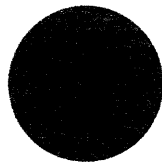


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**PHANTOM OF THE PARADISE:
UNRESOLVED ISSUES IN
JAPANESE INDUSTRIAL GOVERNANCE RESEARCH**

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I. Japanese Industrial Governance: Shadows Without Substance

Over the last decade and a half, no country has cast a longer shadow over economic development debates than Japan. Yet, like the Olympic gods, perhaps, or the apocryphal phantom of the opera, the country's industrial governance system retains the quality of a mythical brooding force—something omnipresent and inescapable, but never clearly faced on its own terms.

This ambiguity results in no small measure from Japan's status as the ultimate prize in political economy's endless grudge match, the state (or hierarchies) versus markets debate. Preoccupied with scoring points in the tired dispute, all too many observers simply ignore, or worse still, dismiss the fact that even the most sophisticated variants of either position do unacceptable violence to evidence from Japan.

The notion that Japan is "just like us" and organizes its economy, like all societies, around universal price and market cues, has been relentlessly advanced by indefatigable *Wall Street Journal* editorial writers and academic economists.¹ In this view, evidence of overt state intervention is weak and unconvincing, or at most a remnant of Japan's backward past, something discarded once the country matured. Japan's bursting bubble economy and current political turmoil is seen as the inexorable revenge of the market for whatever non-market hubris its bureaucracy was allowed to indulge. Sustained Japanese advantages can be most parsimoniously explained by favorable macroeconomic factors such as high savings rates and investment, factors that will inevitably equalize between countries over time.

The problem with market analysis is that while Japanese firms unquestionably do respond to price, wage and other market cues, they do so within a particular institutional and strategic context that deviates sharply from the universal systemic assumptions that undergird neoclassical economic theory. Public and private R&D and technology projects are carefully mediated to provide the widest possible access to industry teams rather than

¹For citations relating to the summaries presented this and the following four paragraphs, see the detailed discussion of Japanese research findings presented in Section II below. An excellent, still-vital review of the major positions advanced by the state versus market antagonists is presented in Noble (1989).

simply result in an award to the lowest bidder; companies are organized into multiple, overlapping producer associations through which everything from joint applications for capital, supplier work allocations, regional wage levels, design-in manufacturing collaboration, infrastructural investment, trade promotion, and training are pursued; over the last fifty years, radical interventions transformed Japanese capital markets and created the equivalent of a savings and loan industry to fund small- and medium-sized firm technology and production development; virtually every industry received subsidized capital or loans, from both “conventional” sources such as specially-chartered postal savings funds, and more exotic patronage such as recycled motorboat race wagering profits; local, prefectural and national governments provide extensive training and technology support programs, such as the ubiquitous *kohsetsushi* (technical centers); investment, product and procurement decisions are made by Japanese firms as much to secure technology access as on price or quality grounds; Japanese import pricing and foreign direct investment consistently fails to adequately respond to exchange rate and factor cost differentials; Japanese industrial groups do not tend to diffuse their operations internationally as do similar firms from most other advanced industrial nations.

Even this short list demonstrates that the market approach obscures far too much by not taking seriously the strategic principles and institutions that affect Japanese firms’ product and production decisions. As comparative evidence mounts that factor costs and price signals do not always, if at all, pull economies out of low-wage, low-skill traps in general, market analysis ignores precisely what is most crucial about understanding Japan’s achievements—the arrangements affecting the country’s economic actors that somehow set the nation on a high-wage, high-value added development path.

The statist position, however, overcompensates for such failures by arguing that bureaucratic regulation is the *sine qua non* of a successful economy. Economic development, it supposes, is too important to be left to firms, workers, banks and the like, let alone to the myriad special interests that, unchecked in a democracy, will inevitably squander resources on nonproductive activities. To succeed, a nation needs an autonomous, public-spirited, skilled, strong, developmental state bureaucracy—an “economic general staff” as exemplified by Japan’s Ministry of International Trade and Industry—to ensure a “politics of productivity:” the consistent, definitive, long-term

allocation of finance, markets, technical resources and regulatory support to the most sophisticated, high-wage, high-skill sectors of the economy.²

Although the statist approach does call attention to the interplay between politics, the bureaucracy, and the Japanese economy, even a cursory examination of the evidence reveals enormous problems. Japanese capital was not selectively allocated to high value-added “winners,” but to virtually every industrial sector, from coal to supercomputers, and the least successful sectors usually got more than others; MITI’s industry-specific plans were in nearly every case either drafted by industry itself, ignored, defeated or modified before implemented, or revised *post hoc* in ways inconsistent with the bureaucrats’ objectives; the most dramatic interventions in Japan—the restructuring of Japanese financial institutions, technical support programs, and industry rationalization schemes, for example—were more often than not successful, if at all, only to the extent they led to outcomes precisely the opposite from what the bureaucracy intended; Japanese development is not characterized by generating technological, market share, and cost superiority in successive “winner” industries, but rather by the constant improvement of across-the-board capabilities in supply, niche and commodity markets ranging from flatware in Tsubame to camera equipment in Nagano, photonics in Shizuoka, and automobile components in Kanagawa.

All of this suggests that in Japan, as with political economy more generally, “two are too few;” it is difficult to account for the complexities of the country’s industrial experiences by presuming either that markets inherently self-govern, or that bureaucracies (or some other non-market *deus ex machina*) can obtain and wield the independent industrial wisdom necessary to overcome market blockages.³ The big losers in the current, constricted debate are the workers, firms, policy officials and scholars that turn to spectacular successes like Japan to find ways of coping with their own increasingly complex economic options.

²Two recent statements of this position are Johnson, Tyson, and Zysman (1989); Johnson (1993).

³For an argument that the markets versus hierarchies debate artificially limits the scope of political economic research, and a proposal for at least a third category of analysis, “constitutional ordering,” see Sabel (1993a).

The purpose of this paper is to once again make Japan relevant to people who are grappling with academic and practical economic development problems. Section I argues that “flexible specialization”—or at least the part of the theory emphasizing that institutional and informal arrangements between industrial actors and other players, including, but not limited to the state, can overcome blockages to, and maintain, continuous learning, skill and productivity enhancements within an economy—offers a more compelling perspective for interpreting the history and practice of Japanese industrial governance.⁴

This achievement, however, is not without its costs. Section II details three unresolved problems generated by flexible specialization analyses of Japan: (i) fashioning the nomenclature to comprehensively describe Japan’s industrial governance system; (ii) explaining why Japanese institutions do not generate the same deadlocks that bedevil economic activity elsewhere (the stubborn question of the uniqueness of Japanese development revisited); and (iii) assessing whether certain forms of exploitation—mercantile trade and technology strategies or maintaining a disadvantaged, permanent female and elderly labor supply, for example—are inextricably linked with the emergence of flexible industrial solutions in Japan.

Section III considers how the industrial governance issues germane to Japan bear on practical economic policy concerns, including: (i) defining basic industrial goals and the appropriate role of public institutions in light of continuous market and regulatory uncertainty; and (ii) balancing confrontational and cooperative industrial initiatives which avoid either stagnating alliances or centripetal fragmentation among economic actors.

⁴As used in this paper, flexible specialization does not refer to something that is simply the opposite of mass production or Fordism, but the generic concern to describe systems “in which firms know that they do not know precisely what they will have to produce, and further that they must count on the collaboration of workers and subcontractors in meeting the market’s eventual demand.” See Sabel (1988), 53-59. The theory directs attention to the ways that workers, firms, industries and regions become (or do not become) cognizant of the fact that they must reorganize their relationships beyond hierarchical or atomistic market models to succeed in a volatile economy, and to the particular solutions they develop to stimulate that awareness and sustain the bargains behind their organizational innovations. This paper argues that the history of Japanese industrial governance practices are better interpreted as the successive, gradual appreciation of market volatility, recognition of mutual dependence in responding to market conditions, and the institutionalization of constant bargaining facilitating both collaboration and the repeated reappraisals of industrial objectives and roles, than as the free market perfected or the triumphant masterpiece of an enlightened bureaucracy.

Section IV concludes with a brief account of how flexible specialization analyses of Japan (imperfections and all) inspired a major public rail authority in a troubled American city to fashion a surprisingly successful economic development strategy. In some ways, this example suggests, the questions people ask about comparative industrial issues, and then about themselves, may matter more in generating practical economic results than the consistency of their answers.

II. Glimpses of the Phantom: Key Features of Japan's Industrial Governance System

This section summarizes work describing the major characteristics of Japan's industrial governance system, from shop-floor, product and corporate strategies to national and international institutions. As we shall see (and as the Japanese themselves increasingly acknowledge) flexible specialization concepts profoundly resonate with the country's experiences.⁵ Unlike either the market or statist approaches, the approach focuses attention on the continuous process and product improvements, enhanced production flexibility, and collaborative design and manufacturing capabilities that are the dominant feature of the postwar Japanese economy. Further, it directly addresses, and helps explain, how Japan was apparently able to: (i) facilitate the collaboration necessary for producers to repeatedly define and meet extremely demanding quality and design requirements; and yet (ii) avoid either fragmentation leading to downward price and wage squeezing, or the static self-dealing that collective institutions elsewhere all too often provokes. In this perspective, the role of the state and other Japanese economic institutions has not been to provide definitive solutions to market challenges, or to simply "let the market work," but to constantly force industrial actors to experiment with innovative product and production strategies while assessing, monitoring and acting against either low-value added traps or industrial stagnation.⁶

⁵Although partially the result of trade frictions and the search by Japanese intellectuals for a legitimate way to account for their country's mercantile policies, there has been an outpouring of research recharacterizing Japanese institutions from the standpoint of flexible specialization. See, for example, Kiyonari (1990).

⁶For an excellent outline of the theoretical issues—applied in part to Japan—see Sabel (1993b).

Major findings include the following:

1. *Product differentiation and enhanced operational flexibility.* At one time it was believed that Japanese successes lay in perfecting the production and reducing the cost of mass market commodities such as high volume consumer electronics products or automobiles. After several adverse exchange rate moves, and unquestionable quality and product advances, perceptions of how “Japanese mass production” actually operates have substantially changed. Although, like all industrial economies, static assembly and manufacturing lines exist in Japan, the central organizing principle of the economy is fostering the continuous reformulation of the workplace to meet ever more demanding price, quality, inventory and design specifications.

In part to overcome export disappointments resulting from attempts to compete on cost with then-larger foreign producers, and in part to experiment with and “perfect” manufacturing processes introduced from abroad, by the early 1960s Japanese firms began to self-consciously pursue market differentiation strategies by making substantial product modifications—engine redesigns, component substitutions—more frequently and on lower production volumes than their competitors elsewhere. The diffusion of the *kanban*, or just in time inventory system, also caused producers throughout the economy to master at least limited degrees of continuous workplace modifications by forcing even the most standardized producers to juggle, with very short lead times, batch orders for parts and components.⁷

More rapid product cycles and increasing diversification generated intense domestic demand for technologies and skills that could facilitate constant manufacturing enhancements and modifications. Japanese firms in general—and especially the small to mid-sized suppliers—introduced programmable production equipment much earlier than did their counterparts elsewhere, and concentrated on such productivity enhancements as near-

⁷Japanese full-scale model changes in autos, for example, occur on a four-year cycle as opposed to 7-8 years in the U.S. and Europe, and Japanese firms will design and manufacture a new line of automobiles on a volume of sales from 2-5 times less than their U.S. competitors. See Asamura (1988a), 11-12; Womack, et. al. (1990), 119-126; Friedman, (1983) 357-363; Nishiguchi (1989) 335-343. Substantial annual, or even semiannual model modifications have become the norm in Japan. In the three-year period between 1972-1974, for instance, the top twelve Japanese electronics firms scrapped 387 color television models and introduced 487 new products. Nishiguchi (1989), 170-71.

instantaneous die and tool replacement capabilities.⁸ Even in high-volume industries such as automobiles, Japanese producers reconfigured their manufacturing set-ups and dies on a daily basis more than seven times the rate in the U.S., and almost ten times the rate in Europe.⁹ As the economy boomed in the period 1960-1980, the time required for production changes and the size of batch manufacturing fell while the demand for specialized components increased; on the same number of assembly lines (two), for example, a Japanese firm produced three types of alternators with 190 variants in production lots of from 1-60 units, while a comparable U.S. firm made one basic alternator with 23 variants in lots of from 100-3,000 units.¹⁰

2. *Flattened corporate hierarchies; blurry corporate boundaries.* For several reasons in the postwar period, operational and technological authority was continuously devolved downwards and across firms in the Japanese corporate hierarchy. Production goals, including the improvement of mass production techniques, product diversification, quality enhancements, and constantly reduced inventory times and cost were increasingly achieved by adopting U-shaped assembly lines staffed by workers with the ability to identify problems, stop the workflow, design solutions, and restart the operations, quality circles, broad-based worker training and generalized, age-cohort rather than task-specific job classifications.¹¹ Suppliers (as noted below) not only bore responsibility for finding solutions to manufacturing objectives, over time they became autonomous experts in specific design or production tasks whose knowledge was increasingly opaque to their larger, but less adept customers.

⁸For details on the interaction between smaller suppliers and the diffusion of computer controlled production machinery, see Friedman (1988), chs. 4-5.

⁹Nishiguchi (1989), 324-25.

¹⁰Nishiguchi (1989), 325-26.

¹¹For descriptions of enhanced Japanese labor skill and autonomy as they relate to production flexibility in general, see Friedman (1983), 377-79; Koike (1978). An account of the generalized task categories and functioning of the U-line and other skill dependent production systems that are the backbone of Japanese manufacturing, see Ikeda, Sei and Nishiguchi (1988); *Tradescope* (1987), 5-6. Nishiguchi (1989), 331-32, estimates that there are approximately three times fewer auto manufacturing job classifications and that Japanese workers operate three times more machines per manufacturing unit than in comparable automotive plants in America.

As shop-floor employees and low-level white collar workers assumed growing responsibility for both the conception and the realization of specific, indispensable tasks, management oversight became increasingly “lean,” frequently to the point of monitoring or blessing solutions conceived and designed by their subordinates.¹² Supplier wage rates rose substantially, and ultimately exceeded comparable rates in larger firms for the first 5-10 years of post-secondary school employment (an advantage the majority of small firm employees retained throughout their careers provided they either entered white-collar, technical managerial positions, or opened their own firms, options denied large firm workers).¹³ To coordinate design, manufacturing and assembly tasks across increasingly autonomous suppliers, and to facilitate wage and price bargaining between vendors and customers, personnel or technical specialist exchanges—many semi-permanent—became commonplace.¹⁴

3. *Increased outsourcing and transformation of supply base roles.* Japanese suppliers and their core customers transformed the way that design, manufacturing and product integration responsibilities were allocated in the economy. At first a manifestation of a “dual structure” composed of technically adept larger firms and generally less skilled suppliers, larger companies increasingly demanded that their components and parts vendors shoulder the burden for finding ways to reduce costs, increase quality, pre-assemble key subcomponents, and eventually design whole families of parts. The lower-tier suppliers initially resisted these demands, but later actively sought the increased responsibility as a way of developing unique skills and knowledge for which they could charge a premium. In many cases, components price reductions and annual quality improvement targets were established by larger firms on the basis of *their* best capabilities. As suppliers became expert in specific tasks or products, they could devise proprietary ways of beating the base targets and pocketing the profits, or, in many instances, actually controlling the information necessary for setting the base targets themselves.¹⁵

¹²See, for a general summary, Womack, et. al. (1990) 198-200 and ch. 5.

¹³The pattern of wage increases in smaller subcontractors and career earnings differentials is discussed in Friedman (1988), 136-47.

¹⁴Nishiguchi (1989), 123-33.

¹⁵Comprehensive accounts of the transformation of the Japanese dual structure subcontracting system include Friedman (1988), chs. 4-5; Nishiguchi (1989), ch. 4. English-language discussions of the improvement/price determination negotiations between Japanese assemblers and their suppliers are found in Asanuma (1988), 18-21, and Asanuma (1989), (1985). Field interviews in December 1991 and May 1992 generated

The result was dramatically increased rates of outsourcing throughout Japanese industry. Overall, the share of manufacturing value-added accounted for by firms of just 299 or fewer employees rose from 49% in 1954 to well over 59% by 1988. If the contributions of the *chukken* or middle-tier firms of about 300-2000 employees are added to the figures, a staggering 93% of the Japanese manufacturing workforce and close to 85% of production value-added was accounted for by smaller to mid-sized firms, the largest such deconcentration among major industrial states.¹⁶ In Japan's biggest manufacturing sector, automobiles, outsourcing rose to from 66% in 1961 to 75% in 1986.¹⁷

During this period, the suppliers' roles grew from simple build-to-specification (*taiyo-zu* or "drawings supplied") production, to increasingly advanced assembly and fabrication tasks, finally encompassing complete responsibility for designing, integrating and fabricating the components they made, subject only to their customers' final blessing (*shonin-zu* or "drawings approved"). Japanese supplier surveys regularly demonstrate that smaller firms increasingly competed on the basis of technology, design, and manufacturing skills, not by offering lower costs or serving as a buffer against business cycles.¹⁸ As design skills supplanted cost as the primary basis for procurement, suppliers became "black box" producers relative to their larger customers, often earning substantially higher profits despite formal equity ties.¹⁹ For many components, Japanese suppliers in effect did to their corporate clients what Japanese companies overall seem to do to the rest

substantial discussion of the tactics involved in negotiations over prices, the development of proprietary technologies without alienating customers to the point they might refuse to deal with the suppliers, and the allocation of surplus savings beyond expected reductions.

¹⁶Estimated from the *Kogyo tokei nenpo* (industrial statistics annual) published by the Ministry of International Trade and Industry.

¹⁷Nishiguchi (1989), 163.

¹⁸Summaries of representative surveys conducted by the *shoko kumi-ai chuo kinko* and the *kokumin kin-yu koko* include Kiyonari (1988) and Friedman (1988), 158-61.

¹⁹See Asanuma (1989) and Nishiguchi (1989), 201-14, for details of the development of "drawings approved" or "black box" components design and manufacture. In one revealing survey, researchers found that assembler (large firm) control of design and manufacturing specifications amounted to 76 and 50 percent of all automobile procurement by U.S. and European firms, respectively, but just 30% in Japan. As cited in Nishiguchi (1989), 208.

of the world—indigenize and control the design and fabrication of indispensable specialized products or skills for which they can charge premium prices.

4. *Diversification of supply, industry and customer base.* As the suppliers increased their scope in the Japanese economy, they also diversified beyond their traditional *shita-uke* and *joge* (dependent, inferior/superior) relationships. Between 1966 and 1985, for example, the percentage of the smallest manufacturing subcontractors (from 1-19 employees) that relied on a single customer for over 80% of their business decreased from 53% to just 30%.²⁰ Both to forestall single industry cyclical dependence, and to learn and apply their skills in new markets, suppliers also enhanced their inter-industry diversification. The expansion of traditional auto suppliers into electronics, or environmental firms into aerospace, for example, led to dramatically diversified production networks; many companies—including the largest firms—would function as fourth or fifth tier suppliers of uninteresting parts in one industry, and yet be technology design leaders and integrators in others. Multiple, overlapping manufacturing and technology networks formed on top of each other as traditional business relationships, preserved more or less intact, increasingly provided the cash flow or business base for companies to enter more interesting, growing markets.²¹

5. *Producer associations.* Postwar Japanese firms organized a variety of horizontal, regional, intercorporate group and industry producer associations, including: (i) *keiretsu* or business groups (both vertical, such as the “Toyota Group” and inter-industry, such as the “Mitsubishi Group”), formed by equity, debt, and corporate directorship linkages among a set of “parent” firms and first or second tier suppliers; (ii) industry promotion groups, such as the *kikai kogyo shinko kai* (machinery industries promotion bureau), or the *keidanren*; and (iii) local, regional and prefectural *kogyo kumi-ai* or producer alliances and company *kyoryoku-kai* or cooperation/study groups.

²⁰Kiyonari (1988), 11, summarizing *chushokigyochō* (Small and Medium Enterprise Bureau) survey data for the relevant years.

²¹Comprehensive data on inter-industry business links and technology diffusion does not yet exist, but the subject is one of the primary topics of business leaders in field interviews. For a study of these issues in the aerospace and defense industry in Japan, see Samuels (forthcoming); Friedman and Samuels (1993); Friedman (1993).

The *keiretsu* remain the most problematic business groups in Japanese economic studies. Research has shown that the equity, debt and interlocking director links that define the horizontal *keiretsu* have endured largely unchanged from, in many cases, the pattern of prewar *zaibatsu* ties. Much less can be said about the behavioral implications of inter-industry groups beyond an affinity to utilize related capital sources, a tendency to buy “group” alcoholic beverages at company functions, and the propensity of certain commodity producers (steel or chemicals firms, for instance) to market globally through affiliated trading companies. Evidence has not conclusively demonstrated, however, that the horizontal *keiretsu* undertake or sponsor coordinated product development, pricing, technology investment or other, more significant economic activities.²²

Similarly, the extent of close vertical *keiretsu* market coordination is difficult to assess. Below the first and second tiers—Toyota Motors and Akebono Brake or Nippondenso, for example—overt “parent firm” equity and debt linkages largely vanish; even quite substantial “group” members (suppliers with equity ties to their “parent”) rely on non-group resources—especially regional banks and technical centers—for capital and technology. Research also shows that core *keiretsu* transactions and business relationships increasingly make up less and less of a “group” member’s business, even for top-tier joint-equity suppliers.²³ In some cases, moreover, lower tier suppliers have reversed the adverse economic and market power relationships characteristic of the early postwar period, an occurrence common enough to warrant a new catchphrase in Japan, the

²²The best statistical study and summary of literature regarding *keiretsu* inter-industry capital, equity and directorship linkages is Gerlach (forthcoming). Lacking from the analysis, however, is compelling evidence of substantial technological, manufacturing or other production consequences flowing from the pattern of enduring links that he identifies.

²³Survey and interview data shows that smaller to mid-sized firms have virtually no equity or capital links with the core assemblers, and that the rate of even indirect capital or technical subsidies by larger companies falls off dramatically through the lower tiers of the Japanese manufacturing networks. See, for a summary for representative data, Friedman (1988), 150-51. A number of studies have demonstrated that even larger subcontractors substantially owned by the major assemblers—Toyota first-tier group members, for example—belong to the *kyoryokukai* and sell extensively to competing groups. See, for an example, MRI (1987) (of 60 larger suppliers participating in five or more automakers’ *kyoryokukai*, 38 had direct equity links with one major auto firms, and yet were also central members of other manufacturing groups, such as Toyota owned firms in Nissan manufacturing networks). This result can be explained in part by (i) the desire by the assemblers to reduce procurement costs by broadening the base of their suppliers, and (ii) the need for the suppliers to access and learn from the widest range of experience.

gyaku-keiretsu (literally, “reverse *keiretsu*,” a phrase connoting, as in wrestling, a sudden, unexpected victory by an underdog against a superior opponent).²⁴

Industry promotional groups are less problematic and assume much of the form and function of trade associations everywhere, undertaking a wide range of lobbying, technical and market research, and serving as the interface with the Japanese national bureaucracy for trade and inter-industry concerns. The trade associations have also coordinated R&D teaming and, when such matters were openly part of Japanese industrial policy, helped organize (and thwart) the often impotent but notorious “recession” cartels or production rationalization schemes not infrequently mounted by MITI in the 1960s and 1970s.²⁵

Regional and local *kumi-ai* and company *kyoryoku-kai* (coalitions of suppliers serving a common customer, such as Kawasaki, Nissan, or Sony) comprise the most diverse set of producer associations, and frequently overlap. Both derive largely from export and industry associations set up in the prewar period to protect suppliers, especially in textiles, from onerous wage and price sweating, and to upgrade production capabilities by setting quality standards and diffusing industry best practices among the participating firms. In the capital-poor environment of the early post-war period, and following the reauthorization of the enabling prewar legislation, *kumi-ai* and *kyoryoku-kai* sprouted in virtually every manufacturing region to lobby for legal protection for subcontractors, facilitate joint applications for capital and technical assistance from regional and national authorities, establish region-wide R&D and business assistance facilities, and negotiate wage, price, work allocation, technology access and grading standards with their larger customers within and without the region. Later, as they secured substantial legal victories

²⁴Larger firm executives, for example, state that a primary management concern is to recover the knowledge lost to suppliers that the firm “owns,” and to build new alliances with firms that compete with their own suppliers to provide some form of countervailing power in price and technical negotiations. Field surveys conducted in May, 1992, also demonstrated that many of the name-brand larger firms in Japan have been reduced to the role of spot assemblers of products made and designed elsewhere, much like similar companies in the U.S. The term *gyaku-keiretsu* has been used to describe Kanagawa, where Nissan and electrical components suppliers motivate major design and manufacturing decisions, subordinating their former “parent” firms, and among the myriad younger design and components specialists setting up firms in large urban areas to service larger companies, many of which are viewed as bureaucratically stultified, incapable of innovation or creativity. From interviews conducted in Tokyo, Kanagawa, and Shizuoka, December, 1991 and May 1992.

²⁵For a machinery industry trade association case study, see Friedman (1988), ch. 3.

ensuring timely, fair payments from the larger firms and creating massive new banks to exclusively serve their financial needs, the regional and corporate groups increasingly functioned more like credit unions serving broad, regional constituencies and subsidizing retirement and insurance programs, schools, housing and other social programs. They also coordinated newsletters, industry study groups, and the endless social functions corporate entities, and their employees in Japan, are fated to endure. Many, if not most regional producer associations received cash or in-kind (such as buildings) support from local and prefectural authorities to help define, if not actually create and administer, the various financial, technical and market assistance schemes offered by various tiers of the Japanese government.²⁶

6. *Proliferation of performance standards.* Basic, quasi-contractual rules or principles regarding quality and price targets, profit sharing and information exchanges diffused throughout Japanese producer groups and procurement networks in the postwar period. Suppliers were expected meet cost reduction and enhanced quality standards set annually in terms of price or number of defects per part or batch. The following year's targets were usually based on the previous year's achievements, plus any adjustment due to prevailing exchange rates, and the quality or cost improvements the procuring firms estimated they could achieve with their own technology. If suppliers could exceed the targets by unilateral improvements (and keep their real costs more or less hidden from their customers), they generally could keep the additional profits over a specific period. Where joint development or technical assistance was necessary to meet the targets, profit sharing formulas were used to split better than expected results among the collaborators.²⁷

In addition to price and quality specifications, firms usually established goals regarding workshare, production roles, and the like to enhance response times and product capabilities. These objectives were incrementally tightened on an annual or semiannual

²⁶Detailed discussions of the function of the *kyoryokukai* and *kumi-ai* in different industries and regions are found in Friedman and Samuels (1993) and Friedman (1993) (Kakamigahara, aerospace); Friedman (1988) (Sakaki, cameras, optics and machinery); Nishiguchi (1987), as cited in Sayer (1989), 686-87. For a description of legislative victories achieved by the producer associations and the legal framework authorizing their existence, see Nishiguchi (1989), 123-42.

²⁷Descriptions of price and supply negotiations and target cost strategies are provided in Asanuma (1988), 18-21 and Nishiguchi (1989), 199-204 (bilateral price determination rates rose by 1983 to over 83% of all transactions from just 32% in 1962).

basis, causing constant readjustments of personnel, machines and manufacturing and distribution routines. In most cases, a basic, generic contract provided the formal legal framework for supplier/customer relationships that were continued in effect until one or both parties complained or requested readjustment.²⁸

Most customers institutionalized bi-annual assessments of their suppliers' performance, grading the firms in several detailed respects on an "A-B-C" scale. This process gave rise to a complicated set of industrial calculations on the part of suppliers and customers alike. In general, a higher grade meant greater compensation, but with "A" or "B" status, a supplier would also be expected to provide its customer with detailed financial, manufacturing and other access to proprietary information. Many suppliers balanced their relations in accordance with their strategic needs. Those that did not want to place proprietary data at risk, for instance, would settle for "C" class status; others, without unique processes or capabilities, would seek closer production ties or more extensive orders from their customers by trading their financial and industrial data, or even, on occasion, their personnel, for "A" or "B" status. Grading therefore took on meaning beyond a simple performance rating, signalling a whole range of commitments and expectations between the participating firms.²⁹

7. *Technical support.* Japanese local, prefectural and national governments supported a large array of technical and R&D assistance centers. The best recognized—large-scale research centers like Tsukuba, or "technopolis" projects grouping a wide range of affiliated *chukken* companies in a single geographical area as in Hamamatsu—were often the least impressive in practice, often because they reflected the non-industrial imperatives of bureaucratic leaders, or opportunistic local land developers.³⁰ Much more significant

²⁸See Asanuma (1989) for a description of generalized contract practices.

²⁹Asanuma (1989) and Nishiguchi (1989), 215-20 summarize findings relating to the links between price, technical assistance and design represented by various grading schemes. Suppliers also indicated that a more subtle process was at work. Firms might trade a lower grade for the right to greater production and financial autonomy; a high grade would indicate that the subject firm sought to be a core group production member, and would generally obligate the management to turn over sensitive company data in exchange for favorable procurement or price guarantees. Many company managers opined that they preferred a lower grade to preserve their autonomy, using a slightly less intimate relationship with major customers to develop proprietary OEM or "name-plate" products and thus increase profits.

³⁰In interviews, the manager of the Hamamatsu Technopolis merely shrugged and laughed when it was suggested that most of the firms taking advantage of the real estate

were regionally dispersed technical centers, including small and medium-sized firm manufacturing assistance centers, or *kohsetsushi*, a program which apparently inspired President Bill Clinton's campaign rhetoric. Built around local and regional producer associations, the scope, functions and operation of these centers were defined by the precise needs of the recipient firms. In locations as diverse as Gunma, Shizuoka, Nagano and Kanagawa, national and regional funds were channelled to local authorities with only the most general oversight requirements. As a result, virtually every manufacturing hamlet in Japan boasted a technical resource center, whether a formal *kohsetsushi* program, or a less imposing but equally valuable village cooperative "research" lab.³¹

The technical centers complemented the devolution of manufacturing skills and tasks in the Japanese economy. Suppliers faced with reordering workflow, introducing new equipment, learning about new materials, and designing parts they once simply built-to-specification could obtain expert assistance for business and production problems through the centers. Perhaps as important, the centers often facilitated joint exchanges of information, either in the collective definition of programs to be funded—which revealed the kinds of issues regional producers thought were of primary concern—or in the specific solutions company representatives would discuss in formal and informal meetings. Regional technical centers also provided suppliers with an alternative, non-centralized source of advice and assistance, facilitating necessary upgrades and new capabilities without the necessity of making proprietary disclosures to, or becoming reliant on, their larger customers.³²

8. *Capital support.* The role of capital subsidies—industry investment funds culled from motorboat race wagering, tariffs and the like, below-market bank loans, government grants, favorable public contract pricing, or indicative "window guidance" intervention—remains one of the most controversial features of the Japanese economy. That such

subsidies already had the kinds of intercorporate links that the project apparently sought to inspire. "If it isn't necessary," he said, "that's O.K. with me; I can go fishing."

³¹In the campaign, Clinton proposed a network of 170 small firm technical centers, exactly the number of *kohsetsushi* maintained by the Japanese. For details on the *kohsetsushi*, see Shapira (1992).

³²The development of independent technical, capital and business resource options to primary customers was especially important in the early period of most regions' postwar recovery. See Friedman (1988), ch. 5; Friedman and Samuels (1993).

subsidies—largely government backed loan programs— existed, and in some form persist, is not in serious dispute. Much less clear is whether they were allocated to “winner” sectors in some definitive fashion and therefore explain major part of Japan’s comparative economic success.

Research of the genre “The Japanese Computer Industry: How MITI Helped Japan Take the Lead” greatly obscures the question of allocation because the relevant case studies almost never provide comparative data from other sectors. Evidence that a particular industry was subsidized has substantially different implications if *every* sector received support, or if a mix of high, low and medium technology enterprises were funded. Comparative data, in fact, shows precisely that virtually all industrial undertakings in Japan received government financial assistance, and that “sunset,” but politically sensitive sectors such as coal mining, agriculture, shipbuilding and electric power by far received—and continue to receive—the lion’s share of such bellwether programs as Japan Development Bank loans.³³

Focusing on the possibility that Japan might have systematically subsidized “sunrise” sectors, moreover, detracts attention from the massive interventions the state did make to provide capital for suppliers and regional producers. The single most extensive economic restructuring initiative in Japanese history may well have been the creation of a multi-billion dollar regional Japanese savings & loan industry—not for housing, as in America, but to finance the technical enhancement of the country’s increasingly dynamic supply base. Derived from prewar institutions originally intended by the bureaucracy to fund the elimination of smaller producers, the complicated vagaries of postwar Japanese politics ultimately brought forth a host of public, private and state-supported regional banks, mutual savings banks, postal and small firm deposit funds and other resources specifically earmarked for subcontractors and suppliers. Throughout the 1950s-1970s, these institutions provided most of the institutional funding (as opposed to self-generated sources such as retained earnings or family lending) for investments in technology, market research, machinery and infrastructure Japanese suppliers required to upgrade their skills and enter new markets. The unparalleled decentralization of industrial finance ensured that capital would be available to support the devolution of manufacturing functions, and the

³³See Horiuchi (1984); Friedman (1988) pp. 86-90.

expanded, more complex roles sought by individual firms and coalitions of producer associations.³⁴

9. *Domestic industrial "planning."* The most controversial Japanese research continues to focus on the nature and influence of bureaucratic economic planning. It is generally thought that Japanese bureaucrats guided the country's transition to heavy industrial development in the prewar, wartime, and early postwar period. By far the most analysis has focused on the post-1960s' period, a time in which supposedly overt government controls were replaced by either the market, or a subtle, if hard to define form of state regulation.³⁵ The evidence, however, suggests a much more complex pre- and post-war history.

Even during the 1930s' mobilization, the wartime industry council efforts, and under the aegis of the various industry-specific promotion laws passed in the 1950s-60s, both the intent and substance of government policies were repeatedly transformed by industry and government politics. Three goals of prewar industrial policy, for instance, were to consolidate the small firm sector into larger units to achieve economies of scale, reduce the power of the *zaibatsu* by creating less westernized, but still efficient alternative industrial groups, and to rationalize military production into networks of tightly integrated machinery and supply companies. The bureaucracy miserably failed at each of these objectives; even during the war coalitions of smaller and larger firms thwarted the military and industrial consolidation schemes, and *zaibatsu* interests repeatedly prevailed over the "new bureaucrats" pressing for "reforms"—albeit of a fascist bent.³⁶ "Hard" state planning and enforcement was difficult even when the Japanese state's authoritarian powers were at their apex.

³⁴The history and effects of the small firm financial interventions in Japan, and a summary of relevant sources, is described in Friedman (1988), chs. 2-3. See also Section III.C, below, for a discussion of the political background of these measures.

³⁵See Noble (1989), 67-69 for review of this argument.

³⁶See Friedman (1988), ch. 2 and Nishiguchi (1989), 73-83 (prewar and wartime efforts to regulate Japanese producers and create economies of scale succeeded in generating institutional prototypes that later helped stimulate a very different postwar outcome—a decentralized, devolved network economy—almost precisely opposite from the MCI's goals).

Similarly, MITI's postwar industrial centralization and reorganization schemes—including energy, electronics, machine tools, automobiles, steel and recording technology, to name just the more notorious examples—never were implemented as planned. In many cases, such as machine tools, positive economic results correlated with strategies diametrically opposed to MITI's objectives, an outcome the bureaucracy later took credit for by amending *its* plans to reflect reality. MITI and other local, regional and national government actors often articulated more or less clear visions of how industrial development might proceed, and engaged industrial interests in extensive, if not protracted debate, but Japan's economic evolution did not unfold in anything like the manner its bureaucracy intended.³⁷

Finally, while many sectors did fade in Japan for economic or technological reasons, the country's industrial history is less a spirited rendition of “sunrise-sunset” than the successive movement by producers in all industries towards higher value-added operations. Firms affected by the scaling back of the coal machinery or shipbuilding sectors continued to service those industries worldwide, often by becoming the most advanced producer of key components or technologies. Flatware, textile and steel manufacturers were not simply killed off, however humanely, by a prescient bureaucracy enamored with plastics, semiconductors, or optics, but rather diversified their skills and products—upgrading metallurgical talents to produce high-quality cast products in Tsubame, investing in unique synthetic fibers as in Hokuriku, or introducing mini-mill technology.³⁸ The state's role was less to shift Japan away from “inherently” low-wage, low-skill industries (many of which, as in other countries, blossomed again in new forms), than to bring producers throughout the economy to constantly consider how they would generate high-wage, high-skill outcomes; only those players which could not articulate even a semblance of a strategy retired from the scene.

³⁷See Noble (1989) 71-95 for examples from the steel and electronics industries; Samuels (1987) for energy; Friedman (1988), ch 3, for machine tools; Nishiguchi (1989) 133-142 for the failure of wartime small firm consolidation efforts; Tyson and Zysman (1989), 121 for a summary of various MITI failures and the (somewhat ironic) recognition that the intent of the bureaucracy was often thwarted in practice.

³⁸Field interviews, December 1991, May 1992. Even when redeployment was unavoidable, government policy did not so much hasten the movement to “sunrise” sectors, but struggled as long as possible to assist troubled industries, and then reluctantly, and slowly, help resources move elsewhere when it became clear that no workable future strategy remained. See Samuels (1983)(aluminum) and (1987)(coal).

Rather than definitively arbitrate and allocate economic resources, Japanese bureaucratic action seems better characterized as constant, interactive monitoring. Paralleling the pattern of loan subsidies, the government served as an interlocutor for virtually every industry, from high-tech manufacturing to the more mundane world of woodworking or apparel. The myriad industry councils and study groups sponsored at all levels of the government facilitated constant queries by public officials and private interests concerning individual and collective corporate and industry strategies. This ongoing dialog, especially when linked to modest financial or legal initiatives, supported direct, collective discussion about what Japanese firms were trying to achieve, and what they needed to succeed in world markets. Functioning as an inquisitor, not a dictator, the state helped sustain the constant reappraisal of industrial thinking and practice that firms themselves were stimulating through production devolution, grading schemes, producer associations, and constant skill upgrades.³⁹

10. Technology and trade policies to indigenize and diffuse technology.

Although the mechanisms of Japanese public and private trade, technology and investment policies have changed substantially, the motivation behind them has been remarkably constant: acquire, indigenize and diffuse full-spectrum technical and manufacturing capabilities in the domestic economy. Towards that end, Japan has variously: (i) overtly blocked foreign investment and market penetration where indigenous producers could not match or exceed world competitive standards; (ii) fostered teaming arrangements in public/private procurements—military aerospace and telecommunications, for example—that permitted the widest possible domestic participation in technology and product development programs, while presenting a single negotiating entity relative to foreign producers; and (iii) conditioned foreign investment or business licensing on technology transfers and/or component supply licensing offsets.

At the root of these strategies is a technology and security ideology which equates national welfare with acquiring and controlling knowledge, a concern so overriding in

³⁹Richard Samuels has suggested a different metaphor: the “exhortatory state.” Regardless of the phrasing, Japanese policy specialists increasingly seem to be groping for language that does not concede conclusive power to the state, but recognizes that government players are constantly involved in discussions about industry in Japan, a process that stimulates firms to think about their choices and options in ways that would likely not occur absent such attention. See Section III.A below for a comprehensive discussion of the problems involved in articulating these concepts.

Japan that even as tariff and similar trade barriers waned, companies reflexively elevated indigenous development to at or near the top of their business calculus. If international technology, investment and trade exchanges are likened to global highways, technology traffic arrives in Japan full and leaves empty; investment and trade vessels leave fully loaded but carry comparatively less on the return journey. Japanese trade and technology strategies accomplished a remarkable feat: assuring the steady influx of know-how and skills, blunting direct market and reciprocal acquisition opportunities for foreign producers, but simultaneously diffusing the acquired technology broadly throughout the economy and thus assuring that the corporate beneficiaries would not opportunistically exploit protectionist measures.⁴⁰

Taken as a whole, major Japanese research findings describe an industrial governance system that strikingly resonates with flexible specialization perspectives. Driven by continuous product and production improvements, Japanese firms found, as the theory predicts, that they had to devolve decision making and operational authority, jointly acquire and indigenize technology, and form increasingly dense manufacturing linkages across an expanding range of sectors. Industrial initiatives of this sort, however, must constantly overcome potential blockages and holdups: firms up and down the manufacturing stream may be unwilling to become dependent on specific suppliers and risk price extortion; key participants in a production network might demand exorbitant wage or price concessions from subcontractors, requirements that could undercut limits to rapacious activity and cause entire regions to fall into low-wage, low-skill traps; customers and suppliers alike might fear the open diffusion of their market or technical knowledge and condition their exchanges with onerous legal, contractual or market restrictions.⁴¹

⁴⁰For a comprehensive discussion of the theory and practice of Japanese technology and trade strategies—dubbed “technonationalism” by the author—and an account of “technology highways” into and out of Japan, see Samuels (forthcoming). Japanese teaming arrangements, especially with international partners, are described in Levy and Samuels (1989) and Whipple and Samuels (1989). For a specific analysis of these issues in aerospace, see also Friedman and Samuels (1993).

⁴¹A short, incomplete list of literature describing this generic problem, and the solutions in a variety of national contexts includes Sabel (1988) for general background; Herrigel (1988) for Germany; for Italy, Piore and Sabel, (1983); for studies of American flexible manufacturing regions see Saxenian (1991), and Storper and Christopherson (1987).

A wide range of Japanese industrial governance institutions helped avoid such problems. Regional, local and corporate producer groups made possible collective action against wage and price sweating and secured national legislation to protect smaller producers. They also helped diffuse basic expectations and business practice standards—manufacturing “constitutions” in the language of flexible specialization theory—that loosely set the parameters for acceptable intercorporate relations.⁴² Technological, financial, market or other dependencies that might have tipped the balance of power too far in one or another set of producer’s favor, and therefore encouraged predatory behavior akin to the 1950s’ “dual structure,” were mitigated by the provision of autonomous capital and technical resources and the steady diversification of supply and procurement relationships throughout the economy. Potentially disruptive foreign incursions were avoided by outright protectionism, and by pursuing technology or procurement offsets in exchange for limited market access. At all levels of government, the state was responsive to the particular requirements of individual industries, regions, or even producers, and parcelled available resources to recipients in virtually all of Japan’s industries.

Flexible specialization theory suggests, however, that solving holdup problems is just half the battle; the risk that producer associations, protectionist policies, subsidies and regional wage, price and other bargains will generate self-dealing and stasis—and thus frustrate learning—must also be reduced.⁴³ In Japan, such opportunistic exploitation was avoided partially by corporations and producer associations themselves, principally through the diffusion of objective performance and grading standards that governed intercorporate relations. Japanese firms learned to identify network participants that were not making efforts to meet quality, cost, design or other industrial objectives, and to take remedial action as necessary to assure compliance.

But government actors also played a role, exchanging legislative, financial or technical support for the right to query, cajole, exhort, threaten and otherwise stimulate constant debate among domestic economic players about what they were doing to succeed. As a result, instead of permitting firms to consolidate static production practices behind trade barriers, or to negotiate market and distribution agreements among themselves to avoid design, cost or quality improvements, Japanese intercorporate monitoring was

⁴²Sabel (1993a).

⁴³See the discussion in Sabel (1993b).

supplemented and heightened by constant examinations performed by ubiquitous local, prefectural and national state representatives. Without precluding industrial participation opportunities—indeed, by (however inadvertently) facilitating their expansion—government helped assure that institutions which made possible the collective rule-making and collaborative relationships would not also lead to self-dealing and stagnation.

Understood in this way, the evolution of Japan's industrial governance system has much different implications for economic development than conventionally assumed. But before suggesting some revised "lessons" Japan might teach, it is necessary to discuss some problems generated by the flexible specialization approach itself.

II. Flexible Specialization and Japan: Three Unresolved Issues

A. Describing Japan's Industrial Governance System

Perhaps the most basic difficulty with flexible specialization and Japan is presenting a comprehensive account that can accommodate the ideas of the state as interlocutor, collaborative, decentralized manufacturing industry practices, and the country's financial and business institutions without being forced back into the statist or market approaches. In the absence of a clear alternative, research that clearly departs from the market-statist dimension is often reclassified as a variant of one or the other approaches; conventional accounts that sound suspiciously like flexible specialization end up asserting traditional positions even though the caveats overwhelm the arguments themselves.⁴⁴ Compelling

⁴⁴Painful ambiguities result when theory confronts fact. Consider Tyson and Zysman (1989), 121, on the fact that Japanese cartel laws were generally ineffective: "The intent of the policies, to create advantage in advanced technology sectors, is clear. These cartels may be more interesting for what they say about the intent of policy than its direct effects. Whatever the intent of policies to rationalize industries, they have not always achieved their stated purpose. In the automobile sector, efforts at rationalization were blocked by the stubborn refusal of the smaller companies to follow government plans. In the machine tool industry, a series of plans to force concentration and product controls collapsed. More may be at issue than simply intent, however, when the policies do not achieve their state [sic] effects. For the most part, the issue is simply posed as whether the policy achieved its stated goals. Whether, and how, policies altered market structure is seldom examined." Another example is Johnson's (1993), 20-23, attempt to define just what "industrial policy," which he has championed for over a decade, is: (i) "industrial policy means the government's 'development, guidance and supervision of industry;'" (ii) it "does not mean the tired old cliché about the state's picking winners, nor does it mean the state's displacement of the market;" (iii) it is "a long term strategy aimed at learning to win;" (iv) "serious industrial policy means modifying the old-fashioned concept of comparative advantage to concentrate on industries with a high human-capital content such as steel,

though parts of the flexible specialization account might be, they do not yet add up to a whole picture.

Even worse, the lack of a coherent description of Japan also obscures the fact that flexible specialization is not just a middle ground between markets or hierarchies, but a theory that rejects the economic assumptions behind such accounts. Societies, it asserts, are not simply engaged in a struggle to let markets discover “the” efficient solutions to production and allocation problems, nor is their central task the construction of the best bureaucracies for ensuring orderly transitions to new technological trajectories.⁴⁵ Instead, it is more interesting to study the way communities enable or block the responses of their constituent populations, firms, regions, and industries to unknown and rapidly changing circumstances for which there is no “right” answer. When underlying theoretical issues are obscured, however, the result is all too often debate about relative trivialities while more significant industrial governance issues go unnoticed.⁴⁶

Before scholarship based on flexible specialization can stimulate more productive analyses of Japan, it is necessary to offer a description that systematically departs from

machine tools, and semiconductors;” and (v) it means “creating a financial structure that encourages managers to compete for market share.” Each of these accounts seems much more consistent with the flexible specialization approach than with the notion of a “strong state,” but the possibility of such a synthesis is unrecognized by the authors.

⁴⁵See Sabel (1993a, b) for a critique of conventional approaches and a discussion of the underlying theoretical issues.

⁴⁶A common criticism of flexible specialization studies, for example, is to debate whether mass production is completely in decline, whether small-batch production is everywhere predominant, and to observe that large and small firms do not define mutually exclusive worlds in most economies, but are closely linked. Applied to Japan, some commentators seem to think that the entire theory is discredited by the complexity of the country’s industrial reality. See, for example, Sayer (1989). Lost in these arguments are the fundamental facts that, irrespective of whether Japan is “really” flexible or simply a variant of Fordism, Japanese industrial actors “only:” (i) learned to devolve responsibility and skills from centralized cartel-like groups to an increasingly broad base of capable suppliers, (ii) built successively more sophisticated manufacturing, marketing and design relationships, involving complicated compromises as to prices, technology sharing, procurement and the like, among huge networks of companies, business groups and regions, (iii) encouraged constant production transformation and knowledge acquisition among industrial actors, and (iv) found ways of nurturing firms and workers that had acquired such skills and know-how without blocking incentives to continually improve and learn. Such outcomes are uninteresting only when the underlying economic and social questions researchers are willing to ask are too narrowly defined from the start.

market or statist treatments. There have been some promising first steps. Nobel (1989), 69-71 identified a "New Japan, Inc." approach among those studies which found that reciprocal state/private sector bargaining, rather than market or bureaucratic control, more accurately described Japanese experiences. His comparative typology of "markets," "developmental states," and the "New Japan, Inc." thinking, however, implicitly encouraged the idea that the market-state dimension defined the range of the relevant debate.

More recently, Samuels (forthcoming) and Friedman and Samuels (1993) have suggested that Japan is a "protocol economy," a world in which industrial actors, from the national government to the smallest subcontractors, are bound together by multiple, overlapping ties that provide access to economic and technical resources for a wide range of players, but also force them to continuously justify their actions to, and consider the effects of their decisions on, each other. Although useful in summarizing the pattern of bargaining, accommodation, technology diffusion and competition in the Japanese aircraft and defense industries, much more work needs to be done before the idea of a "protocol economy" can stand as a distinct position in contrast to conventional approaches. Similarly, suggestions that Japanese industrial governance involves an "interlocutor" or "monitor" state clearly accord with the evidence, and are explicitly linked to the theoretical premises behind flexible specialization theory.⁴⁷ Yet, they may also draw too much attention towards government activities when the most interesting industrial dialog, innovation and learning occurs directly between firms, business groups and other non-governmental institutions in Japan.

Until such ambiguities are clarified, alternative accounts of the Japanese industrial governance system will remain elusive.

B. Accounting for System Maintenance: Is Japan Unique?

Even if flexible specialization could consistently organize evidence about Japan, the challenge of explaining why the country's institutions do not exhibit the pathologies that would likely develop virtually anywhere else still remains. Without knowing the subject country, an economy characterized by multiple links between firms, banks, state and local

⁴⁷Sabel (1993b).

officials, suppliers and large firms, extensive industrial teaming, sustained international technological and market mercantilism—and a state perhaps best described as a relentless industrial nag—would almost certainly seem to any student of political economy a recipe for self dealing, gridlock, stagnation, and intractable corruption. Explanations for why such unfortunate results do not occur, moreover, seem inexorably to involve some version of *nihonjin-ron* (the theory of Japanese uniqueness), and undercut the general applicability of the evidence.

At the root of the problem is the idea, central to flexible specialization theory, that economic blockage and self-dealing problems can be overcome by trust. Japanese institutions don't gridlock and avoid corruption because the country's economic players—firms, workers, regional supplier groups, and state entities—have faith that other parties will not take advantage of them in ways that would require defensive, debilitating countermeasures. In a low-trust environment, the generalized principles that now govern work allocation and skill devolution in Japan would likely give way to minutely detailed rules which would frustrate continuous learning or change; successive efforts by the Japanese state to help and then destabilize domestic corporate networks would be subverted in favor of preferences for select groups, promoting stagnation rather than world market successes. If trust is possible, then institutional relationships that would otherwise be disastrous can promote positive industrial and social results.

But why do the Japanese trust each other? The conventional answer, of course, is that the country is blessed with a culture of harmony, collaboration, and mutual regard. If this is the case, however, then Japan has very little to offer students of economic development beyond the not-so-comforting lesson that if a society is born with the innate inclination to cooperate, then it can foster a remarkably agile economic base; if not, too bad. Flexible specialization studies would amount to little more than comparative cultural reductionism.

Flexible specialization avoids this result by arguing that trust is created, not inherited.⁴⁸ Japanese experiences, from the founding of small-firm banks and grading schemes, to defining the precise scope of action permitted the bureaucracy, emerged from decades of conflict and the resolution of bitterly fought battles. Ask Japanese executives

⁴⁸See the discussion in Sabel (1993b).

about their relationship with long-term partners, and more often than not they will display an astonishing degree of disgust and anger, belying the idea that they are groupish by nature and wet-wired for cooperation. Company and political leaders at all levels struggle to anticipate and then counter the potentially disadvantageous moves of their “partners” in various industrial and social undertakings. In Japan, like everywhere else, trust is a hard-earned commodity, the product of conflict and compromise, and not a lucky cultural artifact.

This approach, however, may solve the problem by substituting political for cultural reductionism, a gambit that promises more than it actually achieves. Arguing that Japan’s industrial governance system was produced by countless struggles that eventually made possible trusting relations between the bureaucracy and private sector interests, or suppliers and their customers, does at least suggest that others can achieve similar results. Yet, given the often razor-thin political calculations that ultimately shaped Japanese institutions, it is unclear that reference to political historical factors makes Japan any more relevant to comparative analysis than cultural explanations.

Consider, for example, the history of small- and medium-size producer banks in Japan.⁴⁹ A commitment to divert substantial amounts of capital to Japanese suppliers first emerged in the 1930s when financial shortages forced many Japanese subcontractors into usurious relations with the larger trading and marketing *zaibatsu*. When the reformist, neo-fascist “new bureaucrats” seized power—in part with the support of smaller firm owners who were suffering at the hands of the *zaibatsu*—they wanted to build a “modern” economy composed of giant companies, but were repulsed by the *zaibatsu*, whom they saw as hopelessly corrupted by western principles. They decided to reorganize the smaller suppliers into cartels which would then gradually congeal into new, large scale enterprises led by more traditional Japanese managers, largely from rural areas as yet unaffected by foreign influences. To effectuate this scheme, the Ministry of Commerce and Industry, MITI’s forerunner, sought authority and funds to divert procurement orders to rural areas, form commercial, manufacturing and agricultural producer associations (the precursors of the postwar *kumi-ai*) and charter non-*zaibatsu* banks, all in hopes of fostering indigenous firms which could then be merged to form a new, “pure” mass production economy.

⁴⁹This account is drawn from Friedman (1988), chs. 2-3. See also Nishiguchi (1989), 143-49 and Appendix 3.

Smaller and larger firms resisted some of these initiatives, but acceded to others. Both favored the formation of producer associations, the suppliers because they could begin to set standards for exported goods and collectively avoid price squeezing, the larger companies because they could increase the quality of the products they bought and sold without bearing much of the costs of monitoring their vendors. Efforts to provide smaller companies with capital subsidies were opposed by *zaibatsu*-affiliated private lenders, but aggressively supported by smaller firms and the bureaucracy. Most companies irrespective of size, however, did not want to give the bureaucracy authority to merge smaller firms into new *zaibatsu*; legislative and political battles throughout the wartime mobilization period were conclusively resolved against the MCI's attempt to gain such power. Economic "carrots," such as the provision of resources and support for developmental producer associations, found enough support for implementation, but policy "sticks," such as the authority to actually reorganize the economy, did not. The prewar bureaucracy ended up chartering several classes of small-firm regional banks and lending institutions, and helped spawn novel manufacturing network affiliations, but never realized its goal of building new, large scale enterprises.

During the occupation and its immediate aftermath, much the same pattern reasserted itself. Smaller firms were able to induce the bureaucracy—largely by virtue of weak Liberal Democratic Party support in major urban areas, which gave small-firm suburban and rural districts enormous political influence—to recharter prewar, specialized lending institutions and isolate *keiretsu*-affiliated banks in the cities. MITI repeatedly sought authority to force production rationalization and increase scale economies among the supply base as a *quid pro quo* for such initiatives, but such efforts were defeated in most industrial policy disputes of the postwar period. The state was limited to the provision of economic support, to monitoring the results, and to proposing strategies that, more often than not, were ignored, but it did not gain definitive power over Japanese industry. The suppliers obtained the capital they needed, and larger companies could devolve production tasks more rapidly and at less direct cost.

Even this brief, incomplete history shows that the institutions, conventions or protocols associated with Japanese high-trust relations—as in other nations—emerged from unique, non-duplicable historical and political conditions. The bureaucracy's interventions were curbed just to the point that it could provide resources to, and cajole and exhort, industrial actors but not determine outcomes. Smaller firms had access to capital, and could form *kumi-ai* to set production standards or jointly negotiate with larger firms, but

they did not enjoy such a protected status that they ceased to innovate and learn. The power of the *zaibatsu* and its descendants was muted, but hardly eliminated, and the core *keiretsu* affiliates formed much of the distribution and marketing network through which the Japanese firms sold their products world-wide. Everywhere, victory and stalemate combined to promote the web of autonomy and subordination that defines the Japanese industrial governance system.

If such precisely balanced political and economic results are, in fact, the prerequisites for Japanese success, then it is far from clear that flexible specialization offers much more than a history lesson for those seeking generalizable principles of economic development. Economic elites in troubled communities might find comfort in the observation that they at least have a chance of stumbling on the precise historical recipe for a productive industrial economy, but they might also simply hope that theirs' is the "right" culture. Explaining how situation-dependent histories of Japan (and other countries as well) relate to more general social and economic theories of economic development—beyond the notion that trust isn't necessarily culturally determined—remains unresolved in flexible specialization theory.

C. Power and Promise: Exploitation and Flexible Specialization

A final difficulty is accounting for evidence not only of the more "appealing" features of Japanese industrial governance—devolved authority, comparatively equalitarian wage distributions, flattened corporate hierarchies, universal, effective education, and widespread social responsibility—but also of less palatable, if not crass exploitation. Perhaps the most compelling element of flexible specialization theory—and also the part subject to particularly vitriolic criticism—is the suggestion that economic efficiency and justice can be simultaneously achieved. If market and technological uncertainty is the primary industrial challenge of our era, then unlike the "equality versus efficiency" tradeoffs latent in earlier periods, workers, firms and entire economies become more effective only as they foster individual skills, collaboration, trust. But if it turns out that Japanese success is inextricably linked to the systematic disenfranchisement of whole classes of the domestic population, or to the routine exploitation of foreign producers, flexible specialization theory loses much of its academic and practical promise.

It may be, for example, that the complex, minutely balanced Japanese industrial relationships could not have been formed if the country's economic elite faced anything like

the social demands in the United States. While it is true that Japanese bureaucrats, corporate leaders, or regional representatives fought bitterly over economic policy, at times to suicide or death, their disputes were firmly focused on improving the country's industrial capabilities. Sexual equality, gay rights, minority entitlements, economic redistribution and so forth did not, as a rule, intrude into Japanese industrial governance discussions. Entire social groups, especially the elderly, infirm, women and "untouchables" such as the *burakumin*, or descendants of Koreans seized during the war, meekly accepted discriminatory job tenure, wage, promotion, skill, capital access and other treatment that would be grounds for insurrection in most other countries. Consumers uncomplainingly paid enormous premiums for domestic and imported products that miraculously inflated to three and four times comparable prices anywhere else in the world when stocked on shelves in Japan.⁵⁰

To many Japanese—and foreign observers—excluding social issues which paralyze whole nations elsewhere from economic debates is a major Japanese industrial advantage. Even assertedly left-wing scholars can opine, without a hint of self-consciousness after yet another late night spent among their male colleagues, "The key to Japanese success is that women know their place; they stay home and don't complain so the men can work much harder than in America."⁵¹ If the Japanese economy is in fact predicated on such factors, offering essentially another version of the "freedom versus productivity" theme, then its utility for economic development research would be limited indeed.

Further, while the Japanese seem able to foster reciprocal agreements, constitutions, protocols, and trustful relations among themselves, they seem much less inclined to realize similar goals with others. Pursuing a mercantile trade and technology strategy, Japan systematically disadvantaged foreign producers to procure know-how and create market opportunities for domestic firms. Mutual forbearance from pursuing purely selfish objectives may characterize intercorporate practices among Japanese companies, but is much less true for interactions involving non-Japanese players.

⁵⁰For a comprehensive comparison of import price inflation in the U.S. and Japan, and compelling evidence of massive markups in Japanese markets, see Yager (1991).

⁵¹Field study, May 1992 (uttered late one night in front of a particularly expensive *nomiya*).

The links between production insiders and outsiders is a generic problem for flexible specialization theory. If enforcing wage, price, quality and learning standards is necessary for productive communities, then some kind of protection from external disruptions that might break the rules and provoke rapacious behavior seems inescapable. Producers in Kakamigahara, one of Japan's premier aerospace centers, for example, would have been unlikely to fashion work allocation agreements with larger aerospace companies if manufacturers in Shizuoka, let alone Shanghai, could have freely offered comparable goods at (however temporarily) lower prices. To obtain badly needed know-how, the region's firms collectively insisted on technology license offsets in exchange for commercial and military aircraft orders from U.S. manufacturers, generating technology transfers that enabled them to displace more capable foreign vendors from world markets.⁵² In this case, industrial arrangements central to the Japanese system seem dependent on limiting the range of potential competitors and forcing outsiders to transfer their knowledge on less than reciprocal terms. The question is whether the regional and sectoral relationships associated with flexible specialization depend on such exploitation, or whether they can proliferate equitably in the global economy.

Some initial responses are possible. Japanese political and industrial debates are hardly devoid of social concerns, and the country's manufacturing enterprises are subject to extensive demands for housing, medical assistance, education, entertainment and, depending on the region, some of the toughest environmental requirements in the world. It is also arguable that the tendency to exclude and disadvantage specific groups is not an advantage, but rather adversely affects Japan. At one time, the country's producers could collaborate and continuously improve their operations to a greater extent than elsewhere; today, companies in other countries are catching up, in no small measure because they are able to interact with and learn from Japanese supply networks, while the Japanese generally refuse to collaborate on a reciprocal basis with others. Evidence is also incomplete about how, and to what extent, Japanese firms equitably internationalize their domestic production practices; despite evidence of less than happy outcomes, there are also examples of firms that have greatly enriched their business through interaction with the Japanese.⁵³

⁵²See Friedman and Samuels (1993).

⁵³For evidence that Japanese firms tend to foster non-reciprocal industrial relations strikingly distinct from other nations' multinationals, see Encarnation (1986); Kreinin (1988). Yet, the developer of airbag technology and products in America will insist that Japanese firms were his most interesting, playful, valuable collaborators; a survey of Sematech participants revealed that virtually all the U.S. companies involved preferred to

The regional and intercorporate bargains facilitating flexible specialization may, therefore, diffuse inclusively, even when Japan is involved. Substantial work remains to be done, however, in such areas as comparing and evaluating strategies of domestic and international production network diffusion emanating from a variety of countries before more definitive conclusions can be made.

III. Pursuing paradise: implications for developing economies.

As industrial elites in America, Latin America, or Southeast Asia struggle with creating just, yet productive economic systems, the Japanese “model” continues to loom large in their thinking. But if our understanding of the country’s industrial governance practices is incomplete, then development strategies based on Japan can be misleading at best, and at worst work against intended goals. Two problems in particular afflict industrial strategy thinking:

1. *Defining objectives: building authoritarian versus continuously adaptive solutions.* At present, leaders of troubled regions everywhere follow one of several strategies designed to put their economies on the “right” track. Some pursue “business climate” improvement schemes, such as deflationary wage or capital cost policies, or invest in infrastructure, in the hopes that “if they build it”—a cheap labor market, or a spanking-new industrial park—the world will come. Others gamble and subsidize the “industries of the future,” or offer substantial business relocation inducements to create local “growth poles” around “key” sectors. More subtle efforts involve creating one or more of the apparently crucial elements of the Japanese and other successful economic systems—proposals for technical centers modelled on the *kohsetsushi* or reinventing antitrust laws to permit export and R&D teaming “just like” the *keiretsu* in the U.S. are good examples—to fix the domestic economy much as one would replace defective parts in a laboring engine.⁵⁴

buy from, or sell to, Japanese firms. Interviews, former president and CEO of Technar, Inc. (now TRW-Technar); current CEO and director of Sematech, Spring 1993.

⁵⁴A survey and critique of such strategies is provided in Sabel (1988), 40-45.

Japanese experiences, however, offer very little support that such comparatively inflexible, one-shot development strategies are likely to be successful. The country's industrial governance institutions, much like Japanese factories themselves, do not make definitive, singular economic interventions in the hope of pushing the economy on a self-evidently "right" trajectory. Rather, the relevant participants constantly share ideas and information about possible industrial initiatives, and then repeatedly justify and modify as necessary the choices that they make. What counts more in Japan is not the specific details of particular government schemes or corporate market plans, but rather the sustained capacity to discuss, monitor and evaluate competing ideas about the economy without foreclosing future adaptation and innovation as necessary.

People faced with chronic economic distress, however, often find the notion of continuous discussions among economic players to define, and adapt, private and public policies in response to constant market uncertainty to be far too vague, if not ideologically threatening to the nostrums of both the right and left. Free marketeers think identifying and justifying industrial goals is creeping socialism; the left sees such efforts as a fancy form of trickle-down deception.⁵⁵ Reflective business or political leaders will acknowledge that it is folly to fund training, subsidy or business support programs without first having some idea of what the affected firms and industries actually need and are likely to accomplish, but recoil from investing the time and resources in actually learning about the economies they hope to influence, let alone initiate joint discussions about regional development with the entities on which such efforts depend.

All too often, it is only after communities, regions or nations have suffered from years of ineffective strategies that their economic elites are finally willing to consider initiatives that actually resonate with Japanese practices. In the late 1980s, for example, economic development authorities in Pennsylvania abandoned the usual arsenal of tax breaks, environmental rollbacks, semi-public venture fund subsidies and other 1970s' era policies in favor of inducing indigenous producers to respond collectively to public queries about how to build a high-wage, high-skill, flexible economy. Public support was then repackaged into programs specifically tailored in response to producer concerns, and dedicated institutions—now called Industrial Resource Centers—were established to keep

⁵⁵At post-riot hearings on economic development in Los Angeles, for example, precisely these criticisms were levied against proposals modelled on the Pennsylvania Industrial Resource Centers.

such public/private policy and industrial strategy discussions alive and to monitor the results.⁵⁶ A clear imperative for Japanese studies is to stimulate equally novel development thinking on a more widespread basis by, among other means, suggesting that the continuous, collaborative search for productive economic solutions is a far more crucial policy goal than implementing a set of contextless development efforts loosely modelled on “successful” national experiences (or which simply reflects prevailing ideology).

2. Facilitating cooperation without self-dealing; continuous improvement without low-skill and low-wage blockages. Even when economic elites overcome their aversion to trying out an interlocutor or monitoring development strategy, they must still ensure that their policy innovations do not promote either stagnant self-dealing, or atomistic fragmentation. Japan sends mixed signals in this regard. The country did build industrial governance institutions and protocols that more or less achieved this balance, evidence which (despite intimations to the contrary in Section II.B above) can serve as a powerful inspiration for others (see Section IV, below). At the same time, the precise form of Japan’s solutions resulted from unique circumstances that makes any ready translation of its experiences all but impossible. Perhaps a bit cruelly, Japan both beckons and frustrates those seeking practical lessons for economic development.

Even the most creative strategists are therefore forced to blindly innovate industrial initiatives that can foster desired economic outcomes, an effort fraught with risk. Attempts to foster collaborative industrial arrangements, or wage, price and quality standards in industries such as textiles that are riddled with mistrust, not infrequently lead to self-interested lobbying associations seeking narrow political advantages. Consortia for R&D collaboration or new product designs can degenerate into organizations that merely feed off of public funds for the benefit of companies that have no capacity, or intention, of learning. A country or region may induce foreign producers to set up a new plant but then face the problem of tempering positive support with explicit commitments to transfer technologies, team with indigenous producers, and not subsequently extort additional wage, regulatory or technical concessions; indigenous elites constantly struggle to apprehend the point where

⁵⁶Interview with Robert Coy, formerly the head of the Pennsylvania MAIN and IRC programs, and now the Delaware Secretary of Commerce, May 1993. Similar, although less self-conscious efforts also emerged in hard-hit states like Michigan and Ohio. For a brief summary (largely of Michigan), see Case (1992), 229-31.

demands for reciprocity can erode trust—if not scuttle the entire deal, or where refraining from action might stimulate opportunistic behavior.

Given the constant potential for subversion, the only solution seems to be, as the Japanese discovered (if only by accident), to create development programs that are self-aware of such problems and which regularly monitor whether progress or regress is being achieved. In practice, this means that public and private initiatives have to grope towards general, imperfectly defined goals and rely on constant discussions, reassessments, and debate among the participants to to define and implement the details. If there is a single lesson that Japan teaches, it is that the ability to both monitor and reappraise industrial choices is essential to avoid blockages and self-dealing. Although the country can offer very little in the way of specific prescriptions for putting in place such a development agenda, it can serve as a catalyst for organizing unique solutions in other countries.

IV. Capturing the Phantom: A Concluding Tale

An implicit assumption behind development economic studies is that by making objective, “scientific” appraisals of successful cases like Japan, it is possible to counsel economic elites in less fortunate settings. Yet, as suggested above, the real value of focusing on Japan may be less the “discovery” of discrete economic development principles—most, if not all of which will likely be time and context bound—then to spark the very process of thinking about industrial alternatives required to build an agile economy. Progressive strategies may be stimulated less by a terse set of “must-do” bullet points than by challenging economic elites to imagine how they would achieve information exchanges and strategic debates in their own contexts.

To those who believe—and there are many—that such an agenda is hopelessly ineffectual or romantic, consider the following case in which presenting a view of Japan derived from flexible specialization theory helped lead to surprising, if not remarkable economic development results in a most unlikely setting. The location was Los Angeles, a region now struggling to rekindle industrial activity after decades of nearly unconscious growth; the public agency was the Los Angeles County Metropolitan Transportation Authority (MTA), one of the largest public rail and bus system operators in the world.⁵⁷

⁵⁷The following account is drawn from the author’s participation as a consultant and participant in the MTA’s formulation and evaluation of the P-2000 and P-2030 rail car and technology procurements from March, 1992 to July, 1993.

Just over eighteen months ago, the MTA completed a routine contract award to a group of Japanese producers represented by Sumitomo International, a trading company, to make over 40 light rail vehicles for Los Angeles' new Green Line. After the negative fallout from former President George Bush's disastrous trip to Japan in January 1992, however, and as an unprecedented postwar recession hit the region, Los Angeles transit officials, amid rancorous nationalistic debate, abruptly rescinded the contract in hopes of stimulating "local economic development" and "defense conversion."

Although charged with an economic development mission, the MTA had virtually no expertise with using public procurement to stimulate regional industries while meeting its operational rail car needs. Immediately following the Sumitomo incident, which made international headlines, its staff began to sort through several issues. Despite the "buy-America" campaign of one particularly aggressive U.S. company, the MTA recognized that if its new procurement was overly chauvinistic and blindly favored American firms—many of which would resubcontract with overseas producers—it would repulse foreign bidders and deprive Los Angeles firms and consumers of access to premier rail car technologies and products. Insisting on specific local employment targets—a traditional rail industry "development" gambit—was also unappealing because the result was usually a factory of unskilled assembly workers who lost their jobs as soon as the last car was delivered. In any case, federal transportation fund guidelines precluded overt local content specifications.

To address such concerns, the MTA solicited a variety of recommendations, including those explicitly based on flexible specialization interpretations of Japan. In that regard, it was suggested that the Authority should engage global rail car builders, local suppliers, defense firms, and other economic development targets in collective appraisals of whether and to what extent a local transportation industry could be fostered, and then weight its procurement criteria towards the teams that provided the most detailed, beneficial proposals in making contract awards. The MTA staff was also extensively briefed with specific examples of Japanese development-through-monitoring strategies in areas such as Gunma and Shizuoka, and similar American efforts in Pennsylvania.

Ultimately, the Authority decided to try and implement a novel strategy based on such cases rather than duplicate efforts that it felt had failed in the past. By the late Summer, 1992, a new Request for Proposal was released composed of the following key elements:

- Rather than specify fixed local employment or other pre-determined economic targets, 15% of the procurement contract was to be scored by ranking the bidders' competitive "domestic business development" proposals—the commitments they were willing to make regarding technology transfers, domestic procurement, product co-development, defense technology applications and skilled employment. Only the most general goals were specified in the RFP—creating high-value added production opportunities, for example—to stimulate discussions between the MTA and potential bidders, and between bidders and indigenous producers, about feasible development options for the region.

- Another 15% of the contract was dedicated to an Advanced Transportation Products Development Program (ATPDP). Each bidder was required to team with a domestic high-technology firm—defense or aerospace companies were especially encouraged—and develop three unique products for use on two prototype high-technology rail cars. Rail car bidders, high technology firms, and the participating suppliers also had to collectively offer an analysis of the technical, employment and long-term market opportunities each product would generate for the region and the U.S., and explain how their products would be integrated into the global transportation industry.

- To encourage the use of domestic suppliers in contract bids, and the rail car industry more generally, the MTA commissioned the first-ever directory of regional companies that could meet specific rail car product and production needs, and held workshops for local firms and global carbuilders to discuss mutual marketing techniques, production standards and rail car specifications. As a result, several regional firms that had never before serviced the industry were included as key suppliers and technology transfer recipients in every contract bid the MTA received. Further, many foreign firms began to place orders for component manufacturing and design needs with Los Angeles companies irrespective of the Green Line award.

Despite its lack of experience, and the generally lackluster history of using American public transit procurements to create long-term economic opportunities, the MTA's industrial development gambit was a remarkable success. Four teams comprised of major foreign and domestic carbuilders, defense firms and regional suppliers—headed by Siemens-Duewag/TRW/AAI, Bombardier/Northrop, Sumitomo/Rockwell and Morrison-Knudsen/Hughes/Lockheed—ultimately responded to the RFP. All of the proposals

contained multimillion-dollar commitments of technology, procurement and other substantial economic benefits for Los Angeles and the U.S. The winning bidder, Siemens-Duewag, offered to transfer technology sufficient for an American firm to establish a rail car body plant in the greater Los Angeles area, and to purchase components from the factory for use throughout the world. When operational, the plant will be the only such facility in America. In addition, through procurement contracts, licenses and additional technical assistance, over 90% of the nearly \$200 million value of the components in the Siemens vehicles will be made in America.

The MTA's attempt to explicitly fashion an economic development strategy on the notion of the Japanese interlocutor or protocol economy is instructive for several reasons. The Authority avoided protectionism, and did not alienate the best producers in the world, but rather encouraged competition among foreign and domestic producers alike. By inducing constant proposal refinements in contract negotiations, the MTA enlisted the world's finest rail car and technology companies to define for Los Angeles an appropriate, sustainable transportation industry development strategy. In this effort, the MTA functioned much like the Japanese state, accessing world-class know-how, providing incentives for its indigenization, and stimulating repeated discussions about general, but crucial industrial objectives leading to long-term commitments of technical, financial and manufacturing resources ultimately defined by industrial actors themselves.

In addition, the Authority began to learn how to request information from public and private interests to facilitate intelligent bargaining about industrial objectives. At the height of the contract negotiations, its staff built the first comprehensive network of California transit agencies to collectively identify joint high-tech product requirements, and to sift through often duplicative private sector proposals and isolate the most promising options. Industry, finance and other experts were solicited to help shape bargaining strategies with rail car and other bidders, and, to the extent not precluded by procurement guidelines, the cross-fertilization of development ideas was encouraged so that bidders would constantly reevaluate their strategies. Perhaps most crucially, the MTA organized and then brought groups of suppliers and smaller firms into the negotiating and bidding process, validating for a skeptical global rail car industry that manufacturing requirements could be met with indigenous firms, and enabling groups of suppliers to negotiate, at least in part, on a collective, regional basis, for a position on the contract teams and in global markets.

Finally, the MTA staff became keenly aware that the success of its procurement will depend on continued monitoring of the industrial results. Problems with new industry suppliers must be overcome before they lead to broken relationships; the new car body plant has to be nurtured into a world center of manufacturing and design expertise; the ATPDP products must be compellingly installed on sophisticated prototypes and then marketed to other agencies in the U.S. and abroad. Informed by a relatively simple picture of how Japan and other regions stimulate flexible, productive economies, Los Angeles decision makers turned a near-disastrous incident into a substantial, if still-incomplete, industrial development triumph.

Beyond the concerns of academic scholarship, then, flexible specialization accounts of Japan—and the rest of the world—can lead to novel policy initiatives that explicitly recognize the necessity of constant learning to define and realize economic objectives. Of such humble beginnings, perhaps, are productive, self-adjusting, equitable economies made. Flexible specialization theory may never offer a completely satisfactory account of Japanese industrial governance practices. But if it can help committed elites search for a formula that can sustain the collective discussion and industrial action necessary for a prosperous economy, then it will have achieved a far more significant end.

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