economic theory, private cartels are inherently unstable when exposed to potential competitors. Property law destabilizes cartels by protecting competitors. By controlling the state, the oligarchs can us regulations, duties, and licenses to stabilize their cartels.

[43] The average value for the rule of law index (a number between -2 and 2) is –0.46 for the 24 counties with the highest income inequality (Gini coefficient higher than 0.5). In contrasts, it is 0.1 for all other 100 countries in the sample. There are only some rare countries, which have combined extreme income inequality with the rule of law, that is Botswana, Namibia, South Africa and Chile. Sources: Rule of Law Index, (year 2002) Kaufmann, D., A. Kraay, and M. Mastruzzi. 2003. Governance Matters III: Governance Indicators for 1996–2002. World Bank, World Bank Policy Research Working Paper 3106, Year: 2002, Gini Coefficient, UNDP, 2005. Human Development Report 2005, various years, 1983-2003.

gained control over most of these firms. The oligarchs were so rich that they could translate wealth directly into power. They did not need property rights to protect them. Or so they thought until Vladimir Putin became President and used the state to dispossess the wealth of some of his enemies.[44]

Conclusion

Clear thinking about the economy requires skepticism about people. For predictive accuracy, economic theorists since Adam Smith in the 18th century assume that most people want more wealth, and they will devote talent and energy to getting it. Oliver Wendell Holmes, the American legal theorist and Supreme Court Justice, thought that law should aim at bad people who will disobey unless coerced, not good people who obey willingly. Combining Smith and Holmes, law and economics scholars usually assume that most people devote talent and energy to getting more wealth, and law's coercive force must channel and constrain their pursuit of it.

People can acquire wealth by making or taking it. If owners mostly get their wealth by taking it from workers as argued by Marx, then abolishing private property should cause faster economic growth, like killing parasites in a puppy's intestines. This prediction proved false. Conversely, if owners in market economies mostly get their wealth by making it, then securing property through law will cause faster growth, like feeding a puppy. This proposition is mostly true, especially for innovators.

Most workers in poor countries make little of value because their labor is not very productive, like the Kolkata seamstress. Productivity and wages rise with innovation, which proceeds briskly when innovators keep much of what they make. Innovation slows when others take most of what innovators make. People take wealth from each other illegally through theft and bribes, legally through state expropriation and regulation, and by forming cartels or monopolies.

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[44] Hoff, K. and Joseph Stiglitz, J. (2002). "After the Big Bang? Obstacles to the Emergence of the Rule of Law in Post-Communist societies." National Bureau of Economic Research Working Paper 9282.

According to the property principle, innovators should keep much of what they make. More precisely, they should keep the amount that causes them to maximize the economy's rate of sustained growth, which benefits people beyond imaging. Theories of social justice need to take account of the benefits of growth, including the property principle for innovation. The next chapter applies the property principle to three prominent areas of property law in developing countries.

Chapter 4

Keeping What You Make – Property Law

Ecuadorian investors decline to buy stock issued by a profitable shrimp farm for fear that the managers will steal their money. A Brazilian landowner refuses to lease farmland for fear that the tenants will stay permanently without paying rent. A Chinese filmmaker foregoes making a movie for home viewing for fear that graduate students will circulate it freely on the Internet. What do these three examples have in common? In each case the fear that wealth will be taken stops someone from making it. Ecuadorian investors need protection from conniving managers in order to finance profitable businesses. Brazilian landowners need protection from deadbeat tenants in order to make land available for renting. And Chinese filmmaker needs protection from student-pirates in order increase the production of Chinese films.

Effective law could assuage these fears -- corporate law to protect investors, land law to protect lessors, and copyright law to protect filmmakers. The preceding chapter promulgated the property principle for economic growth: People who make wealth should keep much of it. Implementing this principle provides the legal foundations for markets and rapid economic growth. This chapter concerns how property law helps people to keep what they make. We focus on real property (land and buildings), organizational property (corporations and partnerships), and intellectual property (patents and copyright).

A. Land Reform, Squatters, Dead Capital

The Peruvian economist, Hernando De Soto, recently estimated that Egypt's working poor owns 92 percent of Egypt's asset base in the form of real estate . He calculated that relatively poor people own real estate in Cairo that is six times the value of all savings deposits in Egyptian banks, thirty times the value of the 746 companies registered at the Cairo Stock Exchange, and fifty-five times the value of foreign investments in Egypt until 1996.[1] While people can dispute these numbers, there is no disputing that land and buildings constitute a large fraction of any nation's wealth, especially in poor countries. Furthermore, ownership of land and buildings is usually distributed across economic classes, including poor people. As we will explain, the size and distribution of real estate gives vibrant real estate markets a special role in encouraging entrepreneurs in developing countries.

1. Land Reform

Anything called "reform" sounds good, but, in practice, land reform can be good or bad. The outcome usually depends on the mechanism to change owners, as we will explain. The worst historical example began in 1958 when China's communist government led by Mao Zedong forced peasants off small plots of land and into large communes. The government expected the communes, which were suited for heavy machinery and work groups, to increase agricultural production and feed city workers who were attempting break-neck industrialization under the slogan "the Great Leap Forward." The communes had to deliver high quotas of food to the cities, even though communal workers were required to divert some of their labor from agriculture to village industries. Instead of increasing, agricultural production fell disastrously. The government, however, did not acknowledge the problem, seek aid, or import food. As a result, millions of peasants starved, especially in the winters of 1959 and 1960. The best guesses of scholars put deaths at 20 to 30 million people.[2]

In the case of Chinese communes, the government forced a change in ownership. Zimbabwe, which we mentioned in Chapter 3, provides another disastrous example of forced change. In Zimbabwe people of European descent owned prosperous farms that fed the country, employed workers, and earned

[1] See Belgium, H. H. v. (2005). Reviewing Hernando de Soto, 'The Mystery of Capital - Why capitalism triumphs in the West and fails everywhere else'. http://home.worldonline.nl/~sttdc/book_soto.htm, Foundation Teilhard De Chardon -- Netherlands.
[2] "Source List and Detailed Death Tolls for the Twentieth Century Hemoclysm", http://users.erols.com/mwhite28/warstat1.htm. .

foreign currency from tobacco exports. In 2000 President Mugabe asserted that whites stole the land from blacks early in the 20th century, and he announced a program to take land from white farmers and redistribute it to blacks. Mugabe's loyalists seized land, most white farmers fled the country, agricultural production plummeted, food shortages developed, hyperinflation reduced trade to barter, and massive unemployment impoverished already poor people.[3]

We have given two extreme examples of land reform with disastrous effects. Forced redistribution of land by politicians usually causes productivity to fall (although not so disastrously). The case of Zimbabwe suggests two general reasons why productivity falls. President Mugabe took land from people who bought it. Most buyers got the land by bidding more for it than others would pay. The highest bidders tended to be the best farmers who could make the most money from farming. Markets continually redistribute land from less productive to more productive owners.[4] Unlike markets, President Mugabe took land from political opponents and gave it to loyal supporters. Loyalty correlates badly with productivity. The first reason why production plummeted in Zimbabwe is that land was taken from buyers and given to loyalists.

Besides being worse farmers on average, the new owners in Zimbabwe were insecure. Fearing that someone else might take the land from them, they were reluctant to plant new crops, dig irrigation channels, or otherwise invest. Forced redistribution generally unsettles property rights, which increases the risk of investing and usually leads to less of it. The second reason why production plummeted in Zimbabwe is that uncertain ownership discouraged investment.

We have discussed two examples where land reform destroyed markets and caused a sharp fall in agricultural production. In contrast, another type of land reform creates markets and usually causes agricultural production to increase. Again, the most dramatic example comes from China. After Mao Zedong's death in 1976, past policies were gradually reversed and China began

[3] For economic statistics on the collapse of the economy, see David Coltart, "A Decade of Suffering in Zimbabwe: Economic Collapse and political Repression under Robert Mugabe," Cato Institute, Center for Global Liberty and Prosperity (March 24, 2008).
[4] This is an application of the general principle that market transaction move resources to the parties who value them the most.

to dissolve the communes in 1978. Agricultural production consequently soared in the 1980s. The dissolution of the communes was relatively egalitarian with each peasant family receiving a small plot of land, so the benefits from the surge in agricultural production were widely shared.[5]

Besides China, creating markets ("marketization") increased agricultural production in other times and places. The Seven Year War of 1755-1762 left many Prussian provinces in ruins, including Silesia. To hasten reconstruction, Silesia repealed prohibitions against the nobility selling and mortgaging land, and an active market quickly emerged. As a result, Silesian agricultural reconstructed quickly, whereas other areas of Germany that retained feudal prohibitions reconstructed slowly. Also, ownership of land in Silesia passed quickly from noble families to the best farmers. By marketizing land, Silesia gained agriculture productivity and lost its nobility.[6]

A similar example comes from Japan's Land Revision Act of 1873. It gave customary owners a secure legal title to land, replaced rice taxes owed to feudal lords with money taxes owed to the central government, and permitted sale, division, annexation, mortgage, and lease of land. Marketizing agriculture caused a surge in productivity that was part of the 19th century "Japanese

[5] Chapter 3 explained why equal distribution of communal lands probably increased production more than an unequal distribution could have done – everyone got an equal share, rather than political loyalists getting a larger share.

[6] French intellectuals called the "Physiocrats" provided the intellectual basis for the Silesian reforms. In the 18th century, productivity gains in English agriculture outstripped French agriculture, and the Physiocrats explained the difference by better-developed agricultural markets in England compared to France. They attributed the difference in marketization partly to the law – England swept aside feudal constraints and state regulations that kept productivity low in France. For example, the traditional practice of dividing the crop between landlord and tenant according to a fixed percentage ("share cropping") did not allow the party who invested in new capital to receive more of the increase in production. The Physiocrats prescribed a remedy: Create free markets in rural land, labor, and agricultural products by ending state intervention and removing feudal constraints. (Besides favoring markets, the Physiocrats believed in some oddly metaphysical theories about economic growth coming from agriculture and not industry.)

miracle."[7] As in Japan, land reform in other east Asian countries and Latin America aimed to dissolve feudal obligations and estates, with mixed results.[8]

We have given two examples of land reform that succeeded in creating land markets. Note, however, that other attempts to privatize land failed to create active markets. To illustrate, most of the land in Papua New Guinea– the authorities say 97% -- is in customary ownership by clans and tribes, who cannot sell it. Beginning under the Australian protectorate and continuing after full independence in 1975, the state tried to convert customary ownership, which does not allow land sales, to individual ownership under English common law, which allows land sales. Conversion had modest success in towns and failed in the countryside. In the 1980s the nation was awash with lawsuits and violence by customary owners seeking compensation or recovery of lost lands. The attempt of the state to create markets for land failed, although illegal markets flourish on the edge of towns.[9]

Privatizing land failed in Papua New Guinea for predictable reasons. Each clan and tribe claims the maximum land that it controlled in the past. Surveying boundaries and registering title requires resolving difficult disputes, like deciding who owns Jerusalem. When disputes are unresolved, privatization does not stick.

Behind the restrictions on land sales in Papua New Guinea lies the desire to preserve a way of life. Rural land traditionally passed from one generation to another according to fixed inheritance rules, with sales impossible. Allowing land

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[7] Unfortunately, absentee landlord paid lower taxes than independent farmers, so ownership shifted from the latter to the former. See Yamasaki, Y. and R. V. Andelson (2000 December). American Journal of Economics and Sociology. http://www.findarticles.com/p/articles/mi_m0254/is_5_59/ai_70738933.

[8] Alain de Janvry, "The Role of Land Reform in Economic Development: Policies and Politics," American Journal of Agricultural Economics 63 (1981): 384-392. See Table 2 for characteristics of land reform in twenty countries.

[9] Note that Papua New Guinea has a special class of land courts that may modernize customary ownership much like English common law evolved from family ownership of property in medieval times to individual ownership. As cited above, see R. Cotter, "Inventing Market Property: The Land Courts of Papua New Guinea." Law and Society Review 25: 759-801(1991), and also R. Cooter, Issues in Customary Land Law. Port Moresby, Papua New Guinea, Institute of National Affairs, 1989.

sales raises the possibility that owners will sell the land, break the chain of inheritance, and disrupt the traditional social order. With Papua New Guinea's clans as with Silesia's nobility, preserving the traditional social order seems to require retarding the sale of land.[10] In societies where clans and kin groups still own land, however, lively real estate markets usually mean dying clans.

In other countries besides Papua New Guinea, clans and tribes obstruct land sales. Throughout India a couple that marries can choose whether or not the state will apply the law of the "undivided Hindu family" to their property. The undivided Hindu family is all living members of the husband's bloodline. Opting into the law has tax advantages. However, all members of the undivided Hindu family must agree in order to pledge real estate as security for a loan, so mortgages are rare. Also, the law restricts sales of land in tribal areas of India to members of the same tribe.[11]

In much of Africa, a more individualistic system of ownership is displacing a traditional system based kin groups. A statistical analysis of Ghana established that more individual property rights cause more investment on improving the land. People apparently invest more to improve land when they share the benefits with fewer kin. Interestingly, the study also found the converse -- that more investment on the land causes more individual property rights. Individuals who want to invest in the land apparently influence government to strengthen their ownership rights.[12]

Another region with massive land privatization is Eastern Europe, where results differed from place to place. To illustrate, cooperative and state farms appropriated most agricultural land in Poland in the communist period that began in 1945 and ended in 1989. By 1997-98, Poland had privatized 85% of its

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[10] See R. Cooter, "Inventing Market Property: The Land Courts of Papua New Guinea." Law and Society Review **25**: 759-801(1991), and also R. Cooter, Issues in Customary Land Law. Port Moresby, Papua New Guinea, Institute of National Affairs,1989.

[11] Insert cite.

[12] T. Besley, (1995). "Property Rights and Investment Incentives: Theory and Evidence from Ghana." J. Political Economy 5: 903-937.

agricultural land.[13] While successful overall, privatization provoked legal challenges from people with competing claims dues to past connections to the land. Other formerly communist countries like Russia, China, and Vietnam have not attempted to privatize land. In these countries, the land still belongs to "the people" (i.e. the state), even though many of the buildings on top of it -- apartments, houses, shops, barns, factories -- are privately owned. The politics of privatizing an apartment building proved manageable compared to the incendiary politics of privatizing land.

However, private persons, not the state, must plant most of the nation's crops and build most of its barns, houses, apartments, shops, and factories. For private persons to make these investments, they must feel secure in owning the improvements to the land. A long term lease of land can provide this security, provided that the lease is long and frequently renewed, even though the state retains ownership.[14] So countries where a communist tradition precludes privatizing land struggle to develop a system of long-term leases that will achieve similar results without enflaming politics.

In sum, agricultural land changes owners by market transactions and political fiat. Production usually falls when politicians redistribute land by force to their loyalists, and productively usually surges when legal reforms create active markets for land in socialist, feudal, or tribal societies. Creating land markets requires quieting disputes over ownership so that people acquire land by buying it, not rousing disputes so that people acquire land by litigating or lobbying.

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[13] Table 2 in Csaba Csaki and Zvi Lerman, "Structural Change in the Farming Sectors in Central And Eastern Europe," World Bank TEchnical Paper No. 465 (June 27, 1999), zotero://attachment/653218/.

[14] With a discount rate of 5%, the present value of $100 to be paid in 100 years is less than a dollar. So the present value of a 100 year lease on land is almost the same as the value of owning the land. Thus a person with a 100 year lease will make almost identical investment decision as if he owned the land. However, to retain equivalence, the lease must be renewed frequently, so that each new buyer of the lease still has close to 100 years of rights to it. Use rights are often complex and change over time. Thus in 2007 China farmers were allowed to subleae, exchange, or transfer their land use rights, but only for agricultural uses and for no longer than 30 years. Thanks to Zhang Wei for providing these details.

2. Squatters

King Charles II of England gave land encompassing modern Pennsylvania to William Penn in 1681 in exchange for two beaver skins per year. Penn, however, had limited ability to survey and divide the land for sale, and even less ability to control or manage it, so squatters quickly occupied much of it. From its colonial beginnings through the 19th century, poor people in the United States seized land illegally from large private owners and the state.[15] Seizures relied on intimidation, lapses in the owners' vigilance, and government officials who looked away.

Similarly, poor people in Latin America, Africa, and Asia squat on others' land and the law catches up later or never.[16] When the poor seize land from the rich, evocative slogans justify the seizures, such as "Land belongs to the people," or "Land belongs to those who farm it." To illustrate, the Brazilian constitution requires land to fulfill its "social function."[17] Landless farmers can petition the state to expropriate "unproductive land" on their behalf (not withstanding the ecological importance of undeveloped land). Or, instead of waiting for the state to act, landless Brazilian farmers can invade. When the signal is given, well-organized invaders occupy part of a large ranch, quickly plant gardens, and erect dwellings. Afterwards, the legal process gets complicated and unpredictable. Perhaps the court immediately issues an eviction order, or perhaps the eviction order comes after several years, or

[15] In 1862 Congress gave railway companies ten square miles of land for every mile of track built on the transcontinental railway. Squatters often established homesteads before acquiring title, which created an economy outside the law's control. American law eventually imposed secure title and effective markets on all of the land, but the long process involved constant tension, occasional violence, spasmodic reversals, and many compromises. See Soto, H. d. (2001). "Citadels of Dead Capital: What the Third World must learn from U.S. history." Reason May 2001, viewable at http://reason.com/0105/fe.hs.citadels.shtml.

[16] Most seizures are by the poor, but wealthy people have also seized land in Latin America, such as the beaches of southern Peru and ranches in the Amazon.

[17] F. Santinoni Vera. (2006). "The Social Function of Property Rights in Brazil." Latin American and Caribbean Law and Economics Association (ALACDE), Annual Meeting. Vera Nascimento, Property Rights and Land Conflicts in Brazil: The Case of Mongangua's Growers Association, Latin American Law and Caribbean Law and Economics Association (ALACDE). Interlegis, Brasilia, 25 May 2007.

perhaps the state gives title to the invaders and promises to compensate the original owner.[18]

Given legal uncertainty in Brazil, owners who rent agricultural land to others take a big risk. After moving in, a tenant might stop paying rent and declare that the land was not fulfilling its social function. This possibility sharply curtails Brazil's rental market in rural land. A far smaller proportion of rural land is rented in Brazil as compared to other countries -- under 10% in Brazil as compared to over 40% in the U.S.A., France, and Holland.[19]

Besides the difficulty of renting land, poor Brazilian farmers face unnecessary difficulties buying it. A constitutional right to housing causes some judges to refuse to evict a homeowner who has fallen behind in mortgage payments. Since courts sometimes shield homeowners from their creditors, banks are reluctant to make loans for the purchase of homes. Compared to other countries, real estate credit operations in Brazil represent a much smaller percent of gross domestic product -- only 1%.[20]

We have explained the perverse logic of land seizures in Brazil. With rental and mortgage markets hobbled, the legal options for poor farmers are limited,[21] so they seize land. However, land seizures are the main reason why real estate markets are hobbled. By destroying markets, land invasions make themselves necessary. If courts promptly evicted people who seize rural land, and if courts made homeowners repay their debts, then the rental market for rural

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[18]We are grateful to Luciano Benetti Timm, a Brazilian law and economics scholar, for information on land seizures, leases, and mortgages in Brazil.

[19] Belgium has over 70%. Thanks to Bruno Salama who found these numbers in the following sources: For countries other than Brazil: J. J. Swinnen, "Private Enforcement Capital and Contract Enforcement in Transition Countries," American Journal of Agricultural Economics, 83(3): 686-690). For Brazil, Brazilian Institute of Geography and Statistics, "Census of 1996." For Brazil rental markets cover 2.43% of land, which is suitable for farming, and 7.13% of all rural properties.

[20]J. Saddi (2007). "Creditor-Debtor Law in Brazil," Latin American and Caribbean Law and Economics Association (ALACDE), Annual Conference, Interlegis, Brasilia, Brazil, June 2007.

[21] Sharecropping is a legal alternative. However, labor courts in Brazil may re-characterize sharecropping as an employment contract, which dramatically increase the taxes and social security payments due from the property's owner. Gabriel Buchmann, Determinantes do Mau Funcionamento do Mercado de Arrendamento de Terras no Brasil, 2006. In addition, legal caps on the amount payable by sharecroppers create uncertainty over whether or not a state official will adjust the terms of the contract after it is made. The remaining alternative for a poor farmer is to sell his labor. Unfortunately, employment contracts are often inefficient in agriculture.

land and the mortgage market for homes would flourish. Markets easily dominant seizures as a mechanism for redistributing land and raising living standards.

Effective markets in land are attainable in Brazil, but not in Papua New Guinea in the short run. The town of Madang expanded in recent decades where groups of people loosely called “clans” once planted crops, gathered food, and hunted. These clans still live there, encompassed by the town like pennies in a fountain, and the state still recognizes them as owners in customary law of much of the town’s land. Customary owners cannot legally sell their land to anyone, and they cannot legally rent it to anyone without following prohibitively burdensome procedures. As Madang swells with immigrants from the countryside who need land for homes and gardens, the immigrants cannot buy or rent customary land because the real estate market is so constricted, as in Brazil. So the immigrants, who far outnumber the customary owners, seize the land, plant gardens, and build dwellings. In the current legal situation, Madang’s growth depends on seizures to increase the land’s productivity and accommodate demographic change.[22]

Squatters live in shanties of cardboard and tin when they feel too insecure to invest in their dwellings. Conversely, when squatters feel secure, they invest time and money to improve their dwellings. To illustrate, the water authority in southeastern Sao Paulo, Brazil, owns land containing an underground aqua-duct.[23] Squatters built houses illegally on the land over the aqua-duct. The houses are mostly three story brick or cinderblock buildings with plastered walls, bright paint, artistic cement balustrades, ornate ironwork balconies, satellite dishes on roof, and often a garage with a car on the ground floor. Such investments increased the squatters’ security, because the state is less likely to evict them from substantial dwellings than cardboard shacks.

[22] "Inventing Market Property: The Land Courts of Papua New Guinea," 25 Law and Society Review 759 (1991).
[23] Thanks to Dr. Gesner Oliveira and SABESP for organizing Cooter’s visit to the “Integrative Park” that SABESP is building on cleared land over the aquaduct.

Squatters invest not only *because* they feel secure but to *make* themselves secure.[24]

In sum, the security of squatters mostly determines whether they live in shacks or houses. Squatters invest in improvements when they feel secure, especially if the improvements make them more secure. Conversely, where insecure ownership puts investments at risk, squatters invest little. Removing uncertainty from title stimulates investment in land and buildings, whereas fear of eviction creates some of the world's worst housing conditions.[25] Improvements in real estate markets, especially rentals and mortgages, sharply diminish squatting and redistribute ownership more effectively.

We have discussed the poor squatting on land owned by the state or relatively rich people. The opposite also occurs -- the rich seize land from the poor. To illustrate, the state owns all land in China and small farmers have use-rights. To facilitate a city's growth, the state can terminate the use-rights of small farmers and transfer them to large developers for factories, offices, and apartments. The ideology of progress and growth disguises this theft. International newspapers have publicized protests by poor farmers, sometimes with violence, when large developers evict them.[26] Allowing large developers to seize land from the poor as in China makes people subsidize growth who can least afford to do so.

3. Live and Dead Capital

[24] Economic theory shows that when investments increases the security of an uncertain claim, people invest too much too soon in the hope of securing title. This can result in the tragic destruction of natural resources called the "tragedy of the commons," as exemplified by devastated 19th century oil fields of Pennsylvania and the depleted anchovy fishery in the ocean off Peru today. In these cases, raising oil to the surface or catching anchovies secured title to them, so investors engaged in an exploitation race. See Cooter and Ulen, Introduction to Law and Economics (5th edition), chapter 5.

[25] Even with active real estate markets, however, housing the poor remains problematic. For analysis of housing the residual poor, see K.Deininger, (2005). "Land policies for growth and poverty reduction, A World Bank policy research report." Available at http://econ.worldbank.org/external/default/main?pagePK=64165259&piPK=64165421&theSitePK=469372&menuPK=64216926&entityID=000020439_20070126152021..

[26] Get cite from New York Times.

Chapter 2 explained that innovators borrow money to develop their innovations. When a borrower seeks a loan, the lender usually demands that the borrower offer something valuable as security. If the borrower defaults, the lender will seize the security and sell it to recoup the loan. Lenders prefer to secure loans with goods that are easy to sell in an active market with many buyers. “Liquidity” refers to the ease with which a good can be sold. When the borrower can offer a liquid asset as security, the lender will loan on good terms. Liquid assets are “living capital” because they finance growth. Conversely, when the borrower’s only assets are illiquid, the lender will loan on bad terms or refuse to loan. Illiquid assets are “dead capital” because they do not finance growth.

Real estate is the most valuable asset that many people own, especially the lower and middle classes. Land and dwellings are harder to hide than silver bracelets, bonds, or barrels of beer in a warehouse, which is a reason why creditors in poor countries like real estate as collateral. However, to obtain a mortgage, which is a loan secured by real estate, the creditor must be able to seize it from a defaulting debtor and sell it to satisfy the debt.[27] Under these conditions, mortgage markets are liquid and real estate is living capital. With liquid real estate markets, an entrepreneur can mortgage her house or apartment to invest in her business. Or she can borrow money to buy an apartment or house, which frees other funds to invest in her business. So the ability to secure loans by real estate significantly affects innovation and growth.

A recent study of secured loans in 60 developing countries found that corporations secure 70% with mortgages and only 30% with movable capital.[28] Evicting a corporation and seizing its real estate is easier for creditors in many countries than evicting a family from its house, apartment, or land. Throughout the world, cities like Cairo pulse with industry and enterprise from countless small

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[27] The creditor wants the collateral’s value to stay as high as the remaining debt. "... Basically, the bank wants to ensure a rough balance between the value of the debt outstanding and the value remaining in the project, including the value of the collateral, at all times." O. Hart, Firms, contracts, and financial structure. Oxford and New York, Clarendon Press and Oxford University Press, 1995, pages 8-9.

[28] This is true, even though the study found that land counts for only 22% of the value of corporate assets. Safavian/Fleisig/Steinbucks (2006) Unlocking Dead Capita, How Reforming Collateral Laws Improves Access to Finance, Public Polica for the Private Sector.

businesses. Many families own small businessmen, but they cannot use their real estate to secure a loan and grow into a big business. According to De Soto, mortgages are unavailable to Egypt's working poor, or only available on bad terms, so the largest source of capital in cities like Cairo is dead. Data shows that this problem is endemic in poor countries.[29]

Three obstacles to real estate transactions plague countries with weak property law. First, the buyer in a real estate transaction must ascertain that the seller truly owns the property. Defects in registries increase the risk of mistake or fraud in buying real estate.[30] In Vietnam, the state has not developed a registry of titles for apartments and houses. Some owners have a written document from a local authority acknowledging ownership, and others have no official documents. A statistical analysis of offers to sell real estate in two Vietnamese cities found that owners who claim to have a written document charge more for similar properties. The price increase approximately equals the increase from having a telephone, which is less than the increase from having a toilet.[31] An efficient registry of title would increase real estate sales in Vietnam and Peru.

After a defective registry, the second reason way that ineffective laws lower the sale value of real estate concerns its use. Besides ascertaining the seller's identity, the buyer must ascertain what he can do with the property. Obtaining a construction permit is so bureaucratic, slow, and costly in many

[29] The "spread" refers to the difference between the interest rate on a mortgage and the interest rate on bonds issued by stable companies or governments. When a creditor can easily seize and resell the real estate of a defaulting debtor, the creditor is secure and the spread is small. When seizing the real estate of a defaulting debtor is difficult and expensive, the creditor is insecure and the spread is large. Graphing the spread on the vertical axis for countries of the world and gross domestic product per capita shows an unmistakable downard slope, which indicates a smaller spread in richer countries.

[30] Many poor countries do not have registries for ownership of real estate, or the registries are defective due to incompetence or corruption. Land registries for Peru are organized by owner's name and not by location of property, so it is difficult for a potential buyer to find out whether or not more than one person claims the same property. Ravina, R. (2004). Costos de transacción en la transferencia de bienes inmuebles. ALACDE (Latin American and Caribbean Law and Economics Association, Lima, Peru. For evidence that land registration can increase land prices and economic growth, see Frank F.K. Byamugisha, "How Land Registration Affects Financial Development and Economic Growth in Thailand," Policy Research Working Paper #2241, The World Bank, East Asia and acific Region, Rural Development and Natural Resources Sector Unit (1999).

[31] Kim, A. (2005). "North versus South: politics and social norms in the evolution of private property rights in Vietnam." Comparative Law and Economics Forum (CLEF).

countries that owners bribe officials to turn a blind eye to illegal construction. Height limits on buildings in many Cairo neighborhoods are unrealistic, so owners accommodate growing families by violating regulations and adding additional stories to their buildings. Since almost every owner in Cairo is a violator of one regulation or another, officials can extract bribes from anyone by threatening to enforce the regulations. Buyers face the uncertainty of not knowing exactly how much they will have to pay in bribes to use their new property.

Third, the creditor bears the burden of filing a complaint against a defaulting debtor and going forward with legal action. In some countries, the legal process of debt collection costs too much or consumes too much time, so legal means of debt collection are impractical.[32] In these circumstances, mortgages are unavailable or only available on unfavorable terms. In the case of mortgages, the cost of debt collection falls dramatically when the creditor can obtain immediate control over property from a defaulting debtor without a trial.[33]

We have explained that real estate constitutes a large proportion of capital in poor countries, and much of it is dead because it is illiquid. Effective property rights would make this capital liquid and thus promote growth.

B. Organization as Property

Now we turn from real estate to organizational property. We will explain the essential difference between unowned organizations like churches and owned organizations like corporations. An organization includes offices such as

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[32] When the plaintiff's burden of going forward exceeds the stakes in the case, a rational person does not bother to file a legal complaint.

[33] To illustrate, most U.S. states allow a fast procedure called a "non-judicial foreclosure" or "summary judgment." It avoids a trial and gives the creditor immediate control over the property. However, the creditor does not get a "deficiency judgment." Thus if creditor loaned $100,000, the borrower repaid $10,000, and the creditor resold the property for $50,000, then the "deficiency" between the loan and the value recovered by the creditor equals $40,000. Under summary judgment, the creditor must bear the deficiency. The alternative, slower procedure is a "judicial foreclosure." It allows the creditor to obtain a "deficiency judgment." In the preceding example, the creditor can sell the property and also collect $40,000 from the debtor, assuming the debtor has the ability to pay. However, judicial foreclosure also gives the debtor the right to delay resale of the property by the creditor while the debtor tries to find the money to buy it. This right is called "equity of redemption."

Chairman, Chief Financial Officer, and Vice President. Besides offices, organizations divide labor through roles such as bookkeeper, mechanic, or purchasing agent. Through offices and roles, an organization coordinates its members and pursues goals. With sufficient coordination, the organization acts coherently like a rational person. Thus we define an organization as *a structure of offices and roles capable of corporate action.*

An organization's goals depend partly on whether or not it is *owned*. No one owns clubs, churches, cooperatives, trusts, charities, or the state. Being unowned, no one can buy or sell these organizations. Such an organization can sell its property -- land, buildings, machinery, etc., -- but not itself.

While most organizations own property, some organizations *are* property. Partnerships, corporations, and other kinds of firms can be bought and sold. A buyer acquires rights to the firm's profits and power over its organization. Unlike collective choice, ownership allows for quick decisions. For example, the owner of a small firm does with it as he or she wishes. In contrast, unowned organizations often make decisions collectively, following rules of governance that involve politics. To illustrate, some clubs, churches, cooperatives, and governments make decisions by majority rule.

Owned and unowned organizations perform different roles in society. An organization that can be sold tends to focus on making money, whereas an unowned organization tends to focus on other goals. Here is why. When a firm underperforms financially, a buyer can purchase it and increase its profits by changing its goals, strategies, personnel, and structure. Since the buyer expects to increase the firm's profits, the buyer should be willing to pay more than its current market value. The possibility of selling the organization pressures its leaders to maximize profits or sell the organization. Owned organization tend to succumb to this pressure and maximize profits. This is good for society as long as profits reflect social value. As measured by economists, profits reflect social value in competitive market that satisfy certain background conditions.[34] Many

[34] See the discussion of the "invisible hand" in Chapter 3.

consumer goods are, or can be, produced in relatively free markets, where privately owned firms play the central role.

In contrast, no one can sell an unowned organization, so the people who control it escape the pressure to maximize profits. They can pursue other goals – saving the rhinoceros, helping the poor, praising the Lord, organizing bridge tournaments, curing cancer, training graduate students, and so on. Unowned organizations play the central role in government, religion, education, and social life, where profits distort social value.

Nationalizing a private firm eliminates private ownership and diffuses control.[35] According to property theory, nationalization should cause an enterprise to begin losing money and pursuing broader goals. Also, nationalization should slow innovation and growth, because state ownership provides weak incentives for taking risks. This is what happened in African, Asian, and Latin American from the 1950s to the 1970s when countries nationalized their mineral resources, utilities, heavy industries and mines, banks, insurance companies and airlines. Conversely, privatizing a state enterprise can refocus it on profitability. This is what happened in the 1990s in Western Europe, where privatization occurred with good legal institutions that sustained competition. In relatively poor countries, the state sector tends to be a larger fraction of the economy. INSERT DATA More privatization of state companies in these countries would refocus them on profitability and promote growth.

Before privatization, however, the legal foundations should be in place. Much privatization in developing countries in the 1990s occurred in a context of weak legal institutions, which gave corrupt politicians the opportunity to buy state assets at artificially low prices. To illustrate, in 2004 Ukraine’s government agreed to sell the country's largest steel mill for $800 million to a consortium that included the son of the country's president, Leonid Kuchma. In 2005, the new president of Ukraine, Viktor Yushchenko, succeeded in undoing the sale and auctioning the steel mill for $4.8 billion. The price difference between an insider

[35] Privatizing either involves the sale of a state firm to private buyers, or, when the state enterprise is not organized as a firm, the sale of state assets.

deal and a relatively competitive auction was 600%. The insider deal apparently would have looted $4 billion from Ukraine's treasury.[36] (Insider looting also occurs in private firms, as discussed in Chapter 7.) Better to evolve towards private property than to politicize it.

C. Creativity and Property

Humanity almost lost its greatest theatrical legacy because Shakespeare made only a few copies of each play that he wrote.[37] Shakespeare made few copies because he did not want others to perform them. With ineffective copyright laws, je profited from selling tickets to performances, not from publishing his plays. In contrast, J.K. Rowling sold 8.3 million copies of Harry Potter and the Deathly Hallows on the first day of its publication.[38] A modern author like Rowling uses copyright law to secure ownership of an original expression. With effective copyright, secrecy is unnecessary.

Like an author, a modern scientist uses patent law to secure ownership of an original invention. Copyright and patents are forms of "intellectual property" -- intangible products of the mind that are owned like land and other tangible goods. No one can use another's patio, pants, or patent without the owner's permission. Effective intellectual property law permits sales, leases, and licenses, which reward creativity.

Unlike novels, no copyright or patent protects innovators in organizations and markets. An entrepreneur cannot copyright or patent the discovery of a foreign buyer, reorganization of its sales force, or its training methods for quality control workers. Since entrepreneurial innovations are unowned, their creators must protect them the same way that Shakespeare protected his plays – by secrecy.[39] Chapter 7 on corporate law analyzes the firm as a way to keep

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[36] Kramer, A. and H. Timmons (2005). "Mittal wins bidding for Ukraine's top steel maker". International Herald Tribune: 13.
[37] Stephen Greenblatt, Will in the World: How Shakespeare Became Shakespeare (19__).
[38] Motoko Rich, "Record First-Day Sales for Last 'Harry Potter' Book - New York Times," July 22, 2007, http://www.nytimes.com/2007/07/22/books/22cnd-potter.html?_r=1&oref=slogin.
[39] In the U.S., patents have been extended to some types of innovations in business organization, which are called "business method patents." For a proposal to increase the first-mover

secrets about extraordinary profits. For now, instead of discussing business secrets, we consider the conflict that rages between rich and poor countries over intellectual property.

Shops in Hong Kong and Brasilia sell American software at little more than the cost of a diskette, much to the consternation of businessmen in Silicon Valley, politicians, and diplomats. Should China and Brazil try to stop these sales or close their eyes to them? Developing countries gain in the short run from ignoring some intellectual property rights. For example, India and Latin American historically refused to recognize pharmaceutical patents, so their consumers enjoyed cheap medical drugs that were invented abroad and manufactured locally. By definition, “explicit information” is easily stored and retrieved, like the chemical formula for aspirin, the Beatles song “Imagine,” and Microsoft’s PowerPoint program. By not paying royalties to inventors, competition among resellers drives the price of explicit information down to its copying cost, which poor people can afford.

A distinguishing characteristic of information produces this effect. When two students share a cheese sandwich, each one gets a fraction of it. With most consumer goods like sandwiches, one person’s use diminishes what is left for others to use. In contrast, when two students share recorded music in the form of digital information, each one gets the whole thing. If one user of information does not interfere with another, why not permit everyone to copy freely? When people can copy freely, smart businessmen wait for others to create and then imitate the creators. Imitators gain a competitive advantage by escaping research and development costs, so creativity plummets. We have encountered a tradeoff between use and creativity. Unrestricted copying of creations expands use and slows creativity. Conversely, up to a point, restricted copying of creations by patent or copyright narrows use and expands creativity.[40]

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advantage by extending intellectual property rights to entrepreneurial innovators, see J. F.Duffy and M. Abramawitz (2006), "Intellectual Property for Market Innovation." Berkeley Law and Economics Seminar.

[40] Innovation builds on prior innovation, so innovators need free access some prior innovations. Excessive intellectual property laws slow innovation by raising the cost of access to common resources needed by innovators. In the U.S., excessive legal restrictions on copying apparently

Different countries prefer a different balance between use and creativity. Creators are disproportionately in countries with more educated people, well-equipped laboratories, and superior universities. These countries tend to favor more restrictions on copying. In contrast, countries with relatively few creators tend to favor fewer restrictions on copying and using.

To illustrate, Brazilian law allows the government to compel the owner of a pharmaceutical patent to license the drug's manufacture under some vague conditions. According to a recent study, the Brazilian government used this law to bargain with foreign manufacturers of AIDS drugs. The vague threat of compulsory licensing weakened the bargaining position of the foreigners, who struck a deal to sell the drugs relatively cheaply to the Brazilian government. If Brazil had no compulsory licensing law for pharmaceutical patents, or if the law were clearer and more favorable to patent owners, then Brazil would have to pay significantly more for AIDS drug. The Brazilian government distributed the drugs to AIDS victims for free. Thus a vague law for compulsory licensing of a patent advantaged AIDS victims and taxpayers in Brazil. [41]

Lowering the profitability of owning a patent should reduce the incentive for research and development, which slows innovation. Slower innovation has two bad consequences. First, slower innovation harms consumers throughout the world. Brazilians, however, are a small proportion of the world's consumers, so a small proportion of this cost fell on Brazilians. Second, slower innovation reduces the profits enjoyed temporarily by innovators. This same study concluded that all of the potential innovators are foreigners, not Brazilians. Brazilian firms are unlikely to research and develop AIDS drugs, regardless of patent laws. Brazil is much more likely to develop innovative computer programs

slow creativity, whereas socially optimal intellectual property law maximizes the rate of innovation. In various papers and books, Larry Lessig and Mark Lemley have especially developed this important theme in U.S. scholarship on intellectual property laws. Also see Michael Heller, The Gridlock Economy: How Too Much Ownership Wrecks Markets, Stops Innovation, and Costs Lives (Basic Books, 2008).

[41] Bruno Salama: and Daniel Benoliel. "Patent Bargains in Newly Industrialized Countries (NICs): The Case of Brazil." ALACDE (Latin American and Carribean Law and Economics Association), Annual Conference, Mexico City, May, 2008.

than medicinal drugs. So patent protection should help Brazil to develop it technical capacities with respect to computers more than AIDS drugs.

When users and creators are from different countries, national tensions rise. The tension concerns mostly enforcement efforts.[42] Thus American businessmen, politicians, and diplomats scold China, India, and Brazil over lax intellectual property rights. Conversely, these countries have fewer creators and more users, so expect to do better by copying American software, Japanese hardware, German pharmaceuticals, and Italian designs instead of creating for themselves.[43]

An implicit bargain between relatively rich creators and relatively poor countries of creations ameliorates the tension between them. Poor countries with low labor costs want to export manufactured goods to rich countries with high labor costs. Rich countries with high technical abilities want poor countries to recognize and enforce intellectual property rights. So the two groups make an implicit trade. By supporting the applications of poor countries to join the World Trade Organization (WTO), rich countries agree to accept imports from poor countries. In return, the countries that seek admission to the WTO must join the World Intellectual Property Organization (WIPO) and agree to recognize and protect intellectual property rights. When poor countries fail to protect intellectual property, WTO rules allow rich countries to initiate legal proceedings within the WTO and possibly to retaliate by curtailing imports. Thus, after fifteen years of

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[42] The scope and breadth of intellectual property laws differ from one country to another in their writing. For example, U.S. patents endure for 20 years from the date of the application's filing, whereas "petty patents" in Japan, China, South Korea, Taiwan, and other countries last from 4 to 10 years. However, the difference in effective law between the U.S. and these countries concerns enforcement of laws, not their drafting.

[43] For the argument that developing countries should not have intellectual property laws, see Pasquel, E. (2004). ¿No era la necesidad la madre de la inventiva? Por qué eliminar las patentes y los derechos de autor (Wasn't necessity the mother of invention? Why should we eliminate patents or copyright?), Latin American and Carribean Law and Economics Association's Annual Meeting, Lima, Peru. For empirical evidence that India benefits from manufacturing cheap generic drugs without recognizing the patent or paying royalties to the inventor, see Shubham Chaudhuri, P. K. G., and Panle Jia (2006). "Estimating the Effects of Global Patent Protection in Pharmaceuticals: A Case Study of Quinolones in India." BREAD (Bureau for Research in Economic Analysis of Development) Working Paper No. 125.

negotiation, the WTO admitted China in 2001 with the support of the U.S. China has historically tolerated piracy of intellectual property belonging to U.S. companies, but continuing this practice risks retaliation by the United States against Chinese exports.

Diplomacy aside, the development process naturally shifts the balance in favor of better protection for creativity in poor countries. Ineffective copyrights and patents retard the domestic software industry in India and China. These two countries can profitably develop software for export to the U.S. and Europe, which have effective copyright laws, but developing software for domestic use is less profitable because of piracy. Similarly, “Bollywood” in India, which makes more movies annually than Hollywood in California, will lose more money as more Indians acquire technology to circulate movies on the Internet. Chinese and Indian production of movies and retail software for domestic consumption would expand if the makers could prevent unauthorized use. Hence the recent newspaper headline: “42 Million Pirated Discs Destroyed in Latest Chinese Anti-Counterfeiting Effort.”[44] If economic development shrinks the advantage to poor countries of pirating intellectual property, a common interest will emerge for developed and developing countries to find effective ways to enforce intellectual property rights.

Trends in patents suggest that an acceleration in the rate of technical innovation in the world as a whole. Residents in rich countries file the most patents by far, but filings from middle and low-income countries are increasing. In 1999 the United States granted nearly 150,000 patents of which 2,160 applicants were from India and 7,737 were from China. Patents granted to applicants from China increased by almost 300% from 1999 to 2002.[45] Patenting is distributed unevenly across countries. During the 20-year period between 1980 and 1999, South Korea registered 16,328 patents for inventions in the United States, whereas, according to the 2003 Arab Human Development Report, the nine leading Arab economies registered 370 patents in the U.S. for

[44] San Francisco Chronicle, August 12, 2003.
[45] WIPO IP/STAT/1981-2002.

the same period. Creative industries apparently thrive in some developing countries and languish in others. When creativity increases in importance, the benefits to a nation from effective intellectual property protection also increases. With more effective intellectual property law, India and China might participate more fully in the explosion of creativity.[46]

In any case, theft is much harder to prevent for intellectual property than for automobiles or real estate. Even with relatively effective intellectual property laws, Americans and Europeans steal much more software and recorded music than cars or land. For intellectual property as with so much else, fixing law-on-the-books is easier than fixing law-in-practice. Intellectual property is one more reason why rich and poor countries have a common interest in improving the effectiveness of law.

Before leaving intellectual property, we mention something different from patents or copyright, namely trademark. Reputation matters in marketing and socializing, because people like to gossip about bad products almost as much as bad people. Trademark law gives the owner of a brand name the power to build its reputation, which can protect protects consumers from inferior products. Thus Coke commands a price premium in India over domestic competitors such as Campa Cola and Thumbs Up, partly because “Coke” signals uncontaminated bottles to consumers.[47] Conversely, without branding, consumers confuse goods from different manufacturers, which gives them an incentive to debase quality and save costs. Before the fall of communism in 1988, Moscow stores sold many goods with generic labels such as “milk,” “ink pen”, and “pants,” so Moscow consumers sometimes unknowingly bought adulterated milk, leaky pens, and holey pants.

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[46] Their success is much more likely in computer programming, where development costs are relatively low, as compared to pharmaceuticals, where development costs are very high. With existing technology, proving the safety of a new drug is prohibitively expensive except for most companies.

[47] This essential reputation for cold drinks was however badly undermined. “Tests conducted by a variety of agencies, including the government of India, confirmed that Coca-Cola products contained high levels of pesticides, and as a result, the Parliament of India has banned the sale of Coca-Cola in its cafeteria”.. http://www.indiaresource.org/campaigns/coke/index.html(last visited July 2007)

We discussed examples where effective trademark laws prevent consumers from buying fake goods unknowingly. Conversely, people *knowingly* buy fake Gucci bags, Nike shoes, and Rolex watches in Korea and China. Where a savvy consumer can perceive quality by careful inspection, a good counterfeit provides similar quality and prestige at less cost than the real brand. However, if trademark laws were ineffective everywhere, trademarks would lose their power to signal quality and to convey prestige. Fake goods are like a parasite that dies without a host. Some people who sneer at famous brands would welcome this result. For some people, Gucci represents “manipulative fashions”, Nike represents “American imperialism”, Rolex represents “conspicuous consumption,” and all of them represent snobbery. In any case, poor countries are under increasing pressure by rich countries to eliminate the counterfeits that their consumers love.

D. Conclusion

This chapter concerns how property law helps people to keep what they make. We focused on real property (land and buildings), organizational property (corporations and partnerships), and intellectual property (patents and copyright).

Our analysis of real property identified three consequences of effective property rights. First, effective property rights enable buying and selling that brings real estate into the hands of people who can produce the most from using it. In effect, an active real estate market is continual land reform in favor of the most productive people. Second, effective property rights give owners the security to invest in improving the land. We discussed this fact in connection with squatters. Third, effective property rights create collateral so owners can borrow money and make investments.[48] We discussed this fact in distinguishing living and dead capital.

[48] A suggestive, but inconclusive, statistical test of these three hypotheses is found in T. Besley,. "Property Rights and Investment Incentives: Theory and Evidence from Ghana." J .Political Economy **5**: 903-937 (1995).

Our analysis of organizational property explained that market pressures keep owned organizations focused on profitability. Privatizing state enterprises can refocus them on profitability, which promotes growth and innovation. Privatizing, however, requires a legal foundation to prevent crony capitalists from looting the state sector.

Ineffective copyright and patents laws in developing countries have provoked a fight between creators in rich countries and users in poor countries. The edge naturally smoothes on this sharp conflict as more creators emerge in developing countries.

Besides effective property rights, making wealth requires coordinating the efforts of different peoples. People coordinate by saying what they will do and doing what they say. Contract law, which enables people to commit to doing what they say, is the subject of the next chapter.

Chapter 5: Contracts – Doing What You Say

The Soviet Commissar needed to cooperate with the Director of the State Steel Combine in Russia in the 1960s. They were also rivals, so the Commissar kept an eye on the Director's movements. One day they met in the Moscow railway station. The Commissar asked the Director, "Where are you going?" The Director replied, "To Leningrad." The Commissar thought to himself, "He says that he is going to Leningrad because he wants me to think that he is going to Minsk, but I know that he really is going to Leningrad." So the Commissar said to the Director, "You're lying!"

This joke depicts the problem of credible communication. To coordinate their behavior, people must say what they will do and do what they say. How do we know when to believe someone else? Businessmen relentlessly scrutinize the demeanor of others for clues about what they are really thinking. In Warm Springs, Oregon, a painting on the courthouse wall in an Indian reservation shows a witness testifying while holding his fingers in a bowl of water. If his hand trembled and made ripples, then he was presumably lying. The polygraph or "lie detector" used by police works on similar physiological principles. An accomplished deceiver, however, can fool a water bowl or a polygraph. Fortunately, the law invented a superior mechanism to make people tell the truth in business transactions: the contract.

To understand how contracts work, consider what the Chinese philosopher Sun Tzu wrote in the 6th century BCE: "When your army has crossed the border [into hostile territory], you should burn your boats and bridges, in order to make it clear to everybody that you have no hankering after home."[1] Burning the bridges commits the army to attack by foreclosing the opportunity to retreat.

[1] Sun Tzu, The Art of War (Project Gutenberg, 1910), section XI part 3. Destroying your own ability to retreat is a tactic used by the Greek general Xenophon, the Vandal king Geiseric, and the Mexican conquerer Cortez.

In business as in war, an actor commits to performing an act by raising the cost of not performing it. We use the term “contract” to refer to a promise with material sanctions for breaking it, especially legal sanctions. Like burning bridges, an effective contract commits a person to doing what he says he will do by raising the cost of not doing it. The cost is raised to the extent of the sanction for breaking the promise. When businessmen bargain, they begin with cheap talk and they often end with contracts. According to the *contract principle for coordination, the law should enable people to commit to doing what they say.* When this principle is implemented, people can trust each other enough to work together, even though money is at stake.[2]

We will distinguish three types of sanctions for breaking promises. Recall from Chapter 1 that a startup firm in Silicon Valley goes through three stages of finance: relational, private, and public. Each stage relies increasingly on state law. As a legal system becomes more reliable, finance shifts towards more law-intensive forms of finance, without abandoning the earlier forms. So the three stages in Silicon Valley correspond to three levels of development in the financial systems of countries.

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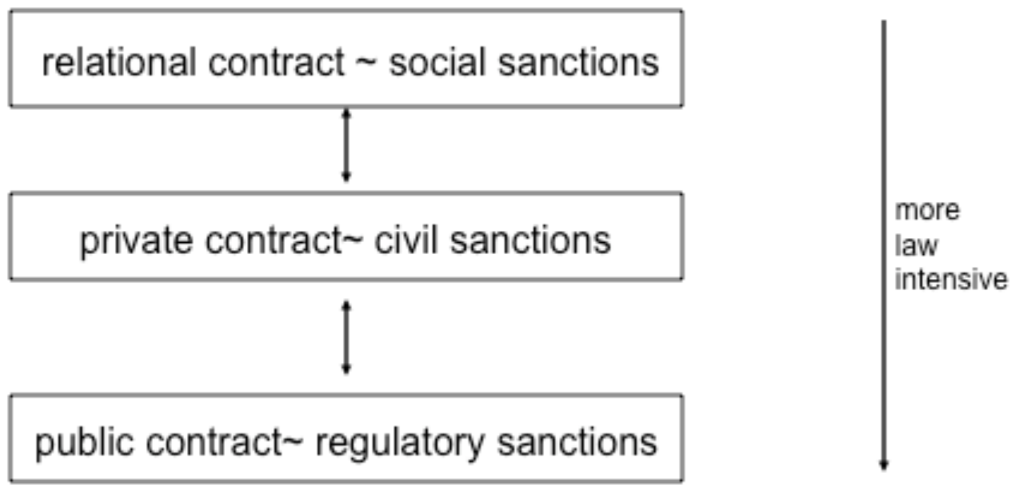
[2] In the language of game theory, an effective commitment transforms the payoff matrix of a game with a non-cooperation equilibrium into a game with a cooperative equilibrium that is more productive. See R. Cooter and T. Ulen,, 2007, “Law and Economics”, 5th Edition, Boston Mass. et al., Pearson Addison Wesley, Chapter 6. See Schäfer, H.-B. and Ott, C. (2004), “The Economic Analysis of Civil Law”, London, Edward Elgar, Chapter 13.

Figure 5.1. Three Types of Contracts and Sanctions



The same three-way distinction applies to contracts, as depicted in Figure 5.1. "Relational contracts" refer to promises among people embedded in enduring relationships who rely on social sanctions for enforcement, such as the promises that an uncle makes when hiring his nephew. "Private contracts" refer to promises among private persons who rely on civil sanctions for their enforcement, such as a written contract between a homebuilder and a family. And "public contracts" refer to promises with essential terms prescribed by state regulations, such as stocks sold in an exchange.[3] This chapter explains each of

3 "Relational contracts" and "private contracts" are standard terms in legal scholarship that we use in the conventional way. "Public contracts" has no single, standardized meaning. We use the term for contracts with essential terms that the state prescribes and enforces by regulations. In contrast, another possible meaning for the term is a contract in which the state is a party, such as a procurement contract by the military.

the three types of contracts in turn, with emphasis on the distinctive features of private and public law in developing countries.[4]

Relational Contracts and Social Sanctions

Human beings originally lived in small groups of kinsmen and friends who relied on each other. Although tribal life has faded, relatives and friends remain important for economic life, even in big firms and large cities. In northern Italy and Hong Kong, kinship glues together many firms, some of which have grown into business empires like Fiat and Sassoon. In Switzerland and Israel, friendships formed in the army shape industries. And in the 19th century, corporate America started among men who fought beside each other in the Civil War.

Where states do not enforce contracts effectively, businesses rely on relationships.[5] In the 11th century, the states around the Mediterranean Sea were fragmented, without effective international laws. Yet Jews based in Egypt traded extensively in the region by contracts among relatives and friends.[6] Much the same is true today among Indian traders in Africa, Chinese merchants in Papua New Guinea, and Vietnamese businessmen.[7]

The scale of modern business necessarily involves interactions with people who are not relatives or friends. In these circumstances, businessmen often rely on a substitute for kinship and friendship: They deal with the same people over and over again. In Japan workers in large companies traditionally

[4] For a related theory of how contracts evolve, see Marcel Fafchamps, Marcel Fafchamps, "Fafchamps, Marcel (2002) "Spontaneous Market Emergence. Topics in Theoretical Economics: Vol. 2 : Iss. 1, Article 2 (2002). Available at: http://www.bepress.com/bejte/topics/vol2/iss1/art2Markets, Trust and Reputation.

[5] A. Greif, P. Milgrom, B. Weingast (1994). „Coordination, Commitment and Enforcement: The Case of the Merchant Guild." Journal of Political Economy, Chicago, University of Chicago Press, 102 (3): 745-76. Greif, A. (1997). "Microtheory and Recent Developments in the Study of Economic Institutions through Economic History", in Kreps, D. M./Wallis, K. F. (eds.). "Advances in Economic Theory". Cambridge: Cambridge University Press page is missing.

[6] Avner Greif, "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coailtion," American Economic Review 83 (1993): 525-548.

[7] MacMillan, D. and Woodruff, W. (1999). "Dispute Prevention without Courts in Vietnam", *15 J Law & Economic Org.,* Oxford, Oxford University Press, *pp.* 637-658.

enjoyed lifetime employment, manufacturers traditionally preferred to deal with one or two suppliers for each input, and companies traditionally financed themselves through one main bank. Outside Japan, repeat transactions dominate some economic sectors in most countries. Thus civil servants worldwide seldom change jobs, many Apple computer users are fiercely loyal, depositors seldom change banks, retailers buy repeatedly from the same wholesaler, and franchisors and franchisees divorce less often than married couples.

How do people use relationships to enforce promises? When chimpanzees groom each other, they apply the principal, "Clean my fur today and I'll clean yours tomorrow." Like a chimpanzee troop, kinship and friendship provide a framework for reciprocity that remains fundamental to social life. In business the principle of reciprocity is, "Create a benefit for me now and I'll create a benefit of similar value for you in the near future." The principle has two elements: the implicit promise to give a future benefit, which is a matter of honesty; and the commensurability of benefits given and received, which is a matter of fairness. A businessman who breaks his promises to return a favor will be called dishonest, and a businessman who gives a small favor in return for a large one will be called unfair.

Whether in markets or organizations, people in repeat transactions reciprocate like grooming chimpanzees. To confirm business experience, laboratory experiments found that reciprocity is the most popular strategy on repeated games and it is often the most profitable.[8]

Earlier we characterized a contract as a promise with material sanctions for breaking it. "Relational contract" refers to a promise made by people in a relationship who can enforce it through sanctions that come from society, not the state.[9] People in relationships can commitment to doing what they say by submitting to the threat of social sanctions.

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[8] Recprocity is called "tit-for-tat" in game theory. See Dixit, A. K./Nalebuff, B. J., (1991), "Thinking Strategically", London, Norton

[9] The classic paper on relational contracting is Macaulay, S. (1963). "Non-contractual Relations in Business: A Preliminary Study." American Sociological Review 28, pp.55-69 28: 55-69. To see

If you break your promise to come to family dinner on Sunday evening, your mother can punish you in a thousand small ways. The same is true in repeated business transactions. The most common problems of contracting are non-payment of bills, late delivery, and poor performance. For non-payment, a typical reciprocation is suspension of supply; for late delivery, it is delayed payment; and for poor performance, it is partial payment.

With relationships, the parties often make vague promises and adapt their behavior to circumstances as they arise. For example, when you promise your mother to be home in time for dinner, you do not stipulate the acceptable excuses for arriving late. Similarly, the parties in repeated business transactions rely heavily on implicit understandings that adapt to changing circumstances. Thus a wholesaler and retailer in a good relationship are flexible about what counts as late delivery of goods and the remedy for it. Flexibility can stop quickly if the relationship deteriorates or ends.[10]

With reciprocity, each person punishes someone who wrongs him. With "generalized reciprocity," people punish someone who wrongs someone else. The main social sanctions are reciprocity, reputation, and ostracism. In business, ostracism usually takes the form of refusing to deal with someone. Families, small towns, firms and networks hum with gossip and ostracism. Gossip provides information, and misinformation, about who wronged whom, and ostracism provides the sanction.

Organizations can enforce reciprocity by formalizing sanctions for wrongdoing. Thus London merchants in the 18th century signed notes promising to repay the named party on presentation of the piece of paper. As these notes circulated, other people endorsed them and guaranteed repayment of the debt. Quakers, a small Protestant religious sect, expelled anyone who endorsed a noted and failed to repay. As a result, merchants were especially willing to take notes from Quakers as payment. Max Weber thought that such behavior by

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where the study of relational contracts has gone, look at Goldberg, V. (2007). "Framing Contract law", Cambridge, Mass. et al., Harvard University Press.

[10] Lisa Bernstein, "Private Commercial Law in the Cotton Industry: Creating Cooperation Through Rules, Norms, and Institutions," 99 Michigan Law Rev 1651 (2001).

Protestant Christians supplied the ethical foundation for the industrial revolution.[11]

As another example, each medieval European town or guild held its merchants collectively responsible for contracts with outsiders. If merchant α in town A failed to pay debts to merchant β in town B, then the merchants in town B could seize and hold any merchant from town A until the debt to merchant β was repaid. Foreseeing this fact, the merchants in town A pressured their members repay their debts. Collective responsibility facilitated trade over long distances. As we will explain in the next chapter, collective responsibility remains important today for lending to the poor.[12]

We mentioned that business relies on relational sanctions to enforce contracts when state law is ineffective. Even where states enforce contract law effectively, however, businesses prefer to avoid state enforcement. Relational enforcement is so much cheaper and quicker, if it works. To avoid relying on state law to enforce contracts, people cultivate "relationships" or "connections," which Chinese call "guanxi." Besides cultivating relationships, businesses avoid state enforcement by writing good contracts. The art of writing good contracts includes reducing a large exchange into a series of small, reciprocal exchanges that social sanctions can enforce.

To illustrate, when I buy a sausage at a street fair, I pay and I get the sausage simultaneously. Simultaneous exchange does not require promises. In contrast, when I pay you now for the promise of future delivery of a good, a gap in time allows promise-breaking to slip in. A good contract divides the large exchange into a series of small exchanges. Thus a contract to construct an office building that takes a year to complete usually provides for small, periodic payments for completing each stage in the project. The ultimate goal is a "self-enforcing contract" in which each party expects to gain more at each stage by keeping his promises than breaking them. Good contracts are drafted to come

[11] Weber's renowned book is The Protestant Ethic and the Spirit of Capitalism.
[12] Greif, A. (1989). "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi. Traders.", Journal of Economic History, Cambridge University Press 49 (4): 857-882.

as close to self-enforcement as possible, but perfect self-enforcement is usually impossible without the threat of state enforcement.[13]

Having discussed the strengths of relational contracts, we turn to their characteristic weakness. To sustain a business relationship, a person must deal with someone for reasons of history and sentiment, instead of dealing with the cheapest seller, richest buyer, hardest worker, or best creator. In brief, relational contracting increases trust by reducing competition. To illustrate, a cooperative factory in the city of Palampur, India burns coal to roast tea. The cooperative buys coal at the beginning of the tea harvest and stores enough on its grounds to burn over several months. Keeping a large inventory of coal ties up scarce capital. Instead of storing coal, the cooperative could develop a relationship with one reliable seller to deliver coal as needed. A relationship with one seller, however, would preclude buying from a cheaper seller. Buying from the cheapest seller apparently saves enough money to pay for storing coal.[14]

If the state enforced contracts more effectively in Palampur, the tea cooperative could seek bids for future delivery of coal. A future contract allows competitive pricing without the need for inventories. In general, statistical research shows that companies in poor countries with ineffective contract law keep larger inventories than equivalent businesses in rich countries with effective contract law. Comparable enterprises like cement factories or breweries keep 30% to 50% higher inventories in countries with ineffective contract law.[15]

Ineffective state law channels transactions into long run relationships and away from the best deals. Thus a survey asked businessmen in Peru how much the price of an input would have to fall to induce them to switch from their current

[13] Self-enforcing mechanisms analyzed by economists have exotic names such as hostage exchange, bonding, vertical integration, efficiency wages, co-ownership, and franchising. Self-enforcing devices for markets and hierarchies are discussed in Williamson (1985) and Williamson (1990). **Footnote is incomplete.**

[14] Schaefer observed this tea cooperative.

[15] Schaefer's observation of the tea factory at Palampur prompted statistical research that proved this result. See Raja, A. /Schaefer, H.-B. (2007) "Are Inventories a Buffer against Weak Legal Systems? A Cross Coutry Study", Kyklos, Malden, Mass. et al., Blackwell Publishing, Vol. 60, No. 3, pp. 415-439. Fafchamps et.al (2000) show firms in Zimbabwe reduce contract risk by increased inventory holdings Fafchamps, M./ Gunning, J. W./Oostendorp, R. (2000). "Inventories and Risk in African Manufactoring", *Economic Journal,* Malden Mass. et al., Blackwell Publishing.. Vol. 110, pp. 861- 893

supplier to a new supplier. The average answer was 30%. They explained their reluctance to change by ineffective contract enforcement. In Peru, the security provided by a long run relationship with a supplier is worth roughly 30% of the cost of the supplies.[16]

We have explained that relational contracting has the disadvantage of reducing competition. Besides this economic cost, relational contracting facilitates discrimination and distrust among groups of people. Insiders often give lower prices, higher wages, and fairer terms to each other than to outsiders, who often exaggerate their mistreatment. These abuses can aggravate the natural vulnerability of a wealthy, inward-looking minority to scape-goating and racism. Thus in the 1960s many African countries drove out merchants of Indian descent, and Indonesian politicians episodically unleashed mobs on Chinese shopkeepers.

Besides the economic and social disadvantages of reduced competition, relational contracting has another problem: Sometimes it is impractical or impossible. Most people do not buy enough cars, houses, or corporations to deal repeatedly with the same seller. One-time transactions yield an immediate payoff to unscrupulous behavior, without significant future costs such as damaged reputation. Only a naïve buyer would rely on the reputation of a car salesman, real estate agent, or financier in most countries.

Our final example of the limits of relational contracts concerns proximity.[17] Nearness strengthens relationships. Thus a clothes wholesaler in Dar es Salaam, Tanzania, has strong enough relationships with retailers in shops around the city to supply on credit. Local business can flourish in spite of ineffective state enforcement of contracts, but distance attenuates relationships. The wholesaler in Dar es Salaam would like to supply retailers in Mwanza in northern Tanzania, but relationship with them is too thin to rely on credit.

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[16] Eyzaguirre, H. (2004), "*El impacto del Poder Judicial en la inversión privada (Impact of Power of Judiciary in the private investment*)", University of California, Berkeley Berkeley Program in Law & Economics, Annual Papers to ALACDE - Latin American and Caribbean Law and Economics Association, Lima, Peru.

[17] Thanks to Kenneth Leonard for this example, which is inspired by Marcel Fafchamps, Market Institutions in Sub--Saharan Africa: Theory and Evidence (MIT Press, 2005). Especially see page 59.

Ironically, the merchant in Dar es Salaam may be able to deal on credit with London by using letters of credit enforceable in English courts.[18]

Relational contracting at a distance creates profitable opportunities for "middlemen" to complete the sales chain.[19] By establishing enduring relationships with buyers and sellers, middlemen can trade over distances without enforceable contracts, as shown by studies of Ghana,[20] South East Asia[21], and overseas Chinese.[22] Thus the merchant in Dar es Salaam in the preceding example may find a relative in Mwanza to serve as middleman for local retailers.

Middlemen perform a valuable service by moving goods from people who value them less to people who value them more.[23] However the public, which does not appreciate this fact, asks "How can they get wealthy without making anything? They must be up to something crooked!" In weak legal systems, middlemen often belong to relatively small, ethnic minorities, like Indians in black Africa, Arabs in Mexico, and Chinese in Papua New Guinea. As middlemen,

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[18] In some countries, transactions are easy locally due to relational contracts, difficult nationally due to ineffective domestic law, and easy internationally due to effective foreign law. These legal facts create a pattern in developing nations: Local business flourishes, national business stagnates, and international business flourishes. Dixit, A. K. (2004), "Lawlessness and Society, Alternative Modes of Government",Princeton, N. J. et al., Princeton University Press. pp. 125. Also, the World Summit 2005, High level Plenary meeting 14-16 September 2005, Tunis, Building Momentum to End Poverty characterizes developing countries as being "crippled by weak internal markets".

[19] E. Z. Gabre-Madhin (2003), Of Markets and Middlemen: Transaction Costs and Institutions in the Ethiopian Grain Market, the World Bank, Working Paper, pp. 1-39.

[20] Fafchamps, F. (1996). "The Enforcement of Commercial Contracts in Ghana". World Development, Elsevier Science, Vol. 24, No. 3, pp.427-448 (22*)*

[21] Redding, G. (1990). "*The Spirit of Chinese Capitalism".* Berlin, de Gruyter.

[22] (Bayly 1983) Fafchamps, M./ Gunning, J. W./Oostendorp, R. (2000). "Inventories and Risk in African Manufactoring", Malden Mass. et. al., Blackwell Publishing, *Economic Journal.* Vol. 110: 861- 893. J.T. Landa (1981) A Theory of the Ethnically Homogenous Middleman Group: an Institutional Alternative to Contract Law, The Journal of Legal Studies 1981,10,2, pp. 349, Chicago.

[23] Here's an example: Li, who lives in a small town near Wuhan, has a Xiali automobile in good repair. The pleasure of owning and driving the car is worth $3,000 to Li. Wu, who has been coveting the car, inherits some money and decides to try to buy the car from Li. After inspecting the car, Wu decides that the pleasure of owning and driving it is worth $4000 to her. A sale will transfer the automobile from Li who values it at $3,000 to Wu who values it at $4,000. The gain of $1,000 is surplus from the exchange. In general, voluntary exchange creates a surplus by moving a resource from a lower valued use to a higher valued use.

such a group can build trust among its members, while provoking distrust among outsiders that can have tragic consequences.

As explained, relational contracting reduces competition and fails altogether in one-time transactions or high-value transactions. Rather than just relying on social sanctions, people need the state's help to commit to keeping their promises, which is our next topic.

Private Contracts and Civil Sanctions

No one has enough relatives, friends, or repeat customers to achieve the scale of economic activity required for affluence. Economic development must extend the sphere of cooperation beyond relationships to encompass strangers.[24] When dealing with strangers, social sanctions are not enough protection from unreliable, careless, unlucky, mistaken, confused, or misleading promises, as well as from dissemblers, liars, rationalizers, frauds, and cheats. Now we explain how state enforcement of promises enables strangers to commit to doing what they say.

"Private law" traditionally refers to those bodies of law that enable individuals who suffer harm to obtain a remedy from the injurer in a state court or similar body. We use "private contract" to refer to those promises where the victim of breach can obtain a remedy from the promise-breaker in a state court or similar body. Unlike relational contracts, the remedy for breach of a private contract is a state sanction, not a social sanction. (Later we distinguish private contracts from public contracts.) Effective private contracts enable strangers to commit to doing what they say, so strangers can cooperate even when significant money is at stake. Conversely, private contracts are ineffective when the threat of a state sanction does not give most self-interested people sufficient incentive to perform as promised. We will describe some defects in the law of private contracts that especially afflict poor countries and inhibit cooperation in business.

[24] This is a central theme in Douglas North's many influential writings on develop economics and institutions. For example, see ADD CITE

Written contract law in developing countries mostly resembles written contract law in developed countries. For contract law-on-the-books, Mexico and Columbia resemble Spain and France, India and Nigeria resemble England, and Taiwan, China, and Korea resemble Germany. The writing is similar, but its application is dissimilar. Application of law cause the most important differences in the effectiveness of contract law in different countries, as we explain beginning with delays

When someone breaks a contract and the victim seeks a state remedy, delays can occur at each stage in the legal process – filing a legal complain, discovering the facts, settling or litigating, appealing a decision, and enforcing a judgment against the defendant. Before becoming Germany's greatest poet, Johann Wolfgang von Goethe worked as a lawyer at the Imperial Court in 1771 where he saw "a monstrous chaos of papers lay swelled up and increased every year." Some legal cases remained on the docket for more than 100 years, and one case filed in 1459 was still awaiting a decision in 1734".[25]

Slow, uncertain legal processes cause a rational person to discount the court's remedy, like a ten-year junk bond. To illustrate, assume that a Mexican borrows 10,000 pesos from a bank and promises to repay 1,000 each month for 12 months. Having received the loan, the borrower makes 8 monthly payments and then stops paying when he still owes 4,000. The bank must go through legal proceedings to collect it. If the legal process is too slow and uncertain, the bank may give up without trying. Foreseeing the outcome, banks stop making such loans.[26] With deep discounting of remedies, state law cannot empower people to commit to keeping their promises.

Is this hypothetical example typical? Using survey data collected by the World Bank, Figure 4.2 ranks countries according to the number of days required to enforce a contract by means of a lawsuit. The data, however, show large

[25] See World Bank/Djankow, S./Klein, M. U./International Finance Corporation (2004), "Doing Business (2004)", New York, World Bank and Oxford University Press, World Bank Publications, p. 65.

[26] Debt collection was the first topic of discussion raised by members of the Mexican Supreme Court with Cooter in 2002.

differences around the world that correlate roughly with per capita income. The countries with enforcement delays of less than 300 days are mostly high-income countries (except the misleading cases of China and Vietnam[27]), and the countries with delays exceeding 500 days are mostly low-income countries (except Italy). The general pattern in 4.2 is persuasive, but comparisons between individual countries demand caution because of errors in the data.[28]

Figure 4.2. Time in Days to Enforce a Contract By Means of a Suit

Short Delays		Medium Delays		Long Delays	
Country	**Days**	**Country**	**Days**	**Country**	**Days**
New Zealand	109	Hungary	335	Rep. Congo	560
Singapore	120	Romania	335	Indonesia	570
Russia	178	Austria	342	Israel	585
Australia	181	Kenya	360	Bolivia	591
Ukraine	183	Canada	364	Philippines	600
Denmark	190	Germany	394	South Africa	600
Sweden	208	Algeria	397	Morocco	615
Hong Kong	211	Netherlands	408	Brazil	616
Switzerland	215	Mexico	415	Uruguay	655
Ireland	217	Turkey	420	Ethiopia	690
Belarus	225	Venezuela	435	Greece	730
Finland	228	Bulgaria	440	Czech Rep	820
UK	229	Malaysia	450	Pakistan	880
Korea	230	Nigeria	457	Poland	980
Japan	242	Chile	480	Egypt	1010
China	292	Portugal	495	Italy	1210
Vietnam	295	Botswana	501	Colombia	1346
Peru	300	Taiwan	510	India	1420
USA	300	Spain	515	Bangladesh	1442
Belgium	328	Argentina	520		
France	331	Iran	520		

Source: Doing Business Data, Worldbank, 2007.

Besides delays, another defect is vague laws with unpredictable consequences. Art. 7 of the Chinese Civil Code stipulates that

[27] Central planning in China and Vietnam required courts to meet their quota of decisions, just like farms and factories had to meet their production quotas. Because of this tradition, cases are decided quickly, which is admirable. However, the quality of the decisions is allegedly low, much like the quality of goods supplied to meet production quotas.

[28] The first reason for caution is that the measure of speed in the survey is imperfect. Some countries like the USA or the UK have small claims courts with a streamlined and swift procedure, and only large claims go to the ordinary courts. The second reason is that speed of resolution says nothing about its quality. A court can decide a case in no time by flipping a coin.

> ”In concluding or performing a contract, the parties shall abide by the relevant laws and administrative regulations, as well as observe social ethics, and may not disrupt social and economic order or harm the public interests”.

Is there any private activity that some official would not construe as violating Art.7? If you are the victim of breach of contract, instead of suing, you might prefer to keep your head down and hope the authorities do not scrutinize your business to see whether your activities harm ethics, social order, or the public interest. Indian law does better. Section 23 of the Indian Contract Act regards any contract as void if it “would defeat any provision of law… or the Court regards it as. …opposed to public policy.”[29] Although open ended, at least this proposition refers to laws and policies, rather than ethics, social order, or public interest.

Judges significantly control vagueness in contract law. In deciding a case, judges try to rely on explicit terms of the contract, not implicit understandings. Thus a contract to build a factory will stipulate some acceptable excuses for late completion, unlike a promise to join mom for Sunday dinner. However, even the most explicit contracts require interpretation through contract law, which includes precise rules and general principles. By stressing precise rules, courts can interpret contracts formally and inflexibly. By stressing general principles, courts can interpret contracts informally and flexibly.

To illustrate, a pervasive contract principle in civil law is “good faith” (bona fides) and it’s opposite “bad faith” (exceptio doli generalis). Using “good faith,“ German judges can alter almost any aspect of a contract that they regard as dishonest, unfair, unreasonable, or bad for business. They can impose an obligation not stipulated in the contract, set damages to under-compensate the victim, set damages to over-compensate the victim, fix specific levels of due

[29] See Pratapchand Nopaji vs. Kotrike Venkatta Setty & Sons and Ors, *Civil Appeal Nos.* 2382-2384 of 1968, decided on 12.12. 1974. Note that this is consistent with the common law tradition of courts refusing to enforce promises to perform criminal acts or promises by a citizen to pay a state official for performing his official duties.

care, create a duty to disclose information, or render a contract void.[30] Acceptance of the good faith rule has spread across civil law countries in recent decades, although countries differ in their willingness to follow German judges and overturn explicit contract terms.[31] At the polar opposite from Germany, English judges following the common law tradition reject the principle of good faith and defer more strictly to the explicit terms of the contract.[32]

Recent papers in development economics contrast the civil law and common law traditions.[33] These influential papers characterize civil law as formalistic and inflexible, and common law as informal and flexible. This characterization will surprise German judges who apply the civil law principle of good faith so flexibly, and it will surprise English judges who reject the principle of good faith and interpret contracts literally.[34] As the principle diffuses to developing countries, we cannot detect a difference in its acceptance that depends on the country's civil or common-law origins.[35] We believe that formality

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[30] See examples in Zimmermann, R./Whittaker, S. (ed.), 2000, "Surveying the legal landscape in Good Faith in European Contract Law" Cambridge (et al.), *Cambridge University Press*.

[31] The "good faith" principle is part of Holland's new Civil Code of 1992. It was also introduced in Canada. Ejan, M./Leblanc, V./Kost-de Sèvres, N./Darankoum, E. (2003), « L'économie de la bonne foi contractuelle », in: *Pineau,J./* Moore, B. (ed.), 2003, « Mélanges Jean Pineau « Montréal, Éditions Thémis, 421-459. The so-called Lando Principles, a European model contract law, include "good faith". The USA included "good faith" in the Unified Commercial Code in 1981 and in the restatement (second). The UN-sales law (CISG) of 1980 introduced it in Art.7. The same applies for the private international law of merchants, the UNIDROIT principles. Brazil included it into contract law in a legal reform of 1990.

[32] Note, however, that good faith" was introduced in Britain through the back door by the European directive on unfair terms in consumer contracts.

[33] La Porta, R./Shleifer, A./Vishny, R. W./Lopez De Silames, F. (1998), „Law and Finance", Journal of Political Economy, Chicago, University of Chicago Press, Vol. 106, No. 6

[34] In Walford v. Miles, the British House of Lords rejected the principle as being inconsistent with the adversarial position of the parties Miles, W. v.(1992), 2 W.L.R. 174, at 181 (H.L.). English judges favor more specific rules like "implied terms", "misrepresentation", "fraud", "custom" and "usage. The difference between German and English interpretation of contracts affect their length. Frankfurt bankers write short contracts that refer to the principle of good faith. Longer contracts are unnecessary because German judges interpret the terms flexibly. In contrast, London bankers write long contracts because English judges interpret the terms literally, so the contract must provide explicitly for all contingencies.

[35] The Russian Supreme Court seems reluctant to develop civil law along general principles of fairness. See Kozlov, V. B. (1996), "The New Russian Civil Code of 1994", Rome *http://w3.uniroma1.it/idc/centro/publications/21kozlov.pdf., pp.* 1-30. Kozlow writes about abstract priciples of justice: "These principles are not expressly mentioned in the Civil Code and the Russian judiciary has in great many cases demonstrated its unwillingness to apply and develop them in Russia., ibid. p. 25.

and flexibility depend on the way a nation has developed its legal heritage, not whether it began with civil or common law.

In any case, "Good Faith" can be compared with a Lamborghini automobile -- the fastest car demands the best driver, or else expect a crash. High quality judges have good educations, understand business and markets, do not take bribes, and do not bend to political influence. The power to interpret contracts flexibility works better in their hands than in the hands of judges without these strengths. Conversely, when judges fall short on quality and independence, formalistic rules will work better than flexible rules. Formality helps to insulate citizens and judges from political intrusion. Thus making the courts follow formal laws has an advantage in states like Russia where politicians are tempted to interfere with judges in private disputes.

Indian law provides a useful application of this principle. The judges in India's Supreme Court and the High Court are well educated and independent. They have authority to use the principle of good faith to develop law. In contrast, the lower courts judges are poorly educated and too often corrupt. They are not allowed to use the principle of good faith to develop law.[36]

Next we consider a special problem of state remedies for breach of contract in developing countries. The usual court remedy for breaking a contract is money damages.[37] Collecting money damages from poor people, however, is

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In contrast, the Chinese Contract Law of 1999 recognizes the "good faith" principle, but Chinese courts have not yet applied this new principle. Zheng, Q. (2000), "A Comparative Study on the Good Faith Principle of Contract Law", *Unusuniversus*, 38-65. http://www.iolaw.org.cn/en/art2.asp.

Brazil adopted "good faith" in a reform of 1990, but a survey for Brazil indicates "excessive formalism" as one of the main causes for distrust in courts, which suggests that the principle of good faith has not been used very well. Dakolias, M. (1999), "Court Performance around the World", *World Bank Technical Paper*, Washington D. C., World Bank, 1-72.

In India, the Supreme Court used the good faith principle 731 times from 1950 to March 2007, according to the Manupatra data base.

[36] Article 141 of the Constitution of India "The law declared by the Supreme Court shall be binding on all courts within the territory of India". A similar solution giving more but not full authority to lower courts could allow a lower court judge to present the case to the Supreme Court, if he believes, that the law contradicts the principle of good faith. Referral is the procedure in the European Union where every national court can refer a case to the European Court of Justice.

[37] The economic analysis of contract law has taken great pains to work out differences in the incentive effects of alternative measures of damages. For an overview, see Cooter, R./Ulen, T. (2007), "Law and Economics", 5th edition, Boston Mass. (et al.), Pearson Addison-Wesley,

often impractical -- they cannot pay, or they have no bank account to garnish wages, or their wages are unrecorded and unprovable, or their wealth is hidden, or their property is inseparable from their relatives' property. According to a recent estimate, roughly eleven per cent of the population is in this situation in rich countries, and the proportion is much higher in poor countries.[38] The inability to collect money damages from poor people stops them from committing to keeping promises to strangers, so distrust destroys the economic advantages of cooperating with strangers. Sometimes courts aggravate the problem by deciding contract disputes in favor of the poorer party, regardless of the merits of the case. Such court practices, which impede the poor from obtaining the advantages of cooperating with the rich, are a sharp punishment disguised as a reward, like cream containing listeria germs.

Besides poor defendants, money damages require pricing broken promises, which can be difficult or impossible. To illustrate, assume that someone pays her neighbor for a used refrigerator and the seller fails to deliver it. To award money damages, the court will have to determine the used refrigerator's market value. Perhaps price controls, import licenses, multiple exchange rates, and buying privileges cause people to queue for refrigerators. Or perhaps the prices of used refrigerators are seldom advertised. In either case, the refrigerator's full cost includes time spent looking for one to buy at a good price. When prices are not public and the full cost exceeds the market price, courts have difficulty getting the information needed to assess money damages. (Money damages have other problems that we will not discuss.[39])

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chapters 6 and 7, or see Schaefer, H.-B./Ott, C. (2004) "The Economic analysis of Civil Law", 1st edition, London, Eward Elgar,, chapter 13

[38] In rich OECD countries 11 percent can be regarded as judgment proof because they receive an income that is half the median income or lower. Förster, M./ d'Ercole, M. M. (2005) "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", OECD Social Employment and Migration Working Paper No. 22, OECD Directorate for Employment, Labour and Social Affairs, Paris.

[39]Another problem concerns corruption. The judge can vary damages continuously, which helps to disguise corruption and bribes. Thus the defendant might pay the judge a bribe equal to ten percent of the stakes in the case and the judge might reduce damages by twenty percent. In general, money damages facilitate corruption of courts. Compared to money damages, specific performance makes disguising corruption harder. We thank Henrik Lando for this insight.

These difficulties with money damages suggest that courts in poor countries should look for an alternative remedy for breach of contract. What other remedies are there? The other leading remedy is a court order requiring the defendant to perform as promised called “specific performance”.[40] Defendants usually respond to court orders because defying them can ripen into the crime of contempt of court. In some circumstances, however, specific performance is infeasible. To illustrate, a contractor cannot meet a deadline that has already passed, and a seller cannot deliver a refrigerator that it already shipped to someone else. When performance impossible as in these examples, a court order to perform is pointless.

However, cases often arise in which specific performance has fewer problems than the damage remedy. If the court orders the defendant to perform as promised, the court obviously does not have to collect money from the defendant or determine the market value of performance. In the refrigerator case, the court can order the seller to give the refrigerator to the buyer as promised. To execute this order, a policeman may need to find the refrigerator, which is probably easier than finding the money paid for it.

We have explained that poor defendants and thin markets tilt the preferred remedy for breach of contract towards specific performance when it is possible, and away from money damages. Thus legal scholars in communist countries where markets were thin associated “socialist contract law” with specific performance, whereas money compensation belonged to “capitalist contract law.”[41] Conversely, As an economy becomes more commercialized and monetized, thicker markets and liberalized prices tilt the preferred remedy for

[40] According to legal theory, the basic remedy in civil law countries for breach of contracts is specific performance, and the basic remedy in common law countries is expectation damages, but one legal system almost always apply the same remedy as the other in the same circumstances.

[41] In the planned economies of socialist countries, stores sold goods at official prices, but the goods were in short supply. A person with money might not be able to find anyone willing to sell a good at its official price. People got into the end of a line to buy things in Soviet Russia, according to many jokes, without knowing what was for sale at the front of the line. Little wonder that, instead of compensation at official prices, communist enterprises preferred specific performance as the remedy for broken contracts. Yu, Y. (1986), “The Evolution of Contract Law in China: Comparisons with the West and the Soviet Union”, *Studies In Comparative Communism*, Guildford, Butterworths, Vol. 19, Issues 3-4, 193-212.

breach of contract towards money damages. Thus European countries that replaced communism with capitalism after 1989 moved towards money damages and away from specific performance, and China has apparently done the same.[42]

Public Contracts and Administrative Sanctions

We have explained that private contracts enable strangers to cooperate by making commitments to do what they say. Sometimes, however, the power to commit is not enough to enable strangers to cooperate, as we illustrate by food retailing. Grocers in Old Delhi bazaars compete vigorously to sell rice, wheat, peas, nuts, curry, fruits, cookies, bottled drinks, and other foods. Traditional Indians do not trust the quality of pre-packaged food. A bag of rice might contain stones to increase its weight, a bag of peas might contain rat feces, or fruit might be old. Food is sold in open bags or piled on counters so buyers see and taste it. Instead of seeing and tasting the food, repeat dealings with the same sellers could protect buyers against hidden defects. To build loyalty, sellers would not sell impure, unclean, or spoiled food to their repeat customers. Instead of repeat dealings, however, most consumers in Old Delhi apparently prefer to buy from the seller who offers the best price that day.

Unlike Old Delhi, supermarkets sell pre-packaged and pre-weighed foods. Regulators punish sales of impure, unsafe, unhealthy, falsely labeled, or under-weighed food. To avoid complaints to regulators, many sellers give disgruntled consumers a replacement or their money back. When regulations sustain the purity, safety, health, truthfulness, and accuracy of weights and measures, buyers can focus more on getting the best price, not on who is making the offer.

Failed regulations for food can have tragic consequences as Chinese consumers recently experienced. At least 13,000 Chinese children were hospitalized and 4 died in 2008 because Chinese regulators closed their eyes to adulterated baby food, milk and yoghurt. Consumers of imported food in Taiwan,

[42] The traditional rule was specific performance. The contract law reform of 1999 includes damages and specific performance and leaves the choice at the discretion of the plaintiff.Zhu, N. (2005), "A Case Study of Legal Transplant: The Possibility of Efficient Breach in China", *Georgetown Journal of International Law, Washington D. C., Law Center, Vol. 36, p. 1145 .*

Japan and Singapore were also affected.[43] After such an experience, how long will parents wait before they trust these sellers enough to buy from them again?

We have discussed foods where sellers know more about quality than buyers. The gap in information between sellers and buyers is wider and harder to close for complicated contracts like insurance, loans, mortgages, and employment. People who buy health insurance must trust that their insurer will reimburse reasonable claims, lenders must trust that borrowers will repay their loans, stockholders must trust that firms have honest audits, and employees must trust managers of their pension plan.

Regulators can increase competition in these markets by enforcing standardized terms. Thus one seller cannot mean something different from another who says that a basket contains 2 kilograms of rice, and one company cannot mean something different from another who tells an investor that the company's books have been audited. With standardization, buyers can compare offers from many sellers without negotiating with each of them. To illustrate, buyers purchase stocks from the cheapest seller on the Singapore stock exchange, whereas borrowers negotiated loans individually with Singapore investment banks. We have explained that public contracts can increase competition by reducing the information gap between buyers and sellers. More trust by buyers enables them to focus on getting the best price, not on who is making the offer as in relational contracting, and not on differences in non-price terms as in private contracts. When the legal system strengthens, people buy more packaged food, health insurance, stocks, refrigerators on credit, and so forth.[44]

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[43] See www.msnbc.msn.com/id/26901721/ last visited Sept. 30 2008.

[44] For access to health insurance see WHO, World Health Report (2005) Statistical appendix. For access to banking data are scattered and depend on household surveys. For access to formal banking see S. Claessens (2005) Access to Financial Services:A Review of the Issues and Public Policy Objectives, World Bank Policy Research Working Paper Series No. 3589.pp. 1-38. In the USA this quota of banked persons was 91 per cent (2001), in India 47 per cent (2003), in China 42 per cent (1997) in Brazil (urban areas) 43 per cent (2003) and in Pakistan 12 per cent (1991), See Statistical. Appendix , Table 1.

We use phrase "public terms" to describe terms in contracts prescribed by the state and enforced by regulators. Unlike private terms in a contract, the public terms are mandatory in the sense that the private parties cannot easily change them. Also, unlike private terms, regulators actively police contracts to assure that they contain the public terms, rather than relying entirely on suits by the private parties. Effective public terms enable strangers to cooperate when suspicion would otherwise preclude it. (Note that some great advances in economic theory in recent decades explain how differences in the information of buyers and sellers affect markets.[45])

When almost all terms in a contract are public, as with most marriages, we say that it is a "pubic contract."[46] When almost no terms in a contract are public, as when people contract in the Old Delhi Bazaar, we say that it is a "private contract." In reality, most contracts locate between these polar types and contain both private and public terms.

We have explained how regulations contribute to the legal foundation of competitive markets. Now we turn to the opposite – choice-choking regulations that retard contracting. To illustrate, in Great Britain in the 1960s, running the trains required disobeying many regulations. The railroad unions, consequently, could shut down the rail system for a few days by following all of its rules. "Work-to-rule," as it was called, was a mini-strike that paralyzed the railroad system. Similarly, businessmen and workers must violate many regulations in order to get things done, especially in poor countries. Thus a builder in Cairo violates building restrictions, a worker and employer in Brazil evade employment taxes, and a manufacturer in Russia runs a factory without a permit to do business.

Throughout the world, much of the economy operates in the "grey market" between the "white market" of legality and the "black market" of criminality, especially in developing countries. A survey of 145 countries estimated that gray markets activities produce between 30% and 40% of GNP (gross domestic

[45] The Nobel Prize committee acknowledged this fact in 2001 by awarding the prize jointly to three pioneers of information economics -- George A. Akerlof, A. Michael Spence, and Joseph E. Stiglitz.
[46] In another usage, not ours, "public contracts" refers to contracts *with* the state.

product).[47] The gray market's share of total employment is even higher than its share of GNP.[48] Cooperation and productivity increases when the state enforces gray market contracts. Nevertheless, judges in some developing countries believe that legal doctrines require them to refuse to enforce gray market contracts.[49]

Even when judges will enforce gray market contracts, the parties may be unwilling to sue in public courts. When a gray market business goes to court, officials may notice that some of its operations violate regulations. The plaintiff often loses more by bringing himself to the attention of government regulators than he can win in a civil suit.

We have explained that parties avoid civil courts because their contract might be void and the state may prosecute them for regulatory violations.[50] Unlike many developing countries, German legal doctrine and practice avoid this result. German regulatory violations seldom void contracts, and German prosecutors seldom act on regulatory violations revealed in a civil trial. Thus a gardener in the German gray market who does not pay taxes can sue an employer for unpaid wages without fear of triggering an investigation by tax collectors. And a customer who buys a restaurant meal at an hour when law requires the closing of restaurants still has to pay his credit card bill. The same applies for a construction contract that violates zoning regulations, or a credit contract that violates banking regulations. Although seldom discussed in

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[47] Schneider, _F. (2005) "The Size of Shadow Economies in 145 Countries from 1999 to 2003", IZA, Discussion Paper No. 1431

[48] This follows from the fact that the informal sector produces less per worker than the formal sector.

[49] One such doctrine is the principle of void for illegality. See See Hay, J. R./Shleiffer, A./Vishny, R. W. (1995), "Toward a Theory of Legal Reform",*http://post.economics.harvard.edu/faculty/shleifer/papers/TheoryLegalReform.pdf*, pp. 1-13. Another such doctrine is "ultra vires" -- e.g. the doctrine is void unless firm's corporate charter authorizes the activity in question. In the gray market, the firm has no charter, or it has a charter that deliberate makes no reference to its gray market activities, or the state deliberately issues charters that do not encompass all of the company's foreseeable activities. Thus the manufacturer of a cement mixer may be unable to enforce a sales contract with a fitness studio because the latter's charter does not encompass mixing cement.

[50] Hay, J. R./Shleiffer, A./Vishny, R. W. (1995), "Toward a Theory of Legal Reform",*http://post.economics.harvard.edu/faculty/shleifer/papers/TheoryLegalReform.pdf*, pp. 1-13.

constitutional law, separating the civil courts from the regulators and police is an important part of the separation of powers, especially in countries with a large gray market.

Conclusion

The preceding chapter concerns the property principle for economic growth: People who create wealth can keep most of it. Successful implementation of the property principle gives people motivation to make wealth, not to take it. Besides motivation, making wealth requires coordinating the efforts of different people. This chapter concerns the *contract principle for economic cooperation: The law should enable people to commit to doing what they say.* When this principle is implemented, people can trust each other enough to work together, even when money is at stake.

Taken together, the property principle and the contract principle provide motivation and coordination for economic activities. Innovation is the central economic activity for sustained growth. Developing a new idea requires innovator and investor to overcome their distrust, which we called the double trust dilemma. Cooperation between them occurs under conditions of "immeasurable risk" -- the parties cannot think of all the possible outcomes or assign probabilities to many that they can think of.[51] Also, each of them observes only a fraction of the other's activities. They cannot make enforceable promises regarding unforeseen outcomes and unobservable acts. Consequently, contracts to develop innovations are incomplete, with many implicit terms.

In the first stage of finance in Silicon Valley, immeasurable risk is so great that relational contracting dominates As development of the innovation proceeds in the second stage, risk falls, cooperation extends to more strangers, and the parties rely more on private contracts with many explicitly negotiated terms. Finally, when the innovation diffuses in the third stage, finance

[51] Uncertainty was defined as immeasurable risk in F. Knight's classic, Risk, Uncertainty, and Profit (New York: Houghton-Mifflin, 1921).

encompasses a broader public, which requires more standardization and regulation of contracts. All three forms of contracting coexist in a developed economy. In a developing country, business relies more intensively on state enforcement of contracts as it becomes more effective.

Innovations in organizations and markets create novel contracts. Judges perceive the business purposes of novel contracts dimly, not clearly. Consequently, innovative businesses need talented lawyers who can write contracts that accurately express the parties' commitments in language that judges can easily interpret. With good contracts, judges and other officials help the parties to achieve their business purposes by interpreting the contracts as written.