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# THE THIRD GLOBALIZATION

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Can Wealthy Nations Stay Rich  
in the Twenty-First Century?

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Edited by Dan Breznitz  
and John Zysman





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**Dedication by John Zysman:** For my late mother who always wanted me to write books and had a deep concern with the impact of the economy on people

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## Introduction: Facing the Double Bind

### MAINTAINING A HEALTHY AND WEALTHY ECONOMY IN THE TWENTY-FIRST CENTURY

Dan Breznitz and John Zysman

SUSTAINING THE GROWTH of employment and productivity to ensure expanding real incomes of citizens is a classic policy problem and political necessity for all governments. In this era, those who command the state—those who would govern the economy—find themselves in a double bind. In psychiatry, a double bind is defined as a dilemma in communication that leads to acute distress, in which someone receives two or more conflicting messages from others to whom they attach great importance (such as a parental figure), and thus one message cancels out the other (Bateson et al. 1956). This creates a situation in which a successful response to one message results in a failed response to the other (and vice versa), so the person will answer incorrectly, regardless of his response. The double bind occurs when the person cannot confront this inherent dilemma and therefore cannot resolve it or opt out of the situation.

Such is the predicament in which policy makers find themselves today: They are called on to unleash creative capitalism and, at the same time, to intervene directly to make certain markets work optimally or to accomplish particular objectives, as in the case of climate change.

Governments have long been called on to protect society against the consequences and disruptions of the market. This is the classical Polanyi “double movement,” which argues that society cannot survive under conditions of a completely free market, so “freeing” the market will always lead to a counteraction as society tries to save itself.

By contrast, the double bind that concerns us here is a dilemma in which policy makers who fully believe in market economics are called on to unleash creative capitalism

by getting “out of the market” but, at the same time, are asked to forcefully intervene to “optimize” it and save it from itself. In a basic sense, this is an enduring debate. What is distinctive about the tension we now face is that appeals and requirements for purposive state action collide with the potential of the market. The imperatives and ideologies involved in this simultaneous call for often-disruptive economic growth and citizen welfare have always pulled in opposite directions. The current manifestation of this tension is what concerns us here.

The recent financial debacle, which required significant state intervention, was preceded by a long and complex evolution in the way in which firms create value and are organized. The fragmentation of production, intense global competition, and the transformation of services as a result of its intersection with information and communications technology (ICT) are all part of a story framed by the ideologies of deregulation and self-regulation. This evolution in business strategy and market competition fueled corresponding demands for market rules that would permit extensive innovation and experimentation.

A significant driver of these transformations of value creation and the reorganization of production has been the cascading waves of innovation in ICT. The process was co-evolutionary: There were a series of political and regulatory decisions that responded to and facilitated the potential of the new technologies. Thereafter, new business models and new ways of organizing innovation and production followed, which, in turn, spawned a new set of political conflicts, choices, and decisions. Those choices and decisions, in turn, influenced the subsequent development trajectory of ICT as well as other industries (Breznitz 2007a, 2007b; Zysman and Newman 2006b). The realization of all the new possibilities required new rules. The move toward market deregulation in telecommunications, for example, began with the simple effort in the United States to connect the Carterfone to the AT&T network, which led to a cascade of judicial and policy decisions, culminating in the deregulation—or, rather, re-regulation—of American telecommunications and, eventually, to a reconfiguration of telecommunications around the world (Cowhey and Aronson 2009).

The policy debates accompanying the rule changes and the shift in the logic of value creation, however, turned ideological. Those policy debates were coupled with the ascent of neoliberal thinking, which often focused on the purported need to get government out of the market and on the supposedly diminishing ability of national governments to shape their own markets and economies (Cerny 1995; Genschel 2004). The debates on “deregulation” and “globalization” had many sources, but they were consistent with the policy concerns of firms that were spreading production across diverse borders, of strong new competitors in Japan and China, and of the ICT-enabled reorganization of industry and services. Just as these rediscovered, or invented, “truths” about the role of state in the market turned into the ruling neoliberal economic paradigm, the financial crisis erupted.

For three decades, the state had been told to get out of the way to facilitate ICT-enabled innovation and adaptation and the effective deployment of these in sectors such as finance.

However, the same deregulation and self-regulation that facilitated innovation and adaptation laid the foundation for the financial crisis. The capacity to process information is one thing; the ability to process information *wisely*, however, is another matter.

The financial debacle of 2008 must be seen as the first major economic collapse of the information era. All the elements that contribute to the particular character of this bubble and crash, from the particular products to the new markets on which they are traded, are products of the information revolution. Collateralized debt obligations, the aggregation of individual securities into packages that supposedly reduced risk by reducing dependence on particular outcomes, are possible only with computers. The complex, ill-fated derivatives require complex mathematical formulas and powerful computing. The notion emerged that complex computer models with massive computing could remove the risk from the resulting financial bets and increase profits for both new and old financial organizations in the process. The integration of international markets and massive trading strategies requires communications networks to have an ever-larger capacity. The reforms arguably repaid the bets handsomely, generating massive gain for the winners and cushioning the consequences for the losers. Hidden from view in the heady days of frothy profits was the fact that this “self-regulating” market was actually a myth.

In Chapter 8, Mark Blyth argues that this time really is different: The failure to distinguish “risk” from “uncertainty” accounts for the fundamental misunderstanding of the crisis by many analysts and policy makers. As important, the crisis was the turning point in a profound transformation of the global financial system. This turning point shows up not only in the financial statistics but also in the debate over the relative power of the advanced and newly wealthy emerging economies in the control of global financial institutions such as the International Monetary Fund and the World Bank.

Unleashing the market and the force of information technology was one aspect of the dilemma. Then, as we approached the precipice of a depression after the financial crash, there suddenly were insistent demands that governments fix things and that the market rules, particularly financial market rules, be reset. Consequently, the state now finds itself in the double bind, in which it is asked simultaneously to unleash the power of market “innovation” to generate value by and to manage and maintain the market system to avoid catastrophic consequences, such as the financial crash.

For many, this was a painful rediscovery of the simple truth: All markets are built on rules that allow them to function, without rules there are no markets. The choice of rules powerfully influences not only the stability of the market, but also who benefits and who does not, or crudely, who wins and loses. Arguments about the validity and necessity of state action, which lay dormant until now, resurfaced. For some, the financial crisis was seen as an illustration of the limits or the failure of the American capitalist model, which was often equated in the popular conception with market deregulation and restrictions on state action. In Japan, the Ministry of Economy, Trade, and Industry and the Ministry of Communications pointed to a crisis in the financial markets and the commercial success of Korea as a justification for relaunching a debate on industrial policy. At the same

time, reinforcing this shift in attention to the need for some state action, the debate over global warming produced a call for the state to take the lead in transforming the use of energy.

There is an emerging conundrum that policy makers must resolve as they seek the appropriate blend of policy, regulation, and government action with a combination of market operation and private initiative: how to address the gap between the issues, policies, and debates that were stressed before the meltdown of the financial markets and those that were emphasized after the meltdown.

## Part I. Before the Meltdown

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The dramatic recent evolution in the ways that companies create, and are politically allowed to create, value is entangled with the development of ICT. ICT is a current (and, at present, the most important) example of the rise of general-purpose technologies, whose impact is widespread across all sectors of the economy (Helpman 1998; Helpman and Trajtenberg 1998). As Levy and Murnane (2004) argue, the digital revolution requires a basic shift in education and training to capture advantage and sustain employment. The explosive growth in computing technologies—processing power, memory, storage, transmission, and sensors—was consolidated in a series of *innovation ecologies* that created new potential business strategies and production organization and opened an era of experimentation. The scale of the increase in information technology is difficult to fathom. The simplest and most suggestive measure of this scale, namely, the ability to process information, increased more than a trillion-fold in the past century. Since 1940, computing power has been increasing at roughly 50 percent a year (Nordhaus 2002). At least as important, each platform, from mainframes to minicomputers to personal computers to networks to the Internet, and now to “the cloud,” necessitates radically different forms of organizations, skills, rules, and (social) roles. The ICT revolution unleashed, and in turn has been shaped by, a constant revolution in social and market organization. This constant experimentation and reshuffling and the creation of new business models generate demand for new rules and new approaches to governance. Two dramatic shifts occurred: the decomposition of production and the transformation of services enabled by ICT.

### THE DECOMPOSITION OF PRODUCTION

Production is no longer organized in vertically integrated companies focused on home locations. This process of decomposition has been under way and understood for some time (Arndt and Kierzkowski 2001; Hirst and Zeitlin 1991; Sabel 2004). The ICT industry has been at the forefront of this transformation of the organization of work, while also producing the tools that facilitated the decomposition of production. As is widely discussed in the case of manufacturing, companies have broken up the components of

production, from research to final assembly, and sourced them throughout the world, whether from within the firm or from outside suppliers (Sturgeon 2000, 2002). For our purposes, decomposition refers to the geographic and organizational recasting of operations that run from actual manufacturing to research and development (R&D) and strategy. It refers to *outsourcing*, purchasing goods or services outside the boundaries of the particular firm, and *offshoring*, whether by moving internal activities to another country or by buying from a supplier in another country. A detailed look at decomposition would consider component production, modules, and subsystems, their definitions and boundaries, and how the puzzle of the final product is constituted in the end. It would consider when activities are kept within the firm and when they are moved out of the firm, when they are kept at home and when they are moved “offshore.” The contemporaneous geographic recasting of production tasks across borders and its recomposition in final products have come to be known as supply networks. The notion of value networks or webs of components, modules, subsystems, and service bundles, as opposed to a simple value chain, suggests the constant reorchestration and relocation of the components of value creation and, importantly, the imaginative reintegration of the constituent elements. As we discuss below, just as manufacturing has been decomposed, so ICT-enabled services have been unbundled and redistributed geographically and organizationally.

These developments were assisted, and in turned empowered, by a series of policy choices, particularly by U.S. governments, from trade policy to competition policy. In developed countries, new definitions of the rules of competition encouraged and even legally demanded modularity and compatibility between equipment and components produced by different vendors. This is as evident in the Internet browser wars still going on, as it was in the earlier deregulation of AT&T (Cowhey and Aronson 2009). In developing countries, political and industrial leaders seized the market opportunities created by the decomposition and redistribution of production to link themselves to the global economy and ensure increased economic growth (Breznitz 2007b). Indeed, as the first section of this book describes in detail, this is the core difference between the current rise of China and India, and the challenges they pose to those who are already rich, and the earlier rise of Japan and South Korea. Although the decomposition of the production of goods and services is increasingly recognized, its implications for governance are less discussed and its implications for business strategy are increasingly confusing. Although we firmly believe that fragmentation is with us to stay, it is important to note a series of recent efforts to reintegrate production and some dramatic examples of heavy capital investment to maintain position in integrated facilities.<sup>1</sup> The decomposition and recomposition do not mean that every major corporation now looks the same in terms of its production processes—quite the opposite. Boeing, Cisco, Samsung, Dell, and Apple have rather different production systems, but they all use global production networks extensively in the delivery of their goods and services.

This decomposition of manufacturing and services, the pervasive reorganization and experimentation, however described, has three consequences.

First, each production element (a component, a subsystem, a module, or service bundle) suddenly becomes a potential product, a point of competition with possible new competitors in interfirm and international trade (Breznitz 2007b). For some firms, regions, and countries, that might mean a loss of competitive advantage or diminished price premiums; for others, it represents an array of new opportunities: opportunities to enter new businesses or to tweak or reformulate older offerings.

Second, the resulting intense competition led to commodification, which has been driving a constant search by firms and locales for the “sweet spot” in competition (a momentarily defensible point to capture distinctive advantage and profits). Firms must have the capacity to judge which modules or components will be decisive in creating advantage, which must be developed in-house, and which can be safely sourced from outside. That judgment must include an estimation of which elements will evolve radically and determine which in-house skills are needed in order to compete. What is required are not just the critical skills needed to produce particular artifacts or subroutines or merely the ability to create a system to reintegrate the decomposed outsourced components and constituent elements, but a combination of both. Similarly, locales must develop the ability to design policy that both attracts outside firms and skills and assists existing local firms in finding the “sweet spots.” The semiconductor industry is a perfect example. Firms once had to both design and fabricate their chips. At present, although some firms, such as Intel, remain integrated, most of the industry is decomposed into companies that focus on fabrication and those that focus on design. New competitive pressure appeared at all stages of production (Fuller, Akinwande, and Sodini 2003). Taiwan, as a policy initiative, created a “sweet spot” through the business organizational model of the “pure-play” foundry, that is a firm whose sole business is to fabricate for other companies the chips they designed (Breznitz 2005, 2007b; Fuller 2007; Fuller, Akinwande, and Sodini 2003). Locales must also have the judgment to invest in appropriate skills and infrastructure. More broadly, the search for the “sweet spot” can involve the reinvention of the very business. For example, although Apple’s iPod is extremely well designed, it is the iTunes service that anchors its position in the market. Apple understood before others that a simple mp3 device, in this case the iPod, was the portal to a service. The iTunes model, payment for media, also addressed the problem of the violation of intellectual property rights and significant loss of revenues to media companies, that file sharing often represented. As such, Apple, which views the hardware as its main profit source, managed to secure the backing of the media companies to sell their products—songs—at one low rate to secure a winning market share for its relatively expensive hardware.

Third, if Charles Wilson, as CEO of General Motors, was ever right in proposing that “what’s good for General Motors is good for America”—that the interests of giant integrated companies and their home communities are closely aligned—he would certainly find it hard to make the argument now.<sup>2</sup> The core location of innovation, not just employment, is at issue. Often governments invest in the stimulation of R&D projects by “their” national companies in the hope that such investment will translate into new



jobs and industries created within their national borders. However, those same firms then often locate the downstream activities, where job creation and economic growth benefits are often maximized, elsewhere, in locations that offer unique advantages unrelated to novel product innovation (Breznitz 2007b; Breznitz and Zehavi 2010). To compete, places and firms must develop both competencies and assets that allow them to retain high-value-added activities and good jobs (Zysman et al. 2007). Of course, that objective means different things for firms and places—and different things for different places.

This book explores the decomposition of production through the first new challengers to the dominance of the already wealthy to emerge on the cusp of global production decomposition: China and India.

Starting with China (Chapter 1: China's Run—Economic Growth, Policy, Interdependences, and Implications for Diverse Innovation Policies in a World of Fragmented Production), Dan Breznitz and Michael Murphree present a theoretical framework for understanding the rise of China as an innovative manufacturing hub within the constraints of a global system of fragmented production and a domestic political economy striving to create a capitalist society ruled by a communist party—an environment they call *structured uncertainty*. In so doing, Breznitz and Murphree also present a detailed account of the global decomposition of production and the rise of the Chinese ICT industry.

Gregory W. Noble (Chapter 2: The Chinese Auto Industry as Challenge, Opportunity, and Partner) then presents in detail how the interaction of the Chinese political economy of structured uncertainty with global production networks led to the specific evolution of the Chinese auto industry. Noble stands our notion of control and power on its head, showing how decomposition allows “less advanced” Chinese firms to “offshore” more “technologically advanced” activities to the best firms in the West to beat the established Western auto brands at their own game.

In the last chapter on China (Chapter 3: Center-Local Politics and the Limits of China's Production Model: Why China's Innovation Challenge Is Overstated), Crystal Chang complements Noble's work by focusing on the politics behind the development of the auto sector, in particular, the central/local divide, hence, tying the auto industry case back to the argument presented by Breznitz and Murphree.

Turning to India, Rafiq Dossani takes a deeper look at the services transformation and the use of the business models enabled by this transformation, and asks whether Indian ICT has finally arrived (Chapter 6: A Decade After the Y2K Problem: Has Indian IT Emerged?) The core argument is that significant corporate organizational innovation and national policy, not low wages per se, are central to the growing success of Indian ICT.

In sum, this story of decomposition has two important lessons. First, the dominant thrust of debate in an era of decomposition and experimentation, trying to ride the successive waves of ICT technology, was about deregulation. Second, the various locations