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Emulation versus Comparative Advantage: Competing and Complementary Principles in the History of Economic Policy

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The objective of this chapter is to show how economic policies based on completely different principles—one described as ‘emulation’ and the other as ‘comparative advantage’—have been strategically employed in order to achieve economic development when nations have made the transition from poor to wealthy. It also briefly describes key aspects of the process by which Europe, through emulation, developed from a collection of fiefdoms ruled by warlords into city-states and later to nation-states. It is argued that the timing of the strategic shift from emulation to comparative advantage is of utmost importance to a nation. Making this policy shift too early will hamper development much as a late shift will do. It is argued that these principles, although sometimes under different names, were well known and employed by European nations from the seventeenth century onwards—in the United States all the way to the end of the nineteenth century—and that the Marshall Plan implemented more than 60 years ago owed its success to putting the principle of emulation chronologically *ahead* of *comparative advantage*.

The *Oxford English Dictionary* defines emulation as “the endeavor to equal or surpass others in any achievement or quality”; also “the desire or ambition to equal or to excel.” In eighteenth-century political and economic discourse, emulation was essentially a positive and active effort, to be contrasted with envy or jealousy (Hont, 2005). In modern terms emulation finds its approximate counterparts in the terminology of US economist Moses Abramowitz, whose ideas of ‘catching-up,’ ‘forging ahead,’ and ‘falling behind’ resonate with the same understanding of dynamic competition. In his 1693 work English economist Joshua Child made the emulative nature of English catching-up very clear: “If we intend to have the Trade of the World, we must imitate the Dutch, who make the worst as well as the best of all manufactures, that we may be in a capacity of serving all Markets, and all Humors.”

By focusing on barter alone, leaving out the dynamics of innovation and competition, Ricardian trade theory neglects a core element inherent to capitalism. There is no forging ahead, nor is there any falling behind, in Ricardian economics, nor in any other type of economics based on metaphors of equilibrium. In a Schumpeterian framework, the rents created by innovation, and later eroded by competitors emulating that innovation, represents the core of what capitalism is all about: relentless innovation in order to create innovation rents, followed by relentless emulation that dilutes and reduces the same rents. The precondition for Thorstein Veblen’s

‘pecuniary emulation’ is a Schumpeterian ‘technological emulation.’ This chapter aims to establish a skeleton for a Schumpeterian theory of international trade as it relates to uneven economic growth.

A frequent nineteenth-century continental European and US criticism of Ricardian economics is that it operated with ‘units void of any qualitative characteristics’ (*qualitätslose Grössen*). This chapter argues that Ricardian trade theory—by visualizing the world economy as the bartering of labor hours void of any qualitative factors (importantly also knowledge)—abstracts from and leaves out the qualitative changes, or development, that take place in human society over time. The qualitative difference between one labor hour in Silicon Valley and one in African subsistence agriculture may in fact account for the failure of free trade to even out factor prices of labor in the two areas.

Finally the chapter discusses the important timing aspect of the transition from emulation to free trade. Clearly both free trade and industrialization will have their special interest groups, and promoters of both can revert to cronyism and corruption to get their favorite policies accepted. The US Civil War represents a classic case of infighting between a ‘comparative advantage’ South insisting on immediate free trade and an ‘emulative’ North insisting on following England’s path to industrialization. It is argued that the negative effects from an overdose of emulation are considerably less than from an overdose of premature free trade; a nation will be better off in the long run if the North rather than the South wins its civil war.

Emulation and ‘management by gut feeling’

A key argument in this chapter is that in many situations emulation is the intuitive gut reaction to a problem. Therefore emulation—especially when it blatantly contradicts ruling trade theory—will tend to be used intuitively in situations close to home, whereas comparative advantage tends to be imposed scientifically on nations far away. The oxymoronic concept of ‘managed free trade’ is the result of this tension between home turf intuition (e.g. Europe’s conviction today that they also need a manufacturer of large commercial airplanes to compete with Boeing) and a simultaneous scientific conviction in Europe that African countries are better off sticking to their comparative advantage in agriculture. I further argue that the principle of ‘first emulation, then comparative advantage’ has been the strategy followed by all presently wealthy nations, with the *possible* exception of naturally wealthy nations that were void of raw materials and happened to be the first to industrialize. The Dutch Republic and Venice would be the prime examples of such states, wealthy as compared to the laggard countries at the time (Reinert, 2007a and 2009).

This chapter explains the main building blocks of the anti-Ricardian intuition underlying technological change and progress that create the tacit and intuitive logic of emulation.

Emulation generally requires initial tariffs, what John Stuart Mill and many scholars thereafter called infant industry protection. No businessperson expects an industrial company to make money from day one; he or she is willing to sustain losses for several years until the company starts making money. The similar logic was used for centuries as regards industrial systems. A new industry could not be expected to be profitable immediately. Indeed England protected her manufacturing industry heavily for more than 350 years, the United States only for about 100 years, and Korea for only 40 years. However, the *timing* of this protection was crucial: the same institution that in one context would cause *increased* welfare would, in another context, *decrease* welfare. Once a certain domestic industrial capacity has been reached, however, competitiveness can only be maintained through access to larger markets. If industrial dynamics are to decide, as they did in the United States towards the end of the nineteenth century, beyond a certain point the not-so-infant industry will be interested in freer trade in order to stay competitive a) because new technology tends to come with larger capacity and b) because of domestic competitive pressure. If industrialization is then successful, and protection keeps companies on their toes, the same type of industrial vested interests that once favored protection will now favor freer trade in order to conquer foreign markets. The vested interests behind new and expanding technologies and a large scale of production will tend to crowd out the less dynamic ones favoring continued protection, all leading to a 'natural' transition from protection to free trade. However, when 'bad protection' (as defined later) dominates, a nation may get stuck with a sub-scale and technologically mature manufacturing sector. The general rule is, as was observed by an anonymous Italian political economist traveling in Holland in the eighteenth century, "Tariffs are as useful for introducing the arts in a country, as they are damaging once these are established." (Anonymous, 1786) This observer in fact constructed a core principle of a Schumpeterian trade theory based on an underlying assumption of industrial dynamics.

Comparing two sets of countries over a period of 50 years, Figure 4.1 illustrates the activity-specific nature of economic growth. Korea was for a long time poorer than Somalia, but was allowed to shift its comparative advantage away from a natural comparative advantage in diminishing returns activities to a man-made comparative advantage in increasing returns activities. Singapore was for a long time poorer than Peru, but takes off in the 1970s. The curve also shows how an inefficient and overly protected manufacturing sector in Peru produced a higher standard of living than a de-industrialized Peru. Both cases illustrate the problem of creating middle-

income countries: countries seem to cluster in a successful group and a race-to-the-bottom group. This chapter suggests approaches to creating such middle-income countries.

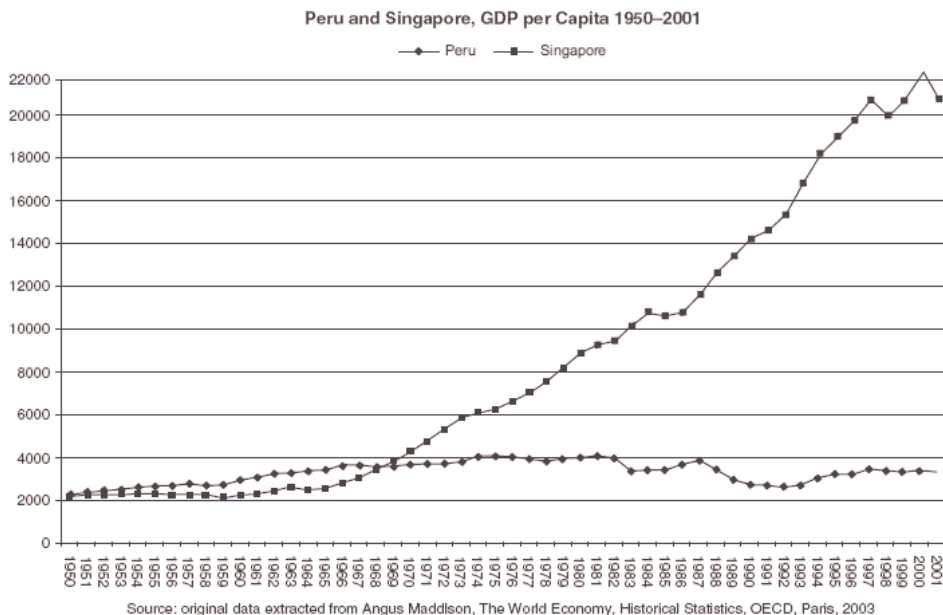
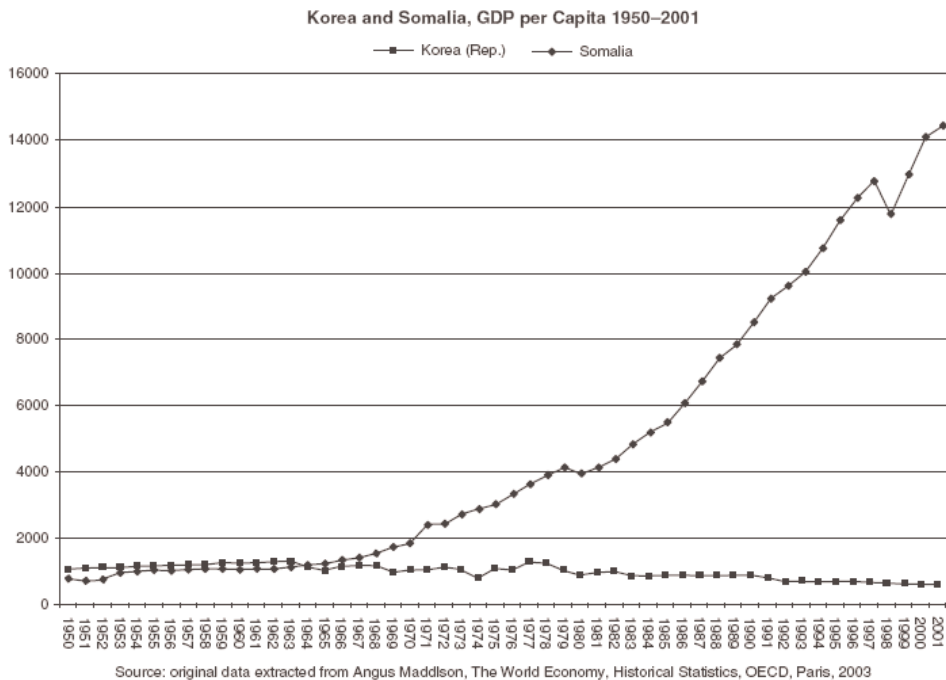


Figure 4.1. Emulation vs. ‘wrong’ comparative advantage

Source: Reinert, Amaizo, and Kattel (2007).

Renaissance: the birth of the politics and economics of emulation and economic growth

It's commonly said that capitalism arrived in the United States when the first boats landed on North American shores. We can say even more confidently that industrial policy arrived in Europe with the same boats as did the Renaissance. Philosophers from the Byzantine Empire were instrumental in creating the Renaissance—literally re-birth—in Italy. In addition to bringing new texts of classical Greek philosophy, particularly by adding Plato to Aristotle, who had been known earlier, they also brought to Italy a new religious interpretation of Man as a creative being. Creation became Man's pleasurable duty (Reinert and Daastøl, 1997). The most influential of these philosophers from Byzantium was Georgios Gemistos Plethon (c.1360–1452) whose lectures in Florence inspired Cosimo Medici to establish a Renaissance milestone: the Platonic Academy. Plethon, the contemporary living individual who more than anyone else influenced Renaissance philosophy, also brought with him a view on economic policy: "Plethon praised protectionist policy as a means to stimulate a Byzantine economy suffering from the competition of Italian industry and trade."¹

In a somewhat macabre way, Plethon's economic policy and the plight of his dead body together illustrate the most important principle of Europe's successful economic policy during the last 500 years: the policy of emulation (Hont, 2005; and Reinert, 2007a). "The propensity for emulation ... is of ancient growth and is a pervading trait of human nature" said Thorstein Veblen in his *Theory of the Leisure Class* (Veblen, 1899). In twentieth-century economics, emulation tended to be limited to Veblen's pecuniary emulation on an individual level by 'keeping up with the Joneses' in terms of consumption. Starting in the Renaissance, and even more self-consciously during the Enlightenment, from the point of view of a city-state or nation-state, emulation on the production side was a perquisite for emulation of consumption.

In his works *Luxury and Capitalism* (1913a) and *War and Capitalism* (1913b), Werner Sombart outlines the role of emulation both through luxury, where art was an important element, and by the way of warfare for the development of capitalism.² Just as trade later was seen as 'war by other means,' also emulation in luxury and in war were intertwined. There is no reason to believe that Leonardo da Vinci (1452–1519)—who was born near Florence the year Plethon died—was less proud of his ingenious war machines than of his wonderful art. In fact the rulers' patronage of art was

¹ *The Oxford Dictionary of Byzantium*, Vol. 1.

² Sombart (1928) gives the complete story. See Mitchell (1929) for an English résumé.

part of a competition between states not unlike war. Artists were patronized by rulers for similar reasons as were mercenaries, as tools for catching-up and forging ahead to use the language of Moses Abramowitz.

Sigismondo Malatesta (1417–1468), the ruler of Rimini, was one of the worst and most violent tyrants of the Renaissance. At the same time, he shared and promoted the Renaissance cult of art and letters (Hutton, 1926). Sheltering many humanists and poets at his court, Malatesta epitomizes the Renaissance when it can be argued that economic emulation and capitalism consciously were promoted in order to channel human passions and activities away from violence into more constructive activities. This point is made brilliantly by Albert Hirschman in his book *The Passions and the Interests* (1977).

In 1438, the same year Plethon lectured in Florence, Sigismondo Malatesta was engaged in a serious game of emulation with Florence. That year Malatesta brought Filippo Brunelleschi, the father of Renaissance architecture, to Rimini. Two years earlier Brunelleschi had finished the Florence cathedral. Subsequently, the greatest architectural theorist of the age, Leon Battista Alberti, led a team of distinguished designers in remodelling an ancient Franciscan basilica into a church-monument to Sigismondo and his ancestors, transforming it into an edifice without parallel in the peninsula. In this temple, now known as the Tempio Malatestiano, the famous artist Piero della Francesca adorned the interior with a fresco and a painting of Sigismondo (now in the Louvre), and Florence's most admired sculptor Agostino di Duccio embellished the building with the most important work of his career. Sigismondo Malatesta simultaneously epitomizes the most barbaric violence and the most refined art of the Renaissance.

Later in life, after most Italian states—including the Papal State—had turned violently against him, Sigismondo Malatesta sought new fortune as general for Venice in its war against the Ottoman Empire, as a field commander in Peloponnesus (1464–1466). On his way home, Malatesta engaged in what was by then a traditional European act of emulation: adding to the prestige of a city through the acquisition of saints' body parts. The most spectacular, and at the same time most successful, act of emulation through dead bodies took place in the year 828 when Venetian sailors stole the body of St. Mark from Alexandria. St. Mark was later made the patron saint of the city, where the cathedral built above his crypt still dominates the city today.

It was typical of Sigismondo Malatesta and his time that when he returned from Peloponnesus in 1465, he brought as a souvenir back to Rimini not the traditional hallowed remains of some Eastern Christian Saint but—sensitive to the shift towards veneration for knowledge rather than for saint-

hood—he brought back to Europe the bones of Georgios Gemistos Plethon, the man who with Plato also brought industrial policy to Europe. The last ‘primitive’ warlord in Europe had the remains of Plethon buried in the Tempio Malatestiano in Rimini. The actions of Sigismondo Malatesta—“The Mastiff of Rimini”—testify to the role of emulation in three key areas in the creation and shaping of modern capitalism: the emulation in war, in luxury (as shown by Sombart), and in learning (in what Veblen called ‘idle curiosity’). And, we might add, as a Veblenian example of the conspicuous consumption that came to characterize capitalism, Malatesta exhibited Plethon’s stone coffin outside the main church in Rimini. There it can still be found today.

Novelty, Diversity, Scale, Synergy: Bringing non-Ricardian elements back in

With Adam Smith’s influence on economics, several factors which had been prominent until then became peripheral. These were the most important insights of Renaissance and Enlightenment economics: novelty (innovation), diversity (heterogeneity), scale (increasing returns), and synergy. Although the labor theory of value can be traced back all the way to Arab historian and economist Ibn Khaldoun (1331–1406), compared to those of his predecessors Adam Smith’s greatest innovation was reducing production and trade into a single unit of measurement: labor. A higher theoretical level of extraction was achieved by abstracting from the complications and vicissitudes inherent to production. On the basis of this, a generation later David Ricardo constructed his theory of international trade and comparative advantage with the bartering of goods embodying labor hours of identical quality as the key feature of the world economy.

In order to appreciate the history of economic policy, it is necessary to recreate a theoretical structure by adding back in the key elements left out by Ricardo, or perhaps more accurately stated, by his followers. Pre-Smithian economics would not have accepted that the international economy could possibly be represented as a system ultimately centered around the barter of labor hours. Pre-Ricardian logic had an underlying understanding that what a country produced would determine how wealthy it was: if all stockbrokers are wealthier than all the personnel cleaning their offices, a nation of stockbrokers will be considerably wealthier than a nation of cleaning personnel. Any static Ricardian gain from specialization will in this case be totally dwarfed by the qualitative and activity-specific differences between the profession of being a stockbroker and that of cleaning floors.

I suggest the elements that Ricardian economics left out of the profession can be captured under the headings of Novelty, Diversity, Scale, and

Synergy and the interaction between these factors. *Novelty*, or innovation, is at any point in time focused in few activities, in the stone industry in the Stone Age and in cotton spinning during the first Industrial Revolution. This creates *diversity* or *heterogeneity* as a key feature of economic life (Audretsch, 2004). As we shall discuss below, technological change and increasing returns – *novelty* and *scale* – though very different phenomena, often come packaged as Siamese twins. In a world with oligopolistic competition some economic activities may catapult the real wages of a nation relative to others (Ireland is a recent example. See Reinert, 2007a; see also the examples of Korea and Singapore in Figure 4.1), while other nations specialize in activities bereft of innovation and novelty, seriously limiting the possibilities for growth (classical *maquila* industries). When judged with the standard canon perfect-competition model, successful development projects are indeed gigantic ‘market failures’ (compare Cimoli, Dosi, Nelson, and Stiglitz in this volume). The models of the standard canon, assuming non-increasing returns and perfect competition, in fact describe the situation in raw material producing poor countries much more accurately than they describe the situation in the rich world (Singer, 1950 presents an argument based on the same asymmetry).

Pre-Smithian economics saw economic growth and welfare as a synergy-based phenomenon, and that the existence and strength of such synergy is determined by the presence or absence of novelty and diversity. This perspective is still exceedingly relevant in order to understand the world distribution of wealth and poverty. We shall return to this when discussing Johann Heinrich von Thünen’s economic theories.

Facing diversity and heterogeneity forces choices upon the researcher. Between a position where all human beings are alike as economic agents (‘perfect information’) and dealing with 6 billion unique individuals, finding an appropriate level of abstraction for analysis is difficult. This presents the economics profession with a trade-off between relevancy and accuracy. As Schumpeter says, “The general reader will have to make up his mind, whether he wants *simple* answers to his questions or *useful* ones—in this as in other economic matters he cannot have both” (Schumpeter in Zeuthen, 1930). In the spirit of Schumpeter’s first book (Schumpeter, 1908) one should first pose a question and then enter into theory at a level of abstraction where one is likely to find an answer to the question. If the question we want answered is one of diversity in development experience between countries, a theory that—like Ricardian trade theory—a priori *excludes* all diversity, hierarchies, and learning processes is unlikely to be of much help. In fact it may be argued that the conclusion of standard trade theory, economic harmony and factor price equalization, is indeed already built into the assumptions on which this theory rests. A theory that starts out with no diversity is not likely to have diversity as an outcome.

Another problem related to this emerges from what Abramowitz calls the ‘factor-bias’ of economic development. Different economic activities also have different factor-biases. Oil refining has a much stronger bias towards the use of capital and knowledge than does the production of slippers. Likewise, the indivisibility and scale-bias of an oil refinery also pulls in the same direction: barriers to entry (see Bain, 1956, among many others) in petroleum refining are likely to establish much higher wages there than in the slipper factory, regardless of skill level. As a Ugandan politician once told me, the barriers to entry and monopolistic competition in the production of beer in Uganda produce wage levels among brewery cleaning personnel approaching that of high government officials. And nepotism flourishes.

Diversity: economies as hierarchies

Adding a dynamic dimension to this we can use Nathan Rosenberg’s observation that technological change at any point in time tends to be focused in certain areas (Perez, 2002 and 2004). Figure 4.2 attempts to establish a Quality Index of Economic Activities that brings together the qualitative elements, static and dynamic, from which Ricardian trade theory abstracts (Reinert, 1994). The Quality Index pulls together the factors that explain why the world’s most efficient producers of such a low-tech product as baseballs—in Haiti or Honduras—have a real wage that is only a fraction of the wage of the world’s largest producer of golf balls. A tiny static gain from trade through specialization may indeed be completely overshadowed by the loss one nation suffers from specializing at the bottom of the hierarchy of skills. This is an attempt to codify the Myrdalian notion that increased specialization and trade may indeed *increase* rather than *decrease* international wage differentials.



Figure 4.2. The quality index of economic activities

This hierarchy argument comes in two parts, one which is essentially static and one that is dynamic and developmental.

First the static argument. By failing to differentiate qualitatively between disparate units of labor hours, standard Ricardian theory fails to account for the qualitative differences between economic activities and, paired together, the possible ensuing benefits that comparative advantages might carry with them. We fail to grasp the fact that the real world consists of hierarchies of different sorts, within companies and institutions and between them.

Take into account the way that most of the Ricardian assumptions underlying the advantages of specialization neglect all differential learning economies. I shall discuss, focusing on the following example involving a vertically integrated activity which includes a 'high-skill' and a 'low-skill' part.

Let us illustrate the relationship between hierarchies and standard of living. If we abstract from geography and assume a world economy consisting only of hospital services, we could create a world economy where all the specialized medical staff lived in one country, and all the nurses lived in another. Suppose also that both in the 'autarchic' world and in the integrated one, the cost of each input is determined by the technology of its training (i.e. its labor content). Assume it is equal to 1 in both countries for nurses, while for doctors it is 2 in country A and 3 in country B. In the system of autarchy a unit of hospital services (one doctor plus one nurse) costs 3 in country A and 4 in country B. Now let them integrate, while continuing to assume that incomes are proportional to the (direct and indirect) content of labor. After integration, B will fully specialize in nurses and A in doctors. Overall 'world average costs of production' will be 3. (i.e. 1 for the nurse and 2 for the doctor) but country B will see its share of world income fall to one half of that of country A (i.e. the relative price of nurses to doctors). Putting the children of the nursing personnel in the same schools as those of the medical doctors would foster social mobility and income growth under autarchy. However, if they are placed in different countries, the socially mobile children of cleaning personnel who manage to get an education as a doctor will migrate to the rich countries in order to increase their income. As Gunnar Myrdal predicted, in this way the market frequently tends to enlarge already existing differences in income rather than to narrow them.

The logic that a nation could upgrade its hierarchy of skills in the same way that a person could is found in the work of US economist Daniel Raymond, whose 1820 book heavily influenced the establishment of the protectionist American System of Manufactures. Through the early decades of the nineteenth century, England was the only country with a comparative advan-

tage in manufacturing, and it was fairly obvious that it used Ricardo's logic in an attempt to prevent other countries from industrializing. The frequent response from other countries that followed its path to industrialization was a biblical quote, Joshua 9:23, pointing precisely to the fact that the world economy corresponded to a hierarchical structure: "and now, cursed are ye, and none of you is cut off from being a servant, even hewers of wood and drawers of water, for the house of my God." Today's wealthy nations followed England into industrialization, against the recommendations of Ricardo's trade theory, because they did not wish to be at the bottom of the world's economic hierarchy as hewers of wood and drawers of water.

It is now time to introduce dynamics into the hierarchy (Figure 4.2). From both sides of the political spectrum, Karl Marx and Joseph Schumpeter agree on the sterility of capital alone as a source of wealth. Innovations, rather than savings and capital per se, drive welfare forward. The world economy functions similarly to the world of *Alice in Wonderland*, where one of the strange figures tells Alice "this is how fast you have to run here in order to stand still"; only constant innovations sustain welfare. Once the builders of sailing ships topped the world hierarchy of ship builders, but they were pushed down after the steam engine and the diesel engine were invented. The world's best producer of kerosene lamps soon became poor with the advent of electricity. Status quo leads to poverty as technical change pushes old technologies, and those who stick to them, further down in the economic hierarchy. This is, of course, precisely what makes the capitalist system so dynamic, but this mechanism also contributes to creating such large differences between rich and poor countries. By introducing emulation as an alternative to comparative advantage, it is possible to introduce these dynamics into trade theory.

Schumpeter used a metaphor to describe society as a *dynamic* hierarchy, saying "the upper strata of society are like hotels which are ... always full of people, but people who are forever changing" (Schumpeter, 1934). The dynamics of radical technological change give rise to great fortunes and a new circulation of elites. Henry Ford brought in new technologies and new management principles and also created a financial fortune through them. A new set of people joined the upper strata through both production and finance-related gain on the new principles. More than half a century later new techno-economic paradigms fostered a new wave of 'creative destruction,' a new wave of entry and new dominant positions both within countries and across countries (Freeman and Perez, 1988; Perez and Soete, 1988; Perez, 2002). In Perez's scheme, economic development consists of what in my terminology are 'productivity explosions', technological breakthroughs that produce explosive increases in labor productivity. Figure 4.3 shows, as an illustration, the productivity explosion of the first Industrial Revolution, that of cotton spinning.

For the purposes of this essay, what is important to notice is that novel techno-economic paradigms also entail new windows of opportunities (Perez and Soete, 1988) and novel threats for the possibilities for poorer countries to catch up—with quite different outcomes (see also Castaldi et al. in this volume).

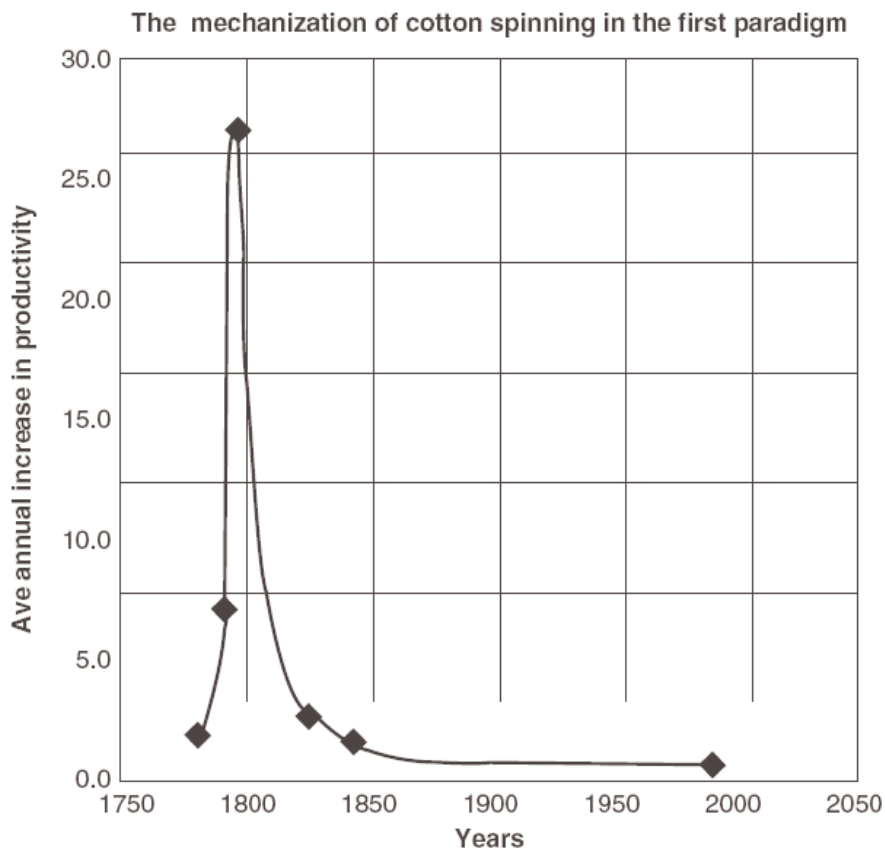


Figure 4.3. Quantum jump in productivity

Source: Carlota Perez.

Novelty and scale: accounting for qualitative change

During the most dramatic qualitative changes in contemporary economic history—during both the first and the second Industrial Revolutions—the economics profession developed ways of describing the change that was taking place by ways of theories of *stages* of qualitatively different historical periods. Such stage theories have been used in most of the social sciences (Ely, 1903, Reinert, 2000). In my view, if they do not become mechanical exercises they are useful tools for understanding technological and institutional change.

The two types of stage theories discussed above—David Ricardo vs. the early German and US theories—produce vastly different economic policies. As it is intuitively obvious that a hunting and gathering tribe will not be able to compete successfully with an industrial society, similarly emulation into the same technological age as the world's leading nation is a prerequisite before free trade's comparative advantage may take over as a guiding principle.

The logic accompanying such theories of qualitative economic change is that free trade is always beneficial between nations at the same level (stage) of development. Bringing back an old UNCTAD term, we could say that exchanging industrial goods for other industrial goods both produced under increasing returns represents 'symmetrical trade' which is beneficial to both parties, while exchanging commodities produced under non-increasing returns for goods produced under increasing returns conditions represents 'asymmetrical trade' and is only beneficial to the industrialized partner. We have argued elsewhere that the theories of 'good' and 'bad' trade that represented the mainstream of Enlightenment economics were based precisely on this same principle (Reinert and Reinert, 2005; for a formal argument along similar lines, see Dosi, Pavitt, and Soete, 1990).

In his four-volume work on the history of economic thought in the United States, Joseph Dorfman describes this very well when accounting for the attitude towards free trade in the United States around 1830:

Of course, free trade is the ideal, and the United States will proclaim the true cosmopolitan principles when the time is ripe. This will be when the United States has a hundred million people and the seas are covered with her ships; when American industry attains the greatest perfection, and New York is the greatest commercial emporium and Philadelphia the greatest manufacturing city in the world; and when 'no earthly power can longer resist the American Stars.' Then 'our children's children will proclaim freedom of trade throughout the world, by land and sea. (Dorfman, Vol. II)³

Dorfman here explains the principle that I argue has been the path taken by all industrialized nations: an initial state of protective emulation has been a mandatory passage point for all presently in industrial nations. With the possible exception of the very first leaders (Venice and the Dutch Republic) all presently rich nations have been through a period of protection. The

³ We should note that 'cosmopolitan principles' was the term used to refer to Ricardian economics, against which Friedrich List coined the term 'National Economics' (which still is the term for economics in Sweden). The other protest term against the cosmopolitan principles was 'Social Economics' (as economics was referred to in Norwegian until very recently) because the cosmopolitan principles, just as today, tended to disregard serious social consequences.

sequencing has always been 'emulation' before 'comparative advantage' (Reinert, 2007a and 2009).

Integrating nations at different stages of development creates forms of integration that we could call 'asymmetrical' (see Reinert and Kattel, 2004, for a taxonomy of types of integration). When this form of integration is done rapidly through shocks, an important phenomenon can be observed. When two nations at widely different technological levels integrate, the first casualty is *the most advanced* economic activity in *the least advanced* nation. I have referred to this as the Vanek-Reinert effect and argue that it represents one of the mechanisms of primitivization that accompany premature globalization. This Vanek-Reinert effect in turn contributes to falling employment for skilled people, to factor price *polarization*, and migration of skilled labor. For example, the effect can be observed with the unification of Italy during the late nineteenth century.

The mechanisms behind this effect are relatively straightforward. Abruptly freeing imports creates a shock in terms of reduced demand for national production. The companies with the highest relative fixed costs compared to variable costs are the hardest hit on their profit and loss statement. The companies that still have a high amount of machinery and equipment to be amortized are hit long before mature industries with depreciated machinery. Young industries that are cash-starved are hit long before mature cash-cows. All of this contributes to the opposite effect of what one might have meant: a too rapid economic integration leads to the loss of precisely those industries one would wish to promote, modern industries employing new technologies. The last economic activity to be hit from a free trade shock is subsistence agriculture where people simply withdraw from market activities back into self-sufficiency.

Diversity and synergy: Heinrich von Thünen's stages simultaneously spread across geography

While economists presently attempt to reintroduce geography (a process which has seen Paul Krugman as a major contributor), German economist Heinrich von Thünen is an early protagonist. Thünen (1783–1850) drew a map of civilized society with four concentric circles around a core of increasing returns activities—the city.⁴ Moving outwards from the city core, the use of capital gradually decreased and the use of nature gradually increased. Near the city the most perishable products are produced, such

⁴ The inventor of the concentric circles to explain the role of cities was Johann Heinrich Gottlob von Justi, in his *Gesammelte Politische und Finanzschriften über wichtige Gegenstände der Staatskunst, der Kriegswissenschaften und des Cameral und Finanzwesens, 1761–4*, Vol. 3.

as dairy products, vegetables, and fruit; grain for bread is produced further out; and in the periphery there is hunting in the wilderness. Economists today have rediscovered Thünen's approach to economic geography, but many totally miss the crucial point he stresses, that the increasing returns on city activities needed tariff protection in order to get the entire system to function. Thünen understood that the development machine at the core of the concentric circles—the urban increasing returns industries (manufacturing)—needed, for a time, targeting, nurturing, and protecting. In other words, the presence of an emulating city would also determine the standard of living in the rest of the country, in these outer circles.

Thünen drew the stage theory onto a map where the most 'modern' sector, manufacturing, formed the city core, and the most 'backward' sector, hunting and gathering, formed the periphery furthest from the city. Moving outward away from the city, the use of nature increases and the use of capital decreases. Only the city has authentic increasing returns, free from nature's flimsy supply of resources of different qualities.

As one moves outwards from the city, man-made comparative advantage (subject to increasing returns) gradually diminishes and nature-made comparative advantage (subject to diminishing returns) increases. As we move outwards in the circles, the carrying capacity of the land in terms of population also diminishes.

The importance of the linkages and synergies for agricultural development, seeing the benefits accruing to agriculture from the proximity of manufacturing, was perhaps the most important new insight in economics during the early 1700s. "Husbandry ... is never more effectually encouraged than by the increase of manufactures," says David Hume in his *History of England* (1767, Vol. III).

Thünen's model pictures all the stages of development inside one nation-state, one labor market, one school and university system, and one social security system. The synergies that David Hume points to are partly the result of an equal access to basic institutions and government services accruing to the 'hunters' in the outermost circle as well as to the city dweller. The local city market does to national agriculture what an international market can never do. Proximity to a city in the same labor market, rather than abroad, assures employment for the second and third son on the farm. The wage pressure from the city activities makes labor more expensive in the countryside, allowing for technological change that would never be profitable with low wage rates. The proximity to the city gives access to advanced technology and expertise that a rural-only nation would never achieve. All in all von Thünen's model provides a useful picture for development as a synergy between town and countryside.

Novelty and scale: understanding capitalism and the absence of economic development

In the post-Cold War setting we are increasingly made aware of nation-states with radically different political structures from those of Western democracies: 'fragile,' 'failed,' or 'failing' states ruled by warlords, such as Somalia or Afghanistan. Going back to pre-Cold War German and American theories of capitalism, it was generally considered that such political structures were products of particular modes of production (a term in no way exclusive to Marxism). As we shall see below, such states were defined as not being part of 'capitalism.' During the twentieth century Fordist mass production was the dominant mode of production in the US, Europe, and what the League of Nations called 'areas of recent settlement' (Canada, Australia, New Zealand), but not in the colonies.

This development implied use of technologies where economies of scale (and, relatedly, fixed costs) increased heavily over time. The transition from town economies to national economies was made possible by a larger division of labor—potentially favorable both to producer and consumer—because of the lower costs originating in technical change and increasing returns. A greater degree of impersonality—no longer knowing the person who produced your shoes—was the price society and the individual had to pay for getting cheaper shoes. On the production side, capitalism was a system driven by technological change and increasing returns. While perfectly distinguishable in theory, as they tend to develop over time, *increasing returns* and *technical change* are in fact so intertwined that they are often inseparable. The technology Ford used to produce cars was never available for a car producer who wanted to produce profitably at a household or village level. Schumpeter therefore coined a term which is extremely useful for the study of economic history: 'historical increasing returns' (a combination of both).

This combined technology-scale phenomenon hit different economic activities at different points in time, but when it hits it hits in an explosive way. In the industries that had been hit by this combined scale-technological change phenomenon, no return to perfect competition would be possible. The minimum efficient size of operations would create a pattern of competition where scale of operations created barriers to entry and consequently a type of competition that was by definition oligopolistic. The successful result of taming the imperfect competition between these huge players would, as John Kenneth Galbraith always pointed out, be a societal balance of countervailing powers between 'big business,' 'big labor,' and 'big government.'

The transition from handicraft (implying production made to order) to industrial production (implying production for an unknown group of consumers) also implied a transition from production 'in order to make a living' to production 'for profit.' Competition became a relentless game of oligopolistic innovation and emulation, seeking the rents that could be harvested from successfully getting a share of the oligopoly. As long as the rents are Schumpeterian rents which slowly erode rather than static rents, this rent-seeking is in fact a core mechanism explaining capitalist dynamics.

Werner Sombart's definition of colonies not being part of capitalism

During the Cold War two different definitions of capitalism crystallized. First: in the 'free world,' capitalism gradually came to be defined as a system of private ownership of the means of production, where all coordination outside firms is left to the market. This developed into a definition that excludes any reference to production: as long as they bartered without central planning one would almost assume that a Stone Age tribe could be considered 'capitalist.' Second: in Marxism capitalism was mainly defined as a system defined by a relationship between two classes in society, the owners of the means of production and the workers.

However, a third definition of capitalism exists, a definition that dominated until the Cold War, a definition that was crowded out because it could not be neatly placed along the right-left-axis. If we follow German economist Werner Sombart's definition of capitalism, we get an understanding of why capitalism—as it is defined today—is a system where it is possible to specialize in being rich, or in being poor.

Werner Sombart considers capitalism as a kind of historic coincidence, brought together by a whole range of circumstances which hold even if economic wealth is a result of a range of necessary although not sufficiently conscious policies. The driving forces of capitalism, which create both the foundation and the conditions for the system, are according to Sombart (1928): (i) *The entrepreneur*, who represents what Nietzsche calls the 'capital of human wit and will': the human agent who takes the initiative to have something produced or traded. (ii) *The modern state*, which creates the institutions enabling improvements in production and distribution, that creates the incentives that make the vested interest of the entrepreneur coincide with the vested interests of society at large. Institutions encompass everything from legislation to infrastructure, patents to protect new ideas, schools, universities, and standardization, for example, of units of measurements. (iii) *The machine process*, that is, what was long called *industrialism*: mechanization of production creating higher productivity and technological change with innovations under economies of scale and synergies,

embodied within 'national innovation systems' (in contemporary literature the notion is associated with Christopher Freeman, 1988 and 1994; Bengt-Åke Lundvall, 1992; and Richard Nelson, 1993).

In Sombart's definition of capitalism, the rich countries were those who emulated the leaders into the industrial age. With capitalism defined in this way, it is actually correct to say that the rich countries are the ones that joined the *mode of production* called capitalism.

Still according to Sombart, when these elements are in place capitalism demands the following ancillary elements in order to function and to be able to develop fully: (i) capital, (ii) labor, and (iii) markets.

These three elements—the very core of standard economic theory—are in Sombart's mind *not* the driving forces of capitalism, but simply auxiliary factors to the main driving forces. Without the driving forces, these ancillary factors, as important as they are, turn out to be sterile. Both Marx and Schumpeter agree that capital in itself, without innovations and without entrepreneurship, is sterile.

The most interesting aspect of this pre-Cold War definition of capitalism is that with this approach capitalism had not reached the colonies. At its core, colonialism was a technology policy: a key aspect of colonial policy was to prohibit manufacturing there. The following quote from English economist Joshua Gee, from his 1729 work, *Trade and Navigation of Great Britain Considered*, is typical of colonial economic policy:

That all Negroes shall be prohibited from weaving either Linnen or Woollen, or spinning or combing of Wooll, or working at any Manufacture of Iron, further than making it into Pig or Bar iron: That they be also prohibited from manufacturing of Hats, Stockings, or Leather of any Kind ... Indeed, if they set up Manufactures, and the Government afterwards shall be under a Necessity of stopping their Progress, we must not expect that it will be done with the same Ease that now it may.

The rebellion against these anti-emulation policies—which are less racist than they sound because they were also applied against the predominantly white settlements in North America at the time—has in all cases been accompanied by a strategy of emulation into manufacturing industries. Decolonization meant embarking on a program of industrialization. Not all of these attempts were equally successful, but if human welfare—rather than free trade per se—is our goal, we have to face the fact that in a majority of countries real wages were considerably higher when an 'inefficient' manufacturing sector was present than when it was not.

Not all protectionism is equally efficient. In another work *How Rich Countries got Rich... and Why Poor Countries Stay Poor* (Reinert, 2007a) we try to identify two ideal types of protectionism, 'good' (East Asian) protectionism and 'bad' (Latin American) protectionism.⁵ In many poor countries protectionist policies were clearly of the bad kind, but this bad protectionism produced real wages about twice as high as the wage level after structural adjustments and deindustrialization. Data reproduced in Reinert (2007a) makes it evident that maximizing world trade clearly is not the same as maximizing world real wages. The Washington Consensus system of 'conditionalities' created an anti-emulation effect.

Anti-emulation policies were also very frequent within Europe. Venice prohibited the migration of her skilled glass workers from finding work abroad with the penalty of death, while England for many years prohibited the export of machinery. If we see the debate on when to stop protection—when to switch from emulation to comparative advantage—as perhaps the most important economic debate in the times to come, the English machine case provides an interesting insight. England only stopped the export prohibition of machinery when the English machine producers themselves successfully argued that if they were restricted from competing in world markets they would lose ground to foreign machine producers. In other words, if the kind of protection employed is what we define as good protection policies, market forces can to some extent be relied on for fostering the transition to free trade and comparative advantage. Successful emulation provides the seeds of its own destruction, and the key underlying mechanism is Schumpeter's 'historical increasing returns' (the combination of technological change and increasing returns).

I have argued (Reinert, 2007a) that the only time Adam Smith uses the term 'invisible hand' in the *Wealth of Nations* is precisely when describing such a transition from emulation to comparative advantage. Smith praised the Navigation Acts protecting English manufacturing and shipping against Holland, arguing "they are as wise ... as if they had all been dictated by the most deliberate wisdom" and holding them to be "perhaps, the wisest of all the commercial regulations of England." The term invisible hand is used only when it supports the key import substitution goal of mercantilist policies, when—after successful emulation—the English consumer preferred domestic industry to foreign industry. This could only happen when the market had taken over the role previously played by protective measures, and national manufacturing no longer needed such protection. While Adam Smith tends to be used more these days to provide ideology than to pro-

⁵ See also Dosi, Freeman, and Fabiani (1994) for a similar concept.

vide theoretical solutions to contemporary problems, let us suggest that he can also be legitimately seen as an enlightened mercantilist who truly understood the transition from emulation to comparative advantage. Successful emulation through protection has been a mandatory passage point in all capitalist countries, but it must at one point yield to free trade.

The economist who more than anyone else had the transition from protectionism and free trade at the very core of his theoretical edifice was Friedrich List (1841). He was the visionary of a united Europe, when emulation through protection had successfully reached all nations of Europe. The 1846 Repeal of the Corn Laws was at the time understood as an attempt by the English to convince the rest of the world that their free trade in agricultural products meant that the rest of the world should adopt immediate free trade in manufacturing. In fact List had always argued for free trade in corn (Reinert, 1998).⁶

The Marshall Plan (1947) as the last successful project of emulation

In June 1947, in a speech delivered at Harvard University, US Secretary of State George Marshall announced a re-industrialization plan for a war-torn Europe—later called the Marshall Plan (formally The European Recovery Program). This plan represents the logic of emulation at its most creative: compared to the United States, Europe (it was believed, even if somewhat off mark) did not have a comparative advantage in industrial production. In spite of this—and totally contrary to Ricardian principles—a generous infusion of capital as well as tolerance of needed developmental policies ensured the rebirth of modern Europe as industrial states.

Over the next couple of decades, as the same type of economic development policy spread in Asia following the Korean War, the Marshall Plan developed into what is probably the most successful economic development assistance project in human history. Politically, it created a cordon sanitaire of wealthy countries from Western Europe to Northeast Asia, successfully containing the spread of Soviet influence, while ensuring rapid growth throughout the world during what has been termed the post-war 'Golden Age.'

⁶ Modern agricultural protectionism originates from only towards the very end of the nineteenth century, and is not an emulation project. At the early stages of industrialization it was generally argued that the farmers were much better off than the industrial workers because they had enough food. When workers' rights and the embryonic welfare state had been established, it was discovered that then the city was exploiting the poor farmers who had to be protected from the even poorer farmers abroad. It is extremely important to understand the very different motivations behind the two types of protectionism. I have previously referred to emulative manufacturing protection as 'aggressive protectionism' and to agricultural protectionism as 'protective protectionism.'

Apart from its historical importance, it is worth taking a fresh look at the Marshall Plan because it delivers valuable insights to the logic of emulation that have relevance today. First, it is important to recall that the Marshall Plan represented a complete reversal of the preceding Morgenthau Plan, named after US Secretary of the Treasury Henry Morgenthau, Jr. Germany had started two world wars, and in his 1945 book, *Germany is Our Problem*, Morgenthau announced a de-industrialization plan “converting Germany into a country principally agricultural and pastoral” to make sure it could never again go to war.

By late 1946, however, economic hardship and unemployment in Germany were worrying the Allies, and former President Herbert Hoover was sent there on a fact-finding mission. Hoover’s third report of March 18, 1947 noted: ‘There is the illusion that the New Germany left after the annexations can be reduced to a “pastoral state.” It cannot be done unless we exterminate or move 25,000,000 people out of it.’ He well understood that a purely agricultural country would only be able to sustain a much smaller population than a mixed agrarian and industrial nation.

Faced with the real possibility of an excess of people in need of work that a loss of industry would bring, the only option was to re-industrialize, which is what the Marshall Plan facilitated. Less than three months later, Marshall’s early June speech reversed policy. Germany and the rest of Europe were to be re-industrialized with policies that, in practice, included heavy-handed economic interventions such as high duties, quotas, and import prohibitions. Free trade was there, but it was envisaged as viable only after reconstruction and international competitiveness had been achieved. The 1948 Havana Charter may still serve as a blueprint for this approach, putting employment, welfare, and social goals as priorities to be achieved before free trade is introduced.

George Marshall’s short speech⁷ made four other important points. In describing how Germany’s economy had ground to a halt, Marshall noted the breakdown of trade between city and countryside: “The farmer has always produced the foodstuffs to exchange with the city dweller for the other necessities of life,” stressing that “this division of labor is the basis of modern civilization.” With this, Marshall recalled centuries-old European economic insight: the only wealthy nations were those with cities that held a manufacturing sector. “The remedy lies in breaking the vicious circle and restoring the confidence of the European people.” Marshall’s use of the expression ‘vicious circle’ was to become the vogue in development economics in the 1950s and 1960s.

⁷ <http://www.oecd.org/document/10/0,2340,en_2649_201185_1876938_1_1_1_1,00.html>

“Our policy is directed not against any country or doctrine but against hunger, poverty, desperation, and chaos. Its purpose should be the revival of a working economy in the world so as to permit the emergence of political and social conditions in which free institutions can exist,” said Marshall. Contrary to today’s conventional wisdom, Marshall argued that free institutions emanate from certain productive arrangements, not the other way around (Reinert 2007b).

Marshall was also very insightful about how to ensure that aid would be truly developmental. “Such assistance, I am convinced, must not be on a piecemeal basis as various crises develop. Any assistance that this Government may render in the future should provide a cure rather than a mere palliative.” Unfortunately, much of today’s ostensible development initiatives are palliative, ignoring Marshall’s caveat.

During recent decades, structural adjustment and forced trade liberalization have created effects similar to that of the Morgenthau Plan in many countries. While some large nations—like China and India—that had protected their industries for half a century and had given high-level education to significant portions of their populations have benefited from globalization, many of the other developing countries saw their real wages virtually halved by de-industrialization and unfettered global competition. Incipient industrialization in many parts of Africa regressed. During the last twenty years, premature and sudden exposure to world markets has brought about a steady loss of industry, decline in agriculture, and de-population in many regions now subject to vicious circles of immiseration.

We must rediscover the ancient art of emulation that died out sometime in the 1970s. More attention must be paid to rebuilding the productive structure of poor nations. This process requires a simultaneous build-up of the supply and demand sides—of productive capacity and purchasing power—just as the European economies did during the crucial decades following Marshall’s speech in June 1947. This seemingly roundabout development road is, in fact, the only one that can create a lasting peace.

The very last traces of Marshall Plan logic were seen in the integration of Spain into the European Union during the 1980s, gradually lowering tariffs and making sure that the Spanish automotive industry, with its layers of suppliers, survived. When the former centrally planned economies were integrated into Europe some two decades later, the medicine was shock therapy which left large parts of Eastern Europe virtually de-industrialized. The economies of the European periphery, in countries like Moldova, have many similarities to Third World peripheries (Reinert and Kattel, 2004).

Conclusion: industrial policy and poverty

On the basis of an analysis of the last 500 years of the history of economic policy, this chapter argues that all countries that have moved from poor to wealthy have done so by going through a period of emulation—of infant industry protection—in order to work their way into the areas where technological progress is concentrated at the time. This has been a mandatory passage point in human history. This emulative stage reduces the asymmetry in knowledge and technologies between rich and poor countries. The lack of skills and the lack of markets combine (vicious circles) to make any technology transfer simply not profitable without these added incentives. Only after this step has been achieved will it be in the interest of the catching-up country to specialize symmetrically according to its comparative advantage *within* the leading paradigms.

I have compared attempts to achieve this transition without artificial incentives to a businessperson expecting a new industrial company to make money from day one of operations. This is something that only happens in theory. Amazon.com’s many years in red ink may be compared to a nation weaning itself from industrial start-up costs.

Starting with the economic theory of Antonio Serra in 1613 economic development has been associated with economic activities subject to increasing returns and a large division of labor (Reinert and Reinert, 2005). I have labeled these Schumpeterian activities, contrasting them with what I have summarized under a ‘Malthusian’ archetype that only produces poverty (Table 4.1).

Table 4.1. Characteristics of Schumpeterian and Malthusian activities

Characteristics of Schumpeterian activities (= ‘good’ export activities)	Characteristics of Malthusian activities (= ‘bad’ export activities if no Schumpeterian sector present)
Increasing returns	Diminishing returns
Dynamic imperfect competition	‘Perfect competition’ (commodity competition)
Stable prices	Extreme price fluctuations
Generally skilled labor	Generally unskilled labor
Creates a middle class	Creates ‘feudalist’ class structure
Irreversible wages (‘stickiness’ of wages)	Reversible wages
Technical change leads to higher wages for the producer (e.g. ‘Fordist wage regime’)	Technical change tends to lower price to consumer
Creates large synergies (linkages, clusters)	Creates few synergies

This chapter argues that both neoclassical economics and Ricardian trade theory fundamentally misrepresent the very nature of capitalism in that they fail to identify the very core of the process of relentless rent-seeking through innovation and emulation that *is* economic development.

Perfect competition ceased to be a feasible proposition already during the First Industrial Revolution. A combination of technical change and increasing returns (Schumpeter's 'historical increasing returns') increased the minimum efficient size of operations and consequently barriers to entry and exit, making oligopolistic competition the name of the game in manufacturing industries.

Rent-seeking in a sea of oligopolistic competition is therefore what capitalism is all about. As labor also became oligopolistic through unionization, the stage was set for a system of big business, big labor, and big government (Galbraith, 1956 and 1983). Regulations aiming at a just degree of imperfect competition turned this system into one of triple rent-seeking: capital, labor, and government colluded to share the oligopolistic rents. Minimum wages is an important tool for insuring such a 'collusive' distribution of the rents from innovations.

The presently wealthy nations have all been through a stage where they employed a strategy of emulation into the paradigm-carrying activities of the day. The Marshall Plan—the giant plan for reindustrializing Europe after World War II—was the last big emulation plan that opened up for successful free trade later. Presently the United States and European economies are emulating each other in creating gigantic rent-seeking machines based on very oligopolistic competition—like Boeing and Airbus. As a rapidly increasing part of world trade takes place in patented goods—i.e. legalized rent-seeking—it is almost indecent of First World economists to suggest that Third World countries should not be allowed to engage in industrial policies that produce rent-seeking. This is a blatant example of double standards: the strategy 'perfect competition for you and imperfect competition for us' was the core of an industrial policy called colonialism. The Third World will increasingly see the present stance as neo-colonialism.

Both vested industrial interests and plain institutional inertia will easily lead to keeping the strategy of emulation in place longer than warranted before comparative advantage takes over. India and China are probably both examples of that. However, if we compare the situation of India and China on the one hand and that of Somalia and Tanzania—both nations richer than Korea and Singapore fifty years ago—on the other, the cost of keeping the strategy of emulation in place too long is infinitely smaller than that of never embarking on it. Capitalism is rent-seeking. Choosing between the option of keeping a system of industrial rent-seeking that is relatively too static, thus creating an economic system that only partly exploits its dynamic potential, is infinitely better than failing on the opposite side with no emulation, which results in unemployment, hunger, and disease—as is the case of fragile, failing, and failed states in Africa and elsewhere. Failing on the side of keeping the protective barriers too long leads us to live pleasantly in

a country like Argentina in 1970. Failing to embark on emulation at all leads us to live in a country like Somalia in 1995. The choice is not really difficult.

I have argued that by establishing free trade uncompromisingly as the linchpin of the World Economic Order we have closed our eyes to many of the trade-offs that actually face us when we make economic decisions. As the absoluteness of the Gold Standard blocked Keynesian reforms for many years in the 1930s, the absoluteness of Free Trade plays a similar role today. I have argued that while 'emulation' is the logical intuitive choice in many situations, the counterintuitive choice of 'comparative advantage' is more than often imposed on countries far away. To use the term coined by US economist Thorstein Veblen, Ricardian (and much more so, Washington Consensus/neoclassical) economics may 'contaminate our instincts.' Not only that, in my view Ricardian trade theory is also about to contaminate our ethics. By seeing rent-seeking through import restrictions as something close to the cardinal economic sin, we may actually indirectly favor other forms of rent-seeking that may be even less palatable. During the US Civil War the South would be our ethical choice because they were in favor of free trade. Rent-seeking in the South was based on something else, on slavery. The North on the other hand based their economic policy on rent-seeking through import substitution. Which would we favor today, rent-seeking through import substitution or through low-wage slavery?

As did the United States after the defeat of the South in the Civil War, after World War II many countries raised their standards of living through an active industrial policy of the Schumpeterian kind described in this chapter. When protection was abruptly radically reduced or removed with the structural adjustment programs of the Washington Consensus, beginning in the 1970s, real wages fell precipitously in a large number of countries from Peru to sub-Saharan Africa, Moldova, and Mongolia (Reinert, 2007a). Clearly in many countries industrial policies were inefficient, but historically the only reasonable reaction to having an inefficient manufacturing sector is to make it more efficient, through the promotion of more competition internally or from countries at similar levels of development. And, centuries of experience (Steuart, 1776, List, 1841) insist that whatever changes are made to industrial policy should be made slowly—not through shock therapy—in order to allow companies to adjust their productive structures.

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