Networks and Globalization Policies

Chapter · May 2012
DOI: 10.1017/CBO9780511842481.011

1 author:

Douglas R. White
University of California, Irvine

168 PUBLICATIONS  5,826 CITATIONS

See profiles for this publication at: https://www.researchgate.net/publication/225308949
Networks and globalization policies

Douglas R. White

This Chapter argues for connecting models of several kinds of macro- and micro-processes as they affect structure and dynamics in the globalization of networks of trade. The purpose is to explore multiple levels of structure, process, and adaptation and to loosen assumptions about determinacy in models of networks and globalization. As do many models of emergence, it questions the notions of inevitability that too often surround studies of globalization. Particularly useful for comparison of cases are the models of “world system” developed by Modelski and Thompson (2006, see Devezas and Modelski, 2008). These focus on national policy-driven innovation and processes of European “evolutionary learning” that begins in the 1400s. They put in context the models that focus on core-periphery structure as developed by Braudel (1973), or the “world-system” core-periphery model that for Wallerstein (1974) begins in the 1600s. Study of structures of core-periphery in world systems can benefit from added dimensions, improved measurement of network structure, and understanding the effects of periodic crises in terms of historical dynamics.  

An unexpected outcome of this survey for issues of policy is that it develops a deeper historical of how certain kinds of exchange systems develop

1 Department of Anthropology, University of California, Irvine, USA – email: drwhite@uci.edu
2 Against determinism. If the static models of purely structural Marxists were correct, many issues of how networks operate in globalization would be deterministic, e.g., intrinsic inequalities in exchange produced by structurally unequal positions. History suggests otherwise. Neither the existence of core-periphery role-structure in the world economy (e.g., Reichardt and White, 2007), nor of changes of position in the core-periphery economic structure (Smith and White, 1992) entail that core-periphery exchange structures are everywhere deterministic, say of unequal exchange (as contrasted with the observation that core cities and states usually become peripheral at a later time). Some systems of exchange are circular, for example, as with circular routes and centers in Medieval European trade. Nor do histories of how such arrangements are appropriated by the state tell the whole story of globalization processes and their effects. A deterministic role of the hegemonic state has been highly contested and varieties of pluralistic theory articulated concerning interventions of middle classes, workers, the poor and others in issues of exchange in the industrial era (Aronowitz and Bratsis, 2002; Tilly, 1996).
several kinds of inequalities that are inimical to the concept of fair pricing in the operation of market equilibria even in the absence of economic oligopolies (monopoly, duopoly) and oligopsonies (monopsony, duopsony). These include longstanding militaristic state-policy domination of international exchange, resultant structural inequality in international trade networks, and cyclical events within polities that in periods of resource scarcity relative to population create periods of extreme deflation of wages relative to extremes in elite dominance over wealth-generating property ownership.

Consideration of policy alternatives begins with how deeply these inequality-generating processes operate long-term not only historically but at the present day, amplifying the sellout of our future, politically, economically, and ecologically, to shortsighted objectives, a conclusion reached by many authors, most recently Coyle (2011). While Coyle stops short of what to do about making markets moral and towards what ends, I go on to what to do about these problems given their history. If “more money makes people happier because it means they can buy more” (Coyle: jacket) then entails economic growth as the objective, when economic objectives are backed by military policy, population growth and economic growth become incompatible. In these circumstances – of militarized economic policies – population growth is conducive to social conflicts, debilitating population growth, and worldwide impoverization and results in less, not more, purchasing power for most people.

The present inquiry problematizes Modelski’s notion of a rather invariant type of leading state policy-driven process of “evolutionary learning” that creates and perpetuates core-periphery hierarchy in economic structures. Outcomes in network globalization processes are potentially contingent on different kinds of cycles of economic instability and change that are mutably affected by policies – state or nonstate – embedded in a broader framework of networks of agents involved in trade. In examples of medieval exchange, Arrighi and Silver (2001) analyze trade networks in terms of a contrast between commercial capital and financial capital and between multiparty policies on trade (Genoa) versus state-policies (Venice). Spufford (2002) offers an analysis of the role of trade, monetization and commercial entrepreneurship in the transformation of Medieval Europe. I will show that Modelski’s data on militarized trade policies in leading economies from 1450 to the present entail displacements of commercial ethics in all but community-based trade, replaced by what Jacobs (1992) calls a Guardian ethnic of winner-take-all.

History is rife, however, with diverse examples of trade networks in which
commercial trade entrepreneurship and ethics dominated exchange, rather than state-policy or financial capital. These include commercial capital and innovation developing at various sites include Sung China, Champagne Fairs, the Silk Roads in the Empire of the Golden Horde, nonreligious aspects of the Hanse League, the English sea captain “Asian malfeasance” trade post-1680, and some of the policies of the European Union.

If there are alternations between commercial and financial capital (pace Arrighi), what causes them? What entails the shift to state-dominated economic policy? Is that shift connected with specifically financial capital? How does this interlock, if at all, with Modelskian phases of innovation that may lead to market dominance of a leading state? Under what conditions do alternative types of scenarios reoccur within the globalization framework that involve bottom-up processes of multi-agent networks within which trade policies emerge? Do these generate periods not only of peaceful trade but also of reduced structural (core-periphery) inequality in the advantages accrued from trade? The range and scope of this Chapter opens questions but does not purport to offer law-like solutions.

9.1 Scale and temporal cycles in globalization processes

Noting Modelski’s political science overemphasis on the ubiquity of state-policy as a driver of economic globalization does not entail disagreement with his overall framework, which is discussed later in the Chapter. Historical and ethnographic data from periods spanning dozens of centuries years (Turchin, 2003, 2005; Turchin and Nefedov, 2009; White et al., 2008; White, 2009a) and at different spatial scales, however, shed different light on the periods that (Modelsksi and Thompson, 1996) include in their study of “evolutionary learning” in globalization. These, in their view, begin in CE 900 with the invention of printed money in western China. This first period led a developmental process that contributed to the 12th and 13th century early European Renaissance. Some aspects of this early period of globalization are echoed in the present, as the present is not the first time that China has been a new center of commercial innovation supplying commodities to the West.

A review of some findings from these data that are relevant to issues of economic globalization may best be examined by starting at the largest spatial scale within continents, then focusing in on smaller regions that are of a size where population numbers create Malthusian demographic pressures of relative scarcity in food resources. (White et al., 2008) show city-
size distributions within regions and intercity trade networks that interact with the dynamics of interregional trade. Here, I show how these interact with the ethical codes and policies that govern trade at different levels.

9.1.1 States and Cities (globalization and networks of cities and towns)

Globalization is a process of expanding the network of trade across cities and also includes exports and imports from interdependent rural zones of cities. (Jacobs, 1983) notes that “the power of city markets, the power of city jobs, the power of city technology, the power of city work transplanted out of cities, and the power of city capital ... are the five forces that shape and reshape all regional economies.” However, “In the hinterlands of some cities – beginning just beyond the suburbs – rural, industrial, and commercial workplaces are mingled and mixed together. Such city regions are different from all other regions, especially those having the richest, densest, and most intricate economies to be found, except for those of cities themselves.”

Jacobs (1969, p. 262) defines a town as “A settlement that does not generate its growth from its own local economy and has never done so. The occasional export a town may have generated for itself has produced no consistent self-generating growth thereafter.” What Jacobs’ forgets is that 1) cities are dependent on their external trade and 2) some town regions engage in long-distance international trade in addition that indirectly self-generates growth if we consider the global economy as including long-distance links that are not strictly inter-city. The network view that would enable an understanding of non-city links in long-distance trade is to look at the items that travel along these chains, in terms of the longer or longest distance pairs of endpoints of production and consumption. New manufacturing and trading groups in China, for example, also engage in long-distance links that are not exclusively inter-city: e.g., a peasant ironworker flies to Britain, uses bank loans to buy an inactive steel factory, ships it back in pieces and restarts the factory in China, later branching into autos. Nor was it simply the contemporary Chinese state or cities alone that fueled China’s recent economic development as a new center of commercial innovation supplying commodities to the West. Kynge (2007) argues that it was the recent legalization of private and kin-group entrepreneurship, unleashed but not controlled, in China’s recent economic liberalization.

Similarly but long ago, it was not the Chinese tributary state and urban centers that created the early (900-100 CE) developments in commercial globalization (including mechanisms of credit) but Chinese entrepreneurial
farmer-merchant families of the western Silk-Road regions who engaged in the network of long-distance Eurasian trade. In work on city-size distributions in world regions, (White et al., 2008) noted that size distributions typically have a scale-free or power-law log-log tail of upper size cities, but that convex fall-off in the lower size regions of the distributions tells us about relative economic health of the smaller-size distributions. Those small town-size regions with heavy convex falloff have an advantageous packing-ratio that creates many smaller rural “hubs”, less space between smaller cities, and (as with the denser populations of cities) more competition for resources. In such regions, individuals are likely to have a higher density of roles and responsibilities than in cities, and contribute to stable if not the most rapid innovation. It is imperative that equal effort be devoted to study of the parameters of smaller-scale towns and settlements before leaping to the conclusion advocated by West (Lehner, 2010, pp. 50, 52) that “modern cities are the real centers of sustainability”, “a growing city makes everyone in that city more productive”, or that “creating a more sustainable society will require our big cities to get even bigger. We need more megalopolises.”

While the world cities – New York, London, and Tokyo – of Sassen (1991) still control disproportionate amounts of global business and international influence through a hierarchy of specialized organizations (HQs and multi-nationals, finance capital and services, stock markets, giant international law firms), and living costs and individual wealth are greatest in the largest cities (Sassen, 2000), the phenomenal growth of near-instantaneous internet services in domestic markets (MERS, for example, founded in Reston, VA, which since 1995, processed millions of mortgages processed merely by self-nominated agents with no subsequent supervision) or international outsourcing to Bangalore, Hyderabad, Indore, Kolkata, Pune, or Mumbai has rapidly changed the spatial structure of advanced economic centers, often putting high-end functions together which sites of impoverization. 

Bettencourt et al. (1995) argue that the productivity of city economies scales with their size, i.e., that “gross economic production, personal income, numbers of patents filed, number of crimes committed, etc., show super-linear power-scaling with total population, while measures of resource use show sub-linear power-law scaling” (Shalizi, 2011). This entails that resource use (e.g., energy use per capita declines) is more efficient with larger city sizes but productivity is increasingly higher. Shalizi (2011, p. 7), however, shows for these super-linear relationships that neither “gross metropolitan product nor personal income scales with population size for U.S. metropolitan areas” but rather result from failure to use per-capita
measures, which was also the case for the other “superlinear” variables. Intriguingly, (Shalizi, 2011) also finds that “the appearance of scaling with city size is in fact explained by the correlation between size and occupational structure.”

“In his more pessimistic moods”, and extrapolating from scaling results that may (or may not) show increased productivity in cities as benefits of growth, writes Lehner (2010, p. 50), West “knows that nothing can trend upward forever ... And so growth slows down. If nothing else changes, the system will eventually start to collapse.” Yet (p. 54) “West describes cities as the only solution to the problem of cities”, i.e., through innovation. “Once we started to urbanize ... We traded away stability for growth. And growth for change.” (Note the lack of differentiation between economic growth, growth of city size and functions, and regional population growth). The advantage of cities, “as West put it” is that they cannot be centrally managed, “and that’s what keeps them so vibrant.” “It’s the freedom of the city that keeps it alive.” That freedom may be enhanced by the further variable if multicohesion of collaborative economic network ties that heighten productivity (White, 2009a). Katz (2010) argues that if larger cities are more productive per capital (or not: dubiously as well, notes Shalizi, they may walk faster and burn more energy per unit time) this is less possible outside urban and developed peri-urban economic zones given the higher quality of primary interpersonal networks rather than ties by internet connections. Defects of internet impersonality are illustrated by the computer generated increase in property tax mailings that generated California’s 1968 tax revolt. Advantages of long distance low energy links are illustrated by the Egyptian revolution of 2001. Bettencourt et al. (2007) have now gone on to study statistical distributions of innovation and productivity of corporations, having “an average life span of 40-50 years”, and “decline in productivity per employee” that makes for “increasing vulnerability to market volatility.”

My argument, however, is that once trade policy comes to be controlled by national-interest mercenary or militaristic policies on trade in which aggression has undercut fair pricing rather than those that favor benefits of fair trade – between whatever parties at whatever distance – and fails to represent the interests of the trading groups themselves, on equal footing, then the market economy becomes tilted by relations of unequal power (as in Aristotle’s theory: price as altered by inequality of status). Mercenary ethics of trading impose unfair pricing to the detriment of counterparties. Alternatives include, among others, free trade, policies of self-regulation by traders, complemented by the anthropological concept of generalized
exchange under an ethic of giving back to others (or that what benefits another benefits all, but not necessarily in the short term), and pricing by full replacement cost.

The city builds on productivity needed for its dependence on trade and pays for creativity, which it cannot survive without. In addition to collaborative multicohesion that may provide “fair trade”, but in the use of “mercenary” trade backed by aggressive state-policy pricing imposed on others, cities are paying for their existence well below “fair prices”, which imposes low profits to those outside cities and regions with which they trade. The city model of Bettencourt et al. (2007) fail, at best, without taking into account more global economic relationships that may entail unequal exchange.

Modelski and Thompson (1996), however, chart the wealth and innovation of leading cities at the expense of competing regions with national trade policies. These policies aimed at killing-off or absorbing through conquest the leading cities of other regions, i.e., following an ethical morality observed by Jacobs (1992) that shuns trading for exertion of prowess, obedience, discipline, tradition, hierarchy, loyalty, fortitude, fatalism, deception for the sake of the task, ostentation, largess, exclusiveness, emphasis on honor and leisure, and the taking of vengeance.

9.1.2 Ethical codes and systems: Jane Jacobs

Jacobs (1992) argues that two fundamental and distinct ethical systems, both valid and necessary, among others, govern the conduct of human life. One is a commercial code that shuns force in favor of competition, stresses efficiency, thrift, industriousness, inventiveness, novelty, initiative and enterprise, voluntary agreements, respect for contracts, honesty, optimism, collaboration with strangers and aliens, and dissent for the sake of the task – i.e., valuing transparency. The other is the political guardian code – descending perhaps from feudal landed estates – that shuns trading for exertion of prowess, obedience, discipline, tradition, hierarchy, loyalty, fortitude, fatalism, deception for the sake of the task, ostentation, largess, exclusiveness, emphasis on honor and leisure, and taking vengeance.

The shift from Asian-based leading sectors of the commercial-code type, as described by Modelski and Thompson (1996, pp. 171, 191) to European leading sectors takes place with the rise of the Mongols of the Golden Horde starting in 1190 that, in creating greatly increased East-West trade from Asia to the Black Sea, favored Genoa over Venice for nearly a century due to Genoese control of the Black Sea trade. Genoa had evolved
from pirate protection rackets hundreds of years earlier into a de-centralized commercial market composed of several thousand extended families. The Genoese from 1190-1250 shipped these Asian goods north to exchange goods at the Champagne Fairs and from 1250-1280 enlarged their Black Sea trade further Modelski and Thompson (1996, p. 191). Thus, “In the thirteenth century, the locus of innovation shifted to the Mediterranean, led first by Genoa, and soon followed by Venice.”

Genoa was the last decentralized leading commercial market city in Modelski and Thompson’s “leading sectors” of globalization, one in which competing families shipped their members out to distant ports to set up independent trading posts and moved goods and capital between them. Genoa became by 1290 the richest port in Europe (Spufford, 2002, p. 26), and trade route network analysis shows it was highest in betweenness centrality at this time. Betweenness centrality favors success in mercantile trade.

Withdrawal of the Mongols of the Golden Horde from their protective role towards the Silk Roads in their conquest of the Southern Sung (1279), however, undercut Genoa’s routes to Asia. The Venetian innovation of enlarging their galleys from 20- to 150-ton cargo capacity between 1300 and 1320 Modelski and Thompson (1996, p. 190) also allowed them to undercut the Genoese access to Black Sea ports (1320-1355), and expand their pepper trade Modelski and Thompson (1996, pp. 187, 191) through Mamluk Red Sea middlemen. Although Genoa controlled the Black Sea trade of slaves to the Egyptian Mamluk Sultanate, they were unable to break Mamluk control over the Red Sea route to Asia which was used by the Venetians in the 1290s. “In this same decade, a large contingent of Genoese were building galleys in Persia so that the Mongol ruler of Persia might interdict the Indian-Egyptian trade by blocking the Red Sea entrance” Modelski and Thompson (1996, p. 187). Genoese market ethics were competitive, but within a commercial equilibrium-market framework rather than coordinated by state policy.

Venice was a state-policy economy with charter shareholder corporations that contracted with trade partners, sent family members of shareholders to sea on a corporate vessel, but family members returned to the corporation to divide the goods and profits of the voyage. Venetian state-policy strategies won the competition with Genoa and dominated the Asian trade from 1300 to 1430.

What Modelski and Thompson (1996) describe in their treatise on “evolutionary learning” after 1430 are the results of European national policies involving guardian-conquest codes imposed on the international economy. This code survived to become the dominant force today in competition with
marginalized commercial codes of ethics, which so dismally collapsed in the current meltdown of financial innovation, with its policy-driven non-transparency and insider political and banking machinations (Schweitzer et al., 2009a). Contemporary Euro-American financial institutions, for example, act on Jacobs’ Guardian code of punishing whistle-blowing and give vast rewards for loyalties that do not betray endemic illegal practices.

### 9.2 K-waves of innovation with state-driven political codes

Devezas and Modelski (2008, pp. 15-16) define evolutionary learning as a part of evolutionary theory, which must specify mechanisms of change (Giddens, 1994). In the context of globalization, (Modelski and Thompson, 1996) view *evolutionary learning* in terms of successive regions that become dominant through competition, usually punctuated by warfare as the strength of a leading challenger comes to match that of the current leading contender. The breakthrough period is one that gives the political clout to organize challenges to current leading states. Phases of agenda setting (pp. 7-8, 53, 67, 222), coalition building (also p. 106), macro-decision (p. 68), and execution, correspond with early forms of Kondratieff waves (K-) waves of innovation, basebuilding, networking, breakthrough and payoff. They conceive of each as “a response to a specific cluster of innovations”, and see these K-waves as following a recurrent pattern of four 4-wave phases within a region that becomes economically dominant, from basebuilding to networking to breakthrough to payoff.

Their view divides the formative period of globalization – the Sung breakthrough through the Early European Renaissance and its expansion of the nautical/commercial revolution in Europe and the Mediterranean – and the state Euro-capitalist formative and consolidation periods that begin with the Portuguese circumnavigation of the Afro-Eurasian continent. The latter process of globalization began in earnest by 1430, through Portuguese state policies, and opened explorations that led to New World Portuguese and Spanish conquests of the next century.

Surprisingly, Devezas and Modelski (2008, pp. 31-32) describe for post-1430 market evolution a “predominantly commercial nature of the leading industries endured ... from the fifteenth through to the eighteenth centuries”, after which “the emphasis on the character of innovations shift[ed]”

---

3 By 1510 the richest city in Europe was Lisbon, where bullion was pouring in from the New World. By 1600 it was Antwerp, the banking city with the greatest global flow betweenness in terms of European trade between. Flow betweenness, in exchange networks, favors the dominance of financial centers.
Networks and globalization policies

to industrial production.” In actuality, however, the period of European domination of trade from the fifteenth through to the eighteenth centuries did not represent a commerce-based economy, but militarily-backed state policies competing for domination of trade, with the following period only euphemistically called industrial and then post-industrial capitalism.

9.3 Rise of a “guardian” view of economics and globalization: invasive European global hegemony in Asian trade

Modelski and Thompson emphasize, in their broad global comparative study, histories of state-driven trade policies oriented toward trade-dominance and warfare that emerge in Europe in the 1400s and continue to the present. Even today the U.S. has trade wars with Brazil over its agriculture subsidies that violate agreed-upon WTO violations. Under what conditions do the dominant players in trade networks and policy formulation tend to operate top-down, as in state-policies aimed at dominance, or bottom-up, as with multiethnic trader networks and multilateral or international organizations aiming at optimizing the benefits of cooperation?

The type of state-policy globalization that began in 1430 in Europe, in the Modelskian view (Devezas and Modelski, 2008, p. 32), was “already an energetic and fervent activity, with leading sectors clearly commercial in nature.” But for Portugal, Netherlands, Britain, and the U.S. as leading sectors, international trade was rarely governed by commercial merchant codes. Instead it involved state-driven policy objectives for domination of the world economy, beginning with basebuilding for commercial and political networking aimed at breakthrough to a nationally-based economy that by means of global dominance leads to economic payoffs and the political power to wage successful wars against competitors. This created a cyclical dynamic with few commercial-ethic interludes outside the policies of leading sectors and states.

The first instance of this type of trade, planned and executed by the Portuguese Kingdom, drew from the example of Genoese trade incursions in Northwest Africa (1290s) that were aimed at securing gold to finance circum-African trade routes to Asia as an alternative to the Mamluk-blocked routes through the Red Sea and Persian Gulf. Following the Portuguese defeat of the Moors (Algarve 1249, and the 1,415 counterattack on Ceuta, Morocco, which marked a startup of European colonialism), Portugal’s King John I organized scientific and policy conferences to assist the state to de-
velop strategies and infrastructures to round the horn, invade, and conquer Asian markets.

The project of the Portuguese as the European system-builders of the 15th century (Devezas and Modelski, 2008) began in 1420 with the technological advance, by 1440, of flat-bottomed caravels capable of navigating in shallow waters and steering into the wind, engaging the challenge of getting ships around the Guinea Coast (da Guiné, Guinea Return) to get access to gold from the deposits of West Africa (Volta da Mina, circle of Mine Return). Further development by the 1440s of the quadrant and progress in scientific conferences and engineering (1480s conferences of King John II) and guidebooks for navigating the coast by use of the balestilha (cross-staff) to measure latitude from the sun’s angle of altitude. By the 1480s caravel artillery was installed on fleets of larger, sturdier caravels capable of long ocean voyages that pushed around the Cape of Good Hope. In the next 50 years they had established the Indian Ocean Spice Trade, developed the huge galleon of war and transport, and enlarged a network of military bases from the West Coast of Africa to the rich coast of India. The Portuguese imposed a protection racket on Asian traders as the price of not destroying their ships. Prior to this first maritime invasion of Asian trade networks by the Portuguese, Asian sea trade was peaceful\textsuperscript{4}. The third of the maps of Figure 9.1 shows a dashed arrow that represents the extent of progress in the planned Portuguese route to India in 1450.

The original talk for this Chapter (White, 2009b), at the founding meeting of the Center for Network Science in Budapest, used a slideshow of network graphs showing maps of Eurasia from 900 CE to the 1950, overlaid with overland trade networks between the largest cities listed by Chandler (1987), at 50 year intervals, and with shipping routes from Europe to Asia annotated as to effects of European trade through military dominance. The original images of these maps can be seen at http://intersci.ss.uci.edu/wiki/ppt/economic_networksCEU.pdf.

The maps aimed at showing how land-based multi-cohesion in trade routes (favoring price-equilibrating markets) breaks up into noncohesive segments when warfare occurs over trade routes, maritime and/or inland, or sea-route domination by leading powers. Four periods appear on the maps. The most consistently cohesive are those (1) up to 1300 CE, dividing into two geographic segments, W. Arabs vs. Others (950-1000 CE),

\textsuperscript{4} “The peaceful Asian sea trade network, which peaked during the Chinese Ming dynasty, was disrupted by the coming of European traders in the 16th and 17th centuries which brought the establishment of the global economy” (Erika Rempel HST 101 February 29, 2008 – The Clash of the Asian and European Sea Trade Networks) is referring to early Portuguese conquest, three armed fleets headed by Vasco da Gama 1497-1501, sailing to India.
and Mediterranean vs. East Asia (1100-1300), and (3) from 1650-1750, only China is separated from the rest. The least trade-cohesive periods are (2). Those from 1350-1600, which divide into 3 or 4 segments (Euro-Med vs. Mid-East vs. India and China 1350-1400), W. Eurasia vs. India vs. China (1450), with India-China consolidated in 1500 but separated again in 1550-1600, and (4) from 1800-1950, starting with the British-Chinese Opium trade and trade wars and a high conflict period generally, trade group numbers are unstable. Periods 1 and 3 have a similar profile of city scaling coefficients (White et al., 2008), rising from devastated to over-integrated indices of city size (the latter means too many largest cities for the same region) for Eurasia generally and for China only, from normal to over-integrated in period 2, and fluctuating wildly from 1800 forward. The earliest periods of globalization (900-1250) are those with greater trade cohesion (N=2 larger markets, East and West), favoring “fair trade” prior to European domination. Period 2 and 3 boundaries (1300, 1600) initiate disruptions in rate of population growth (McEvedy and Jones 1978).

There is a reasonable dynamical correlation of inter-city trade connectivity in the Eurasian maps and city-size distributions by region. Lesser connectivity (N=3-4 separate cohesive “markets”) inveigh against fair global pricing and results in erratic city size fluctuation ending in periods of ur-
ban collapse. Restoration of larger trade connectivities (N=2) restore Zipfian city hierarchies in periods that may end in over-integration.

Devezas and Modelski (2008) give a brilliant exposition of their concept of “evolutionary learning” with respect to globalization, as Portuguese state policies were implemented, step by step, usually in 5-year increments. This is not a spontaneous or bottom-up evolution, however, but one organized by state policies. My view is that the state policies of globalization through conquest, which proceeded from the Portuguese/Spanish conquest, to the English and Dutch, to the English and American, need to be rethought. These are not fair market-price equilibrium economies. They are *prima facie* unequal exchange. They do not provide the benefits of free trade and processes leading to price equilibria promoted by economic theory. The term “market” in these cases serves as window-dressing for various forms of tribute-based international exploitation that have invaded many domestic economies from overseas.

The Portuguese invasion was the first state-driven globalization policy based on conquest. It marks a startup of “the history of the world system, within just one embracing concept” (Devezas and Modelski, 2008, p. 12), for which Modelski and Thompson employed the term “leading sectors.” Modelski and Thompson’s “world system” startup in the 15th century is thus at the root of Braudel’s (1973) and Wallerstein’s (1974) “world-system” emerging in 16th century Western Europe and the European expansion into the Americas, in which “Economic exchange between core and periphery takes place on unequal terms: the periphery is forced to sell its products at low prices but has to buy the core’s products at comparatively high prices” (Wikipedia: Wallerstein#Theory). What Modelski and Thompson (1996) and Devezas and Modelski (2008) have revealed, however, is that Wallerstein’s and Braudel’s emphasis on economic core-periphery structure turns out to be generated by explicit state policy aimed at trade conquest or market-tribute, which undervalue fair market prices for the conquerors.

Alternate policy formulations can be sought that replace the explicit violence and warfare involved in European polities that established Euroglobalization. Postwar decolonization was not sufficient to level the playing field of trade (Smith and White, 1992). To see how the economic playing-field might be leveled we need to dig further.
9.4 Commercial-transparency code examples

The policy questions examined here, in relation to Turchin’s studies of Malthusian cycles with breakouts of extreme inequality in and the K-wave cycles of Modelski and Thompson, concern the role of regulatory systems and their cultural contexts (Turchin, 2003, 2005; Turchin and Nefedov, 2009). Examples of more transparent commercial economies given here begin with a focus on medieval globalization – the invention and spread of paper money, credit notes and expansion of trade, free of tributary control. The juxtaposition between policy – usually considered to be state policy – seems oxymoronic in the context of medieval globalization, in that many periods were not state-driven in trade or monetary policy. This hints at policy possibilities under international law rather than states directly, which may need only to ratify international law. I ask: what would it mean to have states minimize their own conflicts in favor of a strong but level playing field for trade, such as happened frequently in the Medieval Chinese or European periods of renaissance? What would it mean if state policy toward globalization and trade strategies were not conducted with a goal of defeating or eliminating competitors in globalizing markets? Market capitalism emerged before state and financial (putative) capitalism, and I argue that the intrusion of Western state militarist trading into relatively peaceful Eastern markets in the 1450s began a chain of historical events that was a negative form of “evolutionary learning” in the processes of network globalization, neither a model for the present nor for future policy.

9.4.1 Sung (900-1190) silk road trade and the commercial code ethic

Trade on the Silk Roads fluctuated for a millennia (e.g., 300 BCE – 900 CE) as alignments changed among the tributary states of Eurasia. Rome and the Eastern Empire of Constantinople organized vast amounts of trade but pre-Medieval trade was predominantly tributary and administrative and not free merchant trade. Modelski and Thompson (1996, p. 132) credit Sung China (Northern Dynasty 900-1127) with the breakthrough globalizing invention of a national currency-based economy, in four stages: printing and paper, including paper money, the basebuilding stage (900 CE – 990); national market formation, the networking phase leading to globalization (990 CE – 1060: onset of globalization ca. 1000); the construction of a fiscal/administrative framework, the breakthrough stage facilitating Sung globalization (1060 CE – 1120); and maritime trade expansion, and the payoff stage of the globalization process (1120 CE – 1190). Paper money
developed from “a surge in the use of printing and paper industries”, (Modelski and Thompson, 1996, p. 131), the use of paper notes of credit by eastern Chinese merchant families at the terminus of the Silk roads, out of which banking families evolved in the region, and the adoption of paper money and notes as the basis of national economic transactions.

9.4.2 Champagne fairs (1190-1280) → Paris: fair trade regulations
The Champagne Fairs of the High Middle Ages (12th-13th CE) offer an example of “merchant law” domination of the commercial and banking relations that came to regulate trade between the Mediterranean and the north European lowlands. Operating at a north-south frontier, these fairs equalized the power differentials between cities and states and allowed inclusion of more distant parties on equal terms. Later the exchanges came to be executed by brokers rather than primary representatives of the merchants exporting their goods (Spufford, 2002, p. 148), which favored migration to Paris, capital of the most powerful European state. The French King from 1285 to 1314, Philip IV, Count of Champagne and King of Navarre, undercut the Fairs with his ascension to Kingship by moving the Champagne Court to Paris (also moving the French mint to Troyes), and by making war on Flanders from 1297. Peace in his domains enabled the first commercial sea routes from Bruges to newly conquered Cadiz, open also to Genoese traders. Effectively, “merchant law” trading was dead from Flanders south by 1300, displaced northerly to the church-based merchant relations of Baltic Hanse League.

9.4.3 Silk roads and Mongols (1226-1369) – understanding multiconnectivity in exchange systems
In their typology of the K-waves of the political powers that become dominant in the Silk Roads system, Modelski and Thompson (1996, p. 148) leave out consideration of the multiconnected international structure of the core network of exchange routes: the 4-cycle system connecting Northern Sung to Constantinople to Cairo to Tanjore back to the Sung, land routes to the north connecting to sea routes to the south. The network theory for such cycles is that a cyclic structure facilities the emergence of competitive pricing and cooperativity. Plott (2007, personal communication) notes that economics has no theory of prices in too thin-stranded exchange (monopoly/monopsony; duopoly/duopoly) because price equilibrium oc-
curs only with both bids from multiple buyers and asks from multiple sellers in the market of exchanges.

Cohesive multiconnectivity without a chokepoint or dominant controlling center, but with alternative routes by disjoint paths in a network of trade is a network that facilitates the emergence of equilibrium pricing. From pages 149 to 204 of Modelski and Thompson, in the chapters on Sung China, Renaissance Italy, and on the startup of later periods, the Mongols get major play. Italian K-waves in the Mediterranean (Modelski and Thompson, 1996, p. 206), 1204-1453 CE, are shown alongside a column for transition crises in the “Mongol World” that at its maximum territory nearly equaled that of the British Empire. The column includes: the wars of Ghengis Khan (1206-1226) and pacification of intracontinental trade routes; the Mongol sacking of Baghdad (1258); the conquest of Southern Sung (1286-79); the expulsion of the Mongols from China (1367); and the conquest of Persia by Timor, whose subsequent defeat of the Golden Horde led to Mongol Empire total collapse after 1369.

Prior to their expansion, the Mongols had a pre-monetary exchange economy of herd animals in bridewealth (horses, camels, sheep and other livestock) in exchange for brides who provided fertility for stocking extended family daughters and warriors. If wealth is defined as social or economic capital that is productive of further wealth, then pastoral wealth against bridewealth exchange in fertility, as in tributary and monetary economies, generate population growth in some periods, due to wealth-production, later culminating in resource scarcity relative to population that results in growing inequality of laborers and wealth-owning elites and their warriors.

The policy-relevant aspect of the brief Mongol administration of the Silk Routes was that they cleared the trade routes of obstacles and promoted trade. Economies burgeoned in the intersection of ethnicities along the routes. At one point Samarkand was the most cosmopolitan and luxurious capital of any region in its time. Although this brought vast riches to Mongol nobility, the hardship of administration when subject people were often devastated by the Mongol war machine brought the 3rd and 4th generation clan rulers to convert their policy from extortion and punishment of subject groups, often destroying their fields and resources, to consideration of “the enormous tax benefits of permitting peasants to cultivate their lands” (Modelski and Thompson, 1996, p. 184) and consequent focus on conquest of the Sung (1286-79), which created later conditions for transmission of the Black Death (1346-1353) from dense Asian populations to the Black Sea and the West.

Collapse of the Black Sea trade with Timur’s conquest of Persia and dis-
integration of the Mongol Empire (1369) led again to reorganization of trade routes, with the northern and Persian Gulf routes replaced in importance by the Red Sea route. Increasingly sea trade replaced or challenged overland trade.

9.4.4 Sea captains (1720–1674) – British non state-driven trade: 
democratic capitalism

A third type of data examined in my original Budapest talk (White, 2009b) was time series network data on 4,572 voyages by English traders of the East India Company (Erikson and Bearman, 2006, abstract; see inset below) from 1620 to 1824, showing “dense, fully integrated, global trade networks” that reveal free-trade market globalization prior to the industrial globalization of the 1800s. Erikson and Bearman’s purpose is to show that the “origin of modern economic markets” (i.e., high volume free trade with market price equilibria) emerges in an unexpected way, from the malfeasance of ship captains paid by the British East India Company (EIC) who, instead of returning from Asia with commissioned goods, would intentionally “miss” targets for return voyages (given the calendar of the trade winds) and stay in the Eastern trade orbits for an extra year, trading on their own account and making fortunes of their own while satisfying the formalities of their contracts with the EIC.

My purpose is this example is to show a form of capitalism that can emerge with free trade and price equilibria that is not biased by state policies. State-policy governed EIC trade in 1620-1624 (as shown in inset A of Figure 9.2) but in competition with the VOC (Dutch East Indies Corporation) the “persistent lack of resources and competition with the VOC led the EIC to adopt cost-cutting measures – abandoning the intra-Asian trade, abandoning surveillance of employees, leasing ships, and insufficiently supplying factors [sea captains] with bullion. Part and parcel of this retrenchment was the adoption of a strategy of employee appeasement as a solution to the principal-agent problem (Chaudhuri 1978).” The consequent reduction of EIC trade is shown in inset B for 1660-1664.

Then, “[b]etween 1667 and 1679, in an effort to routinize the home market and reduce exposure in the East, the EIC gradually withdrew from the country trade. By 1680 the EIC formally abandoned intraregional trading, which was left to individuals (Marshall 1993).” By the time of the “Glorious” peaceful democratic revolution of 1688-1689 (Pincus, 2005) Protestant and Catholic interests were reconciled while sea captains and merchants brought new capital assets to play that displaced the hegemony of
landed estate-owners. The wealth of the captains and merchants was acquired in the decade of sea captain malfeasance (private trading), which also benefited merchants at the English ports.

Figure 9.2 Development of private trading in the English Eastern trade in snapshots of six four-year periods (Erikson and Bearman, 2006, p. 212).

This example shows how transformative was unintentionally-instigated private trading in bringing about a change in fortunes of the aristocratic landowning classes *vis-à-vis* the merchant and entrepreneurial class whose wealth was as a result of the potential for profits in free-trade and high-volume market equilibrium. By 1689, landownership was displaced by an early form of parliamentary democracy as the basis of English state power.

“After 1680, when the EIC had withdrawn from the country trade, commercial opportunities within the East were numerous. Although the endogenous country trade in the East was significant and commercially sophisticated throughout the 17th and 18th centuries, it was fragmented into largely disjointed markets. This had not always been the case; Eastern trade systems were previously much more tightly integrated, and the penetration of Europeans contributed to a process of fragmentation already underway as a consequence of the decline of the Muslim Sultanates and the withdrawal of Chinese-sponsored foreign trade. By 1680, the Eastern trade system was dispersed and loosely
jointed, split between markets serving China and those centered on the Indian subcontinent, further divided among isolated merchants loosely tied to geographic bases. For example, Gujaratis dominated the trade across India and Bugis operated in the Indonesia archipelago. Between 1681 and 1764, structural holes resulting from this regional clustering were bridged by English captains free riding on EIC resources in pursuit of private profit” (Erikson and Bearman, 2006, p. 201; my italics).

The period of English free trade in Euro-Asian markets eventually displaced the type of Portuguese militaristic conquest trade in the East (carried over to the New World by Iberian conquests) but ended with The EIC coming to rule large areas of India (often through profiteering agents who violated company policies; as today, it was difficult for states to regulate in favor of free trade), gradually abandoning commercial pursuits in favor of company rule of India, which was consolidated in 1757, after which the intensity of EIC trade began to dwindle (insets D-E-F of Figure 9.2).

The effects in India of colonial VOC and EIC trade enforced by state-policy and military rule, up to independence in 1949, need not be rehearsed here. My power point from the Budapest conference went on to evaluate the harm to the Chinese economy following the invasion of the British and the opium trade. Continuance of militaristic trade policies of leading sector countries, however, operate to the present with financial codes of ethics of “maximize profits by any means necessary.”

9.5 Reasons for emergence of financial codes of “guardian” ethics

Why do the state-policy militarized economies of dominant Europe powers from 1430 to the present fail to utilize the “commercial code” of markets, with equilibrium-fair prices? Is it necessary that national-policy “guardian codes” of international trade typically morph into a bogus form of financial capitalism?

One answer is easy to see: The technology of China, accumulated from over a thousand years prior to the 10th century, plus Asian exports of the Sung and Mongol periods (the “Spice” trade, inclusive of a host of material technology and luxury goods), offered in trade over the Silk Roads, represented a type of exchange in which the demand for precious metals at the Asian end (gold and silver) coincided with the very metals that had been used to back currencies in the West for thousands of years. This was
transformative for Europe in three ways: **first**, the feudal nobility of Europe could extract bullion through mining and African trade to pay for luxuries and innovations from Asia. **Second**, the innovation of credit notes and paper money from China enabled royalty and nobility to use paper money as the currency to pay retainers to manage estates and palaces while the lords built houses in major cities such as Paris that became centers for merchants with new luxury items for sale from the East, ultimately in exchange for bullion. Wages paid in debased metal or paper currency allowed workers to move to cities, proximal to merchants, and to take up crafts and local industries. **Third**, as capital cities emerged under the pressures of different currencies, state policies in capital cities were oriented to restoring monetary balances, especially those of bullion, and supporting banks that had maximal global flow centrality (as defined by Freeman et al., 1991). The finance capitalism that first emerged in Venice, which looted Constantinople for its wealth in 1204 and outcompeted the Genoese by 1300, emerged in a location that was flow-central (see Freeman et al., 1999) in this period of Asian trade. This is the picture that Spufford (2002) gives of Medieval Europe. But as Europe transformed from a merchant-capital economy centered on the Champagne Fairs to a finance-capital economy centered after 1300 on Paris, with sea routes from Genoa to Holland and England and the religious Guilds of the Hanseatic League, the Dutch cities became the flow-central financial centers of internal European trade. The picture that (Spufford, 2006) gives of financial centers in Medieval Europe is that “they could only grow up on a foundation of industry and commerce, they could survive for some time after industry and trade had moved elsewhere.”

The Venetian reliance on middlemen for Eastern Trade was outcompeted by the Portuguese construction of the first direct routes to India, which also required tremendous finance capital. Trade corporations (EIC, VOR) supported by the states of leading sectors and national trade policy were also supported by (and caused problems for) finance capital of banks and states.

The problems of European state-managed finance capital also created problems that made warfare possible by massive loans with interest payments or political promises, and that motivated warfare to restore state finances, as in France. The combination of state finance capital and state-policy management of trade were thus closely linked. They also link to the more than century-long cycles and their phases, linked to long economic (Turchin) cycles that include population growth (which may be enhanced by international trade with unfair exchange benefiting larger cities) that lead to Malthusian shortages of food and hyper-inequality.
9.6 Hyper-inequality as an effect on states and trade policy

There are as yet few cases where structural-demographic analyses (Turchin cycles) have been done of nations in the period in which they are leading-sector polities, the exception being England in the period 1450-1800, shown in Turchin’s (2005, p. 59) graphic of British structural-demographic oscillations in Figure 9.3, and his phase diagram in Figure 9.4. This period includes Modelski’s (2000a) K-waves (1640-1740) in Britain’s phase I as a leading economic sector. The overall cycle of the Turchin graph, however, includes the leading economic-political sector periods for Portugal (1430-1520), Dutch Republic (1540-1610), Britain I (1640-1720), Britain II (1740-1820), in which four K-waves (Agenda, Coalition, Macro, Execution) occur on an average of 80-year cycles (Modelski and Thompson, 1996, p. 8). Modelski and Thompson (1996, p. 111) consider the “High-growth” second K-wave of economic Coalition building period predicted from their K-waves theory as 1660-1680 (developing the overseas Tobacco, Sugar and Indian textile imports), and their observed growth peak as 1670, which accords with my discussion of Erikson and Bearman’s (2006) findings (Figure 9.2) about expansion: the period of sea captains and merchants who brought new capital assets to play that displaced the hegemony of landed estate-owners. This decade corresponds to recovery from the height of the instability curve in Turchin’s graph, in Figure 9.3, as scarcity in the population/resource ratios producing hyper-inequality begin to fall. It anticipates the English “Glorious revolution” of the 1690s that coincides with Modelski and Thompson’s (1996) “Macro-decision” period and global war in which democratizing Britain defeat the autocratic French King Louis XIV (1688-1702). Modelski (2009a, p. 79) views the long cycles of global politics as having periods of approximate periods of 120 years and cycles of democratization as periods of circa 240 years while the Modelski and Thompson (1996) bursts of four K-waves have average period of 50-60 years (but in these examples, 80 years). While there might be regular period-doubling in these different kinds of cycles, also major discrepancies. Regular fit in timing of Turchin cycles (which are irregular) and K-waves cannot be definitively established.

What these results suggest from the viewpoint that I have taken, al-
though merely suggestive, is that hyper-inequality (which peaks in the British Turchin cycle circa 1640 when landed aristocracy dominate) is an internal instability that leads to state-policy changes. In this case the IEC commercial trade to India was withdrawn by the state in the period 1667-1679, replaced by individual initiatives in trade by sea captains, which under-

regional not a polity context. Modelski (2000a) provides a full explication of wave phenomena that include the economic, political, and behavioral patterns proposed by Devezas (2001).
mined the dominance of landed estate owners. The Catholic King James II, allied with the absolutist monarch Louis IV of French, attempted to reinforce in battle the succession of a newborn Catholic son against the previous rights of his older Catholic daughter. The recruitment by the British Parliament of royal family member William of Orange and his Protestant wife as Monarchs, and the defeat of James in the battles of 1688 were a continuation of the civil conflict resulting from the period of hyper-inequality. Whereas Turchin and Nefedov (2009, p. 107) argue that the “geopolitical environment apparently played a minor role during this cycle. Although it was the invasion by the Dutch Stat holder, William of Orange, that precipitated the Glorious Revolution, the success of it was entirely due to internal factors”, i.e., to conflicts playing out in the structural-demographic cycle. The K-wave and structural-demographic cycles clearly differ in periodicity and subphases, but this example illustrates how they may interact, in this case with a phase of hyper-inequality affecting the conclusion of a major social revolution that had long been simmering and producing a major shift, even if only for a time, to a more decentralized commercial trade ethic.

9.7 Policy implications: Arrighi and Silver’s view of hegemons

“When we speak of leadership in an international context, the term [leadership] is used to designate two different phenomena. On the one hand, the term is used to designate ... that by virtue of its achievements, a dominant state becomes the ‘model’ for other states to emulate and thereby draws them into its own path of development (see in particular Modelski, 1987; Modelski and Thompson, 1995). But to the extent that emulation is at all successful, it tends to counterbalance and hence deflate rather than inflate the power of the hegemon by bringing into existence competitors and reducing the ‘specialness’ of the hegemon ... ‘leadership against the leader’s will,’ ... borrowing an expression from Schumpeter ..., is always present in hegemonic situations” (Arrighi and Silver, 1999b, p. 27).

“On the other hand, the term leadership is used to designate the fact that a dominant state leads the system of states in a desired direction and, in so doing, is widely perceived as pursuing a general interest ... [T]his is what we shall take as the defining characteristic of world hegemones” (Arrighi and Silver, 1999b, p. 27).
Contrary to the Modelskian view, for Arrighi and Silver (1999b, p. 271), the

“process of globalization of the European-centered world system has not proceeded along a single developmental path within which hegemonic states rose and fell. On the contrary, the systemwide expansions under the leadership of each hegemonic state culminated in a crisis and breakdown of the system. Expansion resumed only when a new hegemonic state opened up a different developmental path, re-organizing the system to as to solve the problems and contradictions encountered along the path opened up by its predecessor.”

Among their five concluding propositions are several views that support some of the arguments here, arrived at independently:

[1]: 272 “The global financial expansion of the last twenty years ... is the clearest sign that we are in the midst of a hegemonic crisis ... that will end more or less catastrophically, depending on how the crisis is handled by the declining hegemon.”

[2]: 275 “The most important geopolitical novelty of the present hegemonic crisis is a bifurcation of [concentrated] military and [dispersed] financial capabilities that has no precedent in earlier hegemonic transitions. The bifurcation decreases the likelihood of an outbreak of [global] war ...”

[3]: 278 “Unlike the global financial expansion, the proliferation in the number and variety of transnational business organizations and communities is a novel and probably irreversible feature of the present hegemonic crisis ... and can be expected to continue to shape ... disempowerment of states.”

[5]: 286 “What lies in front of us are the difficulties involved in transforming the modern world into a commonwealth of civilizations that reflects the changing balance of power between Western- and non-Western civilizations ...”

The brief reviews here of commercial markets and ethics tend to agree with Arrighi’s view on the possibilities of periods in which exchange is not state-policy regulated, which is assumed by Modelski and Thompson, but involves broader multiparty interactions. Arrighi and Silver (1999a, 2001) tend to see financial and commercial capital as alternating expansions following crisis, “resumed when a new hegemonic state opened up a different
developmental path, reorganizing the system to as to solve the problems and contradictions encountered along the path opened up by its predecessor.

9.8 Foundations for policy

The evidence reviewed here supports the argument that commercial markets with multiple buyers and sellers (multiparty multicohesive exchange networks) support fair pricing in equilibrium markets. They are massively different than the military-backed market conquests, since 1450, have imposed price differentials in favor of dominant polity price-setting in regions conquered by Europeans. “Western” trade practices established unfair pricing outside the multicohesive network cores of the dominant economic sectors. That a core-periphery network of trade structure came to sustain unfair pricing (what Marxists call unequal exchange, including structural inequality) seems indisputable.

Further, because of the historical connection between state-policy conquest trade, the financial capital needed for European conquests, and the dependence of the early European-constructed world system (starting circa 1450) on bullion (soon, from the Americas) in trade for Asian luxury goods, finance capital has largely dominated the state-policies of leading European economic sectors. When these sectors collapse, in their competition with other leading states, there are periods of crisis and uncertainty in which commercial markets, organized on a basis that differs from that those sectors in crisis, and on a bottom-up basis, are able to establish fair-trade equilibrium pricing. Commercial markets also survive, innovate, and operate interstitially alongside mercenary leading-sector financial markets once they are reestablished.

A derivation from these observations is that those institutions that are protected during periods of leading sector dominance (what Arrighi calls hegemons), including banks, operate on a “maximize profits by any means necessary” basis, without regard to other players. This type of system, then, has been historically biased toward inequality, not only in terms of international core-periphery market exchange, within core states, but even more severely, within periphery and semi-peripheral states, cities, and regions.

Because the mercenary form of militarized capitalism in the European context was a reaction to the predicament of exchanging bullion or luxury goods in the East-West trade we should not conclude that capitalism in the form of dominant financial markets or hegemonic and structural inequal-
ity, as distortions of pricing, are inexorable or the “natural” driving force of “evolutionary learning.” Nonetheless this condition persisted and intensified until both India and China were brought under British rule. India was conquered after 1857 and colonized. China was subjected to the Opium trade from which it was barely freed in 1910. The historical specificity of each of these processes militates against the idea of inexorability.

Ethical capitalism, under a commercial rather than a predatory “Guardian” ethic of military-backed nationalism, remains an unexploited possibility that can still be experienced locally (e.g., in regulated S&L banking) if not internationally. Attempts to establish a British commonwealth of nations began in 1884 and culminated after WW I in the Balfour Declaration (1926), formalized in 1931. Attempts were made to establish fair trade practices in spite of massive core-periphery structural inequalities, which were not removed by post WW II independence movements that exposed further financial vulnerabilities of new nations. These vulnerabilities were and still are exploited by hegemonic economic practices, even in World Bank loans and IMF takeovers involving institutions still dominated by players in the leading economic and political sectors.

Currently the core financial economy is so overconnected (Schweitzer et al., 2009a,b) that there is hardly any possibility of full transparency without new systems of monitoring accountability that outperform the speed of e-transfers. Collusion and pilfering of funds can be introduced at trillions of places due to the vulnerabilities of contemporary lapses in transparency. Oversight or regulation is currently miniscule compared to the volume of transactions of vast unregulated networks of financial transmission. Failure to advocate and achieve full transparency and selective regulation produces an economy of structural criminality with potential whistle-blowers paid maximally not to tell what they know. Price collusion as to departures from fair trade can be detected with econometric methods (e.g., White, 1998, 2004) but these methods are not used currently outside of lawsuits on behalf of victims of price collusion (Bates & White, LLC).

The generation of hyper-inequality operates on top of the multiple problems of fair markets put out of joint by financial institutions and by state-driven trade policies. Turchin’s study of structural demographics shows that overpopulation cycles that generate scarcity accelerate the concentration of capital ownership and underpayment of returns to labor. This creates incentives to manage policy to further increase inequality in managing state-surpluses and civil benefits. Social conflict and economic collapse are then amplified well beyond the capital replacement costs of repairing infrastructure that are at the root of Kondratieff cycles. These re-
placement costs involve periods of borrowing and investing new capital directed toward innovation as well as infrastructure renewal. In the political-financial quagmires of the 2010s, awareness of national level replacement costs seems to have disappeared in public discourse. New understandings of the shapes of Kondratieff waves and phases are needed in terms of what to do about economic pricing distortions due to structural and hegemonic inequality rather than the realpolitik of the Modelski model of power-politics, fixed on the state-policy levels of leading-sector competitors for hegemonic dominance of the international economy, as if these were the only lessons in “global learning.”

9.9 Combining causal analysis and historical recurrence

Metastable and thus irregular cyclical behavior, however, is a normal and potentially self-regulating or beneficial condition of many complex systems (Lawless et al., 2010). The empirical historical data discussed in this Chapter (and in related sociological analyses of White et al., 2011) show that Turchin’s models of secular cycles of large-scale agrarian systems, once they combine with monetization, produce exceptionally destructive tendencies. These include: 1) bid/ask market pricing inequality amplified by the dichotomy between property owners and workers in periods of Malthusian scarcity that produce hyper-inequality and consequent adverse effects; 2) economic downturns that add to the severity of socially violent economic crashes or depressions followed by unusually innovative periods that go beyond population recovery to cause the impoverization that encourages intra-family self-help and exponential population growth – until another crisis of cyclical growth occurs.

In contrast, without bid/ask amplification of inequality to amplify socially conflictual hyper-inequality (and without hyper-aggressive state-driven trade policies) it is conceivable that upturns in cyclical recoveries would generate less population growth with the effect of “demographic revolutions” wherein economic growth generates incentives (e.g., costs of children’s education come to vastly outweigh benefits of children’s labor) that encourage smaller family size. The social disruptions and conflicts that come out of Turchin’s agrarian crisis dynamics, however, – given the context of European hegemonic trade dominance after 1450 – typically produce larger families and, overall, exponential global population growth.

Mathematical models of policy incentives do not take into account runaway systems that represent defects in recurrent cyclical behavior, or schis-
mogenesis. The impulse of “mechanism design” might be in the right direction, but may be too piecemeal for what are larger systemic or structural problems in national and international economic policies and structures.

9.10 Policy conclusions

The most comprehensive areas of sustainable commercial trade define a different conception of cost and price by evaluating the cost of reproducing goods, including the ecological components that are diminished in the process of collection, depletion of raw material, production, and recycling. Not only, for example, is soil depleted by 300% overuse of nitrate fertilizers after germination (Agency for Toxic Substances and Disease Registry, 2007) but runoffs destroy the viability of waterways, aquifers, estuaries, lakes and oceans. Industries that support the nitrate commodity chains and use are opposed to sustainable agriculture even though poisonous water runoff kills fish and marine flora and biota worth trillions. It is evident that nitrate use and pricing, given the scale of ecological destruction, are wildly out of equilibrium. Fixing nitrate contamination that destroys ecologies and the complex efficiencies of biodiversity would also entail new kinds of food production that recycled existing waste differently and the kinds of foods produced. Subsidies would need to change, possibly how new bio-efficient foods are packaged and processed by industrial machinery, and how genetically modified seed stocks are supervised. If “costs” of sustainability are seen by corporations as eliminating sales and jobs of “environmental industries”, activity could shift to creating new work to fix new problems and to recover value in ecological resources currently being destroyed. But who represents these balancing interests? For Costanza et al. (1997): “Because ecosystem services are not fully ‘captured’ in commercial markets or adequately quantified in terms comparable with economic services and manufactured capital, they are often given too little weight in policy decisions. This neglect may ultimately compromise the sustainability of humans in the biosphere.” In the current change of concepts about cost and prices, “ecosystem services” are being factored where ecological costs are present not only “sellers” but for brokers of positive returns to ecological value.

For economic “mechanism design” examples see the IMBS conference, described in terms of: “A need to understand how a system of interaction, rewards, etc. can be created that will accomplish a desired outcome is a goal shared by several disciplines, ranging from political science, economics, and computer science: this is an objective of mechanism design. Closely related is the need to understand how biological and other systems adapt to new circumstances: this is the area of adaptive systems.”
Recognizing costs in truer forms of pricing are opportunities in themselves and for new sustainable industries. For Sassen (2009), going further, “Cities are a type of socio-ecological system that has an expanding range of articulations with nature’s ecologies. Today, most of these articulations produce environmental damage. [She] examines how we can begin to use these articulations to produce positive outcomes – outcomes that allow cities to contribute to environmental sustainability. The complex systemic and multi-scalar capacities of cities are a massive potential for a broad range of positive articulations with nature’s ecologies.”

Multi-agent and multi-organization (multiparty) policies are discussed in many venues, the European Union, United Nations, and World Trade Organization, among others. Ostensibly they are aimed at mitigating inequalities of the terms of exchange, and should be helping to shape the resultant modulation of cyclical economic fluctuations. The creation of a more level playing field for multiple agents competing in economic exchange could mitigate the emergence of hyper-inequality that may otherwise occur in key population-growth phases. The problem is exacerbated, however, by the fact that the WTO is effectively run by four hegemonic interests: the U.S., Britain, France, and Germany. Even within those countries, the WTO representatives do not represent the interests of broadly different sectors but the sectors with major hegemonic interests.

Modulations from the WTO and other international institutions are needed that serve, instead, to lessen the attendant dangers of regional and global population growth that produce recurrent Malthusian crises. Hyper-inequalities or moderating influences may operate in various ways in global crises caused by scarcity relative to population. It is in these periods of economic and social disequilibrium where ownership often comes to entail massive economic advantage in a context of when scarce-resource overpopulation diminishing benefits not only to workers but to the ecologies on which they depend. Reforms in “democratizing” the WTO and other international institutions supposed to serve common interests is consistent with the aims of this Chapter. That is, “democratizing” should assert the need and potential for ethical-system commercial codes to govern economic and globalization policy. The aim should be to equalize disparities in pricing and how this could lead to benefits in issues of human survival. Oka and Chapurukha (2008), for example, documents how commercial codes of exchange promoted resilience to “Famines, Maritime Warfare and Imperial Stability in the Growing Indian Ocean economy” ca. 1500-1700 CE. His ethnographic-historical studies represent local level operation of commercial codes in Africa and the Indian Ocean which continue in subdominant
trade today. Ethical systems commercial codes are operative worldwide throughout recent centuries, but they operate at the margins rather than in the leading economic sectors.

9.11 **Policy alternatives for a structural-demographic complex**

One set of new global policy objectives should engage in understanding the negative consequences of overpopulation cycles (Malthusian oscillations) leading to hyper-inequality and to global overpopulation. Considerations might include (1) regulation of trade through the commercial ethic and egalitarian policy institutions equipped with regulatory rules supported by but not dependent primarily on ratification by states, (2) state policy supports for the implementation of rules for leveling economic exchange and forestalling such deep oscillations of inequality as to create exploitation and civil distress (e.g., think: Wisconsin and its governor’s desire to criminalize the right of unions to negotiate), (3) state and international incentives for regulation of human population that also help dampen oscillations of population growth and hyper-inequality in large regional exchange economies, and (4) international laws and regulations that enact legal liabilities on corporations so that, as with the freedom of individuals to interact in ways that generate beneficial feedback processes, they are guided toward the ethic of commerce and free exchange rather than the guardian ethic of both individual and corporate lying and loyalty at the expense of others as “opponents” rather than exchange partners.

9.12 **The need to replace the Eurocentric “guardian” model of evolutionary learning with a geocentric transparency model**

A second set of new global policy objectives should be to sustain in a positive way the challenges not of but in recognition of the facts of Modelskian view, which I take as accurate, in our current new millennium. The notion that the “natural” learning curve of human evolution is military-backed financial capital must be challenged. The U.S. have nearly lost its claim to leadership as the leading economic and political power, with three unsuccessful wars (Korean, Afghani and Iraqi) and failed regulatory economic policies. The Afghan war was a policy blunder, especially in the light of reports from anthropologists at the time that the Pashtun leadership was reconsidering their “guest” policy toward Al Queda leadership prior to the
American attack, and the historically evident fact that a war against Afghan tribal and clan warriors and incommensurate codes governing social norms was unwinnable. At the moment I write this, with the people’s revolution of the ethnically unified central nation of Egypt in the Middle East, we have a step of democratization that could act to level the economic field of hegemonic pricing and monopolization of militarized power.

9.13 Transparent ports of trade as “evolutionary learning” how do we get to policy alternatives for fair trade and sustainability

Two forms of commercial code exchange can be imagined. One echoes West’s view “It’s the freedom of the city that keeps it alive”, i.e., transactions within a city (or town) allow reputational knowledge of merchants and fair prices, at least as judged locally. This does not apply, however, to international or internet trade, although the internet allows customer ratings of merchants and comparison-sites for prices. Customer ratings can, however, be rigged, by merchants themselves making bogus ratings, preventing price-quality ratios from being fairly judged.

What is the possibility of ports of trade, like the Champagne Fairs, that provide complete transparency? That is, reputations of merchants, recognition of conflicting interests, subsidies derived from motivated contributions, fully disclosed fees and pricing mechanisms, enforcement of regulations against inside dealing (as when arbitrage sales hand collateral of short sellers over to banks that return interest on the stocks to the arbitrageur), knowledge of provenience of goods and the costs markup of price at each stage in its transfer, etc. At this moment arbitrage in the U.S. is supposed to be “neutral” in removing non-equilibrium pricing but is totally non-transparent and managed by nine individuals representing different banks. A transparent system must prevent the possibility of collusion by providing full information that would detect the source of biases, and investigate such possibilities post-hoc. It must have in force transparent and verifiable information that would allow buyers or customers to avoid unfair pricing, monopsony, monopoly (more generally: oligopoly and oligopsony), and, a system of regulations and incentives or punishments for unfair or deceptive behavior, including disbarment from the market. In principle, a free and fully transparent market is self-equilibrating but only if the status of participants in and of itself does not affect prices, which even Aristotle observed as a causal principle of economics. In principle, price of entry can
be free but is only meaningful provided that disbarment or posting of information about unethical behavior is insured.

National economic policies need to turn from viewing warfare as a putting out of political fires and eliminating threats to overseas economic interests – which include illicit policy support for military-industrial revolving doors between its leading industries, including international weapons sales. It is necessary to comprehend the heightened effects of cyclical (and currently growing) inequalities in regions all over the world as a result of national policy priorities toward hegemony over other national economies on a competitive military-backed priority. Instead, reform of WTO and other institutions must aim at making peaceful alliances and a level playing field – without chokepoints, monopolies/monopsonies or national and international oligopolies designed to uphold purely national interests. In principle, transparent trade associations among nations could mirror transparencies in nonstate trade associations. The more fully international each of these “transparent trade associations”, state or nonstate, the greater potential for a level economic playing field.

9.14 Conclusion

Without intending to in advance, but attentive to the history of “globalization”, I believe to have documented a case for concluding that it is the militarization of economic growth (1450-present) in leading economies that sustains global impoverization. This in turn erodes ecologies and incentivizes large families as a means of survival. Pitting population growth against fixed, slowly growing or declining resources causes Malthusian crises that generate hyper-inequality in a vicious cycle which at every level entails destructively unfair pricing and a tendency for commercial ethics to degrade to those of the Guardian warfare-bases ethics. Economic growth cannot be sustained under the conditions of the military-backed national trade policies of European globalization that began in 1450 and has continued into the present. Foundational change is required in the militaristic policies of leading economies. This view contravenes the Modelskian view of “global learning” naturalized as militaristic globalization.

If this view is valid in its long-view diagnostics it entails that leading economies will do better in a global economy when they reduce their military power to achieve equilibrium with other powers, including grand alliances among democracies as against newly militarizing autocracies. Abstaining from economic advantage taken from military power, and sup-
porting viable international institutions such as GATT or a reformed WTO can help lead to both equilibrium market prices that are fair as between nations and to international regulatory agencies favoring fairness that provisions the future of all nations and of a growing and diversified ecology that can support growing economic benefits for individuals and not simply national GDPs but GDPs per capita worldwide. In these circumstances, the diversification of sources of wealth in the absence of militarily backed economic inequality supports diversified labor as well as diversified rights and ownership. This reconfiguration of policy priorities can reestablish the basis for moral action over dishonesty, distrust and localized interests aimed at the destruction of others. These reconfigured conditions can produce local and globalized demographic transitions toward preferentially smaller families and the lowering of world population, lessening the likelihoods of cyclical occurrence of regionally Malthusian crises that promote conflict, warfare and collapse that, once completed, lead to periods of intense population growth that exceeds previous levels of population by virtue of excessive innovation and arms race aimed at competition with other peoples and nations which is the current source of Modelskian “global learning”, a theory that itself needs to be reconfigured in a more proactive way than Hobbesian war of all “Guardian” interests against all others.

9.15 Reprise and critique

In the context of 20th and early 21st century globalization, the post-2007 crisis research of economist Coyle (2011) supports the arguments of this Chapter. Her chapter on fairness (and causes or consequences of extremes in inequality) stands as a recommended supplementary review of evidence for the reader. That chapter, however, does not mention fairness in pricing per se or the role of leading sector state policy in employing military power in a myriad of ways that alter prices. Focus only on recent times misses the long trajectory of military-backed attempts to alter pricing by European-based powers, from Portugal (1450) to present-day American power. I have no personal beef with the professional military, my father and grandfather being Major General and Lieutenant Coronel in world wars II and I, but only with the misuse of military power and its consequences, and in arguing against the view that the theory of competitive pricing equilibrium represents a basis for the view of economy of the last 560 years of globalization as a level playing field.

My views on the reducing the costs of warfare for civil societies and na-
tions will be criticized by those who hold that warfare is an inevitable and immutable feature of competition. Consider as an example how in the US rush to punish Al Queda failed to parse the signal that Mullah Omar and Taliban leaders were reconsidering the Pushtun doctrine of hospitality in the possibility of turning over the Al Queda leadership to Pakistan, similar to the Sudanese offer to Margaret Albright a decade earlier. The cost of the hothead rush to war without diplomacy and discussion has been in the tens of trillions. That kind of rush to warfare by leading powers is potentially containable. Klein’s (2008) four year research project on contemporary globalization, summarized in The Shock Doctrine: The Rise of Disaster Capitalism contains what has been called “nothing less than the secret history of what we call the ‘Free Market.’” by Arundhati Roy, who adds “It should be compulsory reading”, especially as it is playing out today (March 2011) in gubernatorial policies in Wisconsin, Michigan and elsewhere aimed at relieving Americans of their rights as citizens.

The reader dubious of my propositions about containment of warfare might also consider how, in the current century, the concept of warfare logistics has been yoked to corporate outsourcing, again at a cost of tens of trillions. The problem here is that the agents of corporate outsourcing have a vested interest in warfare as a source of profits, which contaminates the concept that a democratic government should be run by civilians and officials hired by governments should not be contaminated by conflicting interests in the war machines hosted by corporations rather than by professional militaries.

9.16 Acknowledgements

I am indebted to the Santa Fe Institute for hosting my participation in the Co-Evolution and Networks and Markets Working Group of the Santa Fe Institute and funding an SFI Working Group on “Analyzing Complex Macrosystems: Civilizations as Dynamic Networks”, to Bob Adams for suggesting that I read Peter Spufford’s (2002) book, to Peter Spufford for starting down the path of studying the Medieval Renaissance and suggesting that a trade network study of economic flows between Europe, China and India would be needed, to Peter Turchin for sharing his images of historical dynamics, and to ————————— be completed.
Bibliography

Bibliography


Bibliography


Heckman, J. J. 1976. The common structure of statistical models of truncation, sample selection and limited dependent variables and a simple estimator for such models. *Annals of Economic and Social Measurement*, 5, 475–492.


Huang, M., Huang, Y., Ognyanova, K., Margolin, D., Shen, C., and Contractor, N. S. 2010. The effects of diversity and repeat collaboration on team performance in distributed nanoscientist teams. In: *Academy of Management Annual Conference*.


Bibliography


Bibliography


