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Making and Remaking “Good Government” in Brazil: Subnational Industrial Policy in Minas Gerais

Alfred P. Montero

ABSTRACT

Comparative examples of “good government” at the subnational level may underanalyze the “public goods” problem facing politicians. Delegating authority and resources to policymaking agencies is possible when political conflict is low. The benefits can be maintained only if public agencies establish ties of “horizontal embeddedness” with industrial clients. This case study of innovative industrial policymaking in Minas Gerais, which is compared with one from Rio de Janeiro, finds that horizontal, interagency ties were critical to policy success. The contrast leads to an examination of the *minetro* system’s efficacy in promoting externalities, attracting foreign investment, and planning infrastructure in the state’s automotive industry.

Subnational governments in Latin America have engineered innovative responses to development problems, even in the face of “stamped globalized” of financial markets and the erosion of national industrial policies because of fiscal crises and inefficient bureaucracies. Perhaps the most compelling case study is Judith Tendler’s 1997 work on the poor northern Brazilian state of Ceará. Challenging the notion that all subnational politics is clientelistic in Brazil, Tendler compares efficient state and municipal programs in preventive health, public procurement, and agricultural productivity. In addition to the role of favorable publicity and the meritocratic distribution of rewards within the state bureaucracy, Tendler emphasizes how public sector officers and private clients maintained a capacity to listen to each other and adjust goals through the exchange of information.

Such demonstrated reciprocity, Tendler claims, explains the effectiveness of Ceará’s innovative economic and social policies. These “ties” established mutual monitoring networks that reinforced trust between the public sector and citizen clients. Multitask work (“job enlargement”) and a flexible, problem-solving approach to service delivery increased the frequency of contact between public workers and social groups, expanding the system of mutual surveillance that kept both public and private interests from “shirking” their responsibilities.

Comparativists and Tendler herself claim that Ceará's experience is replicable in other parts of Brazil and other countries. By transposing the model of close, consultative ties between public agencies and private clients, any local economy may generate the high levels of social trust and reciprocity that explain Ceará's success (see esp. Evans 1997). If correct, this work holds out the promise of explaining the role of the state in developing "social capital," Robert Putnam's oft-cited (1993) concept for developmentally effective forms of civic engagement. Rather than being endowed, "good government" can be constructed by state agents acting in collaboration with consumers, workers, and firms.

There is, however, a "public goods" logic to the advent of "good government" that raises the question, why would politicians support delegating resources to technocratic public agencies and citizen clients in lieu of using these resources for patronage? The distributive conflicts surrounding industrial policy in particular are well known. Each intervention by the public sector in private markets creates incentives for business to influence economic policy to satisfy particularistic interests (Rueschemeyer and Evans 1985, 69). Self-interested politicians will risk fiscal crisis to allocate funding for special interests or favors ("rents" or "pork") to these interests in exchange for support. If all politicians follow this logic, they risk producing a "tragedy of the commons" in which finite fiscal resources are depleted, leaving all worse off. Barbara Geddes (1994) calls this the "politician's dilemma." In the short term, a politically optimal strategy may require politicians to manipulate state resources and make patronage appointments to the bureaucracy, at the cost of the long-term collective efficiencies produced by "good government." Garrett and Lange put it simply: "Politicians cannot afford to ask what is good for society as a whole in the long run, lest they lose power in the interim" (1996, 50).

The problems posed by the "politician's dilemma" continue even when politicians embrace the goal of generating collective economic efficiencies. Once they delegate their authority to bureaucratic agencies, what guarantees that bureaucrats will not shirk their responsibilities? As in all principal-agent relations, information asymmetries between the center and the subunits will create opportunities for the latter to pursue their own interests at the expense of the larger organization's efficiency (Miller 1992, 86–91; Moe 1984). As with the politician's dilemma, episodes of "bureaucratic dysfunction" constitute the "political failures" that often have doomed even the best-conceived industrial policies (Krugman 1983).

Neither the close "vertical" ties between agencies and clients advocated by Tendler nor the countervailing view of "state autonomy" recommended by other scholars is sufficient to explain the political origins or maintenance of the "good government" public good. Tendler notes how

reformist governors, specifically Tasso Jereissati (1987–91 and 1995–present) and Ciro Gomes (1991–94), blocked parochial encroachments from political opponents by strengthening meritocracy in Ceará’s civil service.

Tendler, however, does not explain the motivations of these seemingly “good governors.” (For more on this line of critique of Tendler’s work, see Resende-Santos 2001, 231.) With no guarantee that their successors will be equally farsighted, the state bureaucracy remains vulnerable to clientelistic intervention. Close vertical ties may even reinforce the risks of rent seeking in the future by recreating dozens of concentrated systems of discretionary power.

More conventional arguments favoring the autonomy of “technocratic” public agencies also fall short of providing a sufficient explanation. According to these arguments, professionally staffed, corporately coherent, and “autonomous” bureaucratic agencies guarantee that economic policy will be designed and implemented in an economically rational manner.¹ Autonomy alone, however, is insufficient to provide state agencies with the information and political resources needed to produce the collaborative policies Tendler describes. Bureaucrats, moreover, may sacrifice economic efficiency in defense of their career interests, particularly when they are influenced by politicians and societal actors who have been known to breach the wall of bureaucratic autonomy and break down these “pockets of efficiency.” Peter Evans (1995) argues that a mixture of autonomy and “embeddedness,” a term denoting encompassing relations between state agencies and firms, can produce economic efficiency, but he is unclear about how the proper balance of the two emerges in distinct political settings. The creation of one can sap the other, especially when self-interested actors are involved in the game of institution building.

The available analytical approaches to the study of “good government” in subnational settings either “oversocialize” by discounting the role of state interests (politicians and bureaucrats) or “undersocialize” by ignoring the dangers and insufficiencies of autonomous state intervention (for the distinction, see Granovetter 1985). The following study attempts to bridge this gap by presenting a generalizable argument that includes two explanatory variables: the political interests of incumbents, and the degree to which relationships among public agencies are decentralized and horizontal or centralized under the direct control of political executives. That argument posits the following hypotheses:

- The “good government” public good can be created only if political executives face relatively low political costs in delegating authority and resources to public agencies.
- The “good government” public good can be maintained only if public agencies establish continuous horizontal contacts among themselves in addition to vertical ties with firm clients.

The case of Minas Gerais demonstrates how two factors—low levels of conflict among the political class and strong political interests in breaking the economy's dependency on São Paulo's larger and more dynamic industrial markets to the south—motivated the state's governors to delegate authority and resources to an array of industrial policy agencies during the 1960s and 1970s. These public agencies established close relations with each other and with numerous large investors, including the Italian multinational automaker Fiat, which formed the core of the state's most important industrial sector. Continuous contacts and collaborative projects established a tight-knit horizontal network across the agencies. These persistent horizontal ties linked the state development bank, the entrepreneurial information agencies, and the state's utility companies, creating a constituency within the bureaucracy that helped preserve the industrial policy system during the 1980s, when the developmentalist model eroded and clientelistic governors threatened to confiscate agency resources.

Continued interagency collaboration also produced innovative responses to the crisis of developmentalism. By the end of the decade, the agencies were able to reorient Minas's industrial policy along more market-oriented lines. Horizontal ties created confidence among firms and agencies that, despite changes in the economic model and the threat of political intervention, cooperation would persist. These conditions produced industrial policies that greatly enhanced the productivity of Fiat and its suppliers during the 1990s.

Comparisons to other Brazilian states, such as Rio de Janeiro, suggest that when incumbents have stronger incentives to cultivate clientelistic support, they are unlikely to delegate authority to public development agencies. Industrial policy mechanisms can be more easily manipulated in these cases because politicians will centralize their control over development agencies and impede the evolution of horizontal ties. The contrast between Rio and Minas leads to an examination of the efficacy of the *mineiro* system in promoting externalities, attracting foreign investment, and planning infrastructure in the state's automotive industry.

THE CONDITIONS FOR SUBNATIONAL INTERVENTION

This study explains the political origins of subnational industrial policy based on close, consultative ties between public agencies and private clients and the maintenance of these networks even in the face of significant political change. The first dependent variable is explained by the structure of political incentives constraining the choice of incumbents to delegate or centralize authority and resources over industrial policy. When these incentive structures limit the level of elite conflict, the political opportunity costs of delegating authority and resources to technocrats are relatively low.

These structures can take several forms, including parliamentary majorities in the subnational legislature, supportive alliances with business and labor organizations, or a long history of elite accommodation, even across otherwise contending political parties.² When these incentive structures are absent or erode, a higher level of elite conflict will cause political leaders to feel more vulnerable, prompting them to discount the future. Under these conditions, incumbents will concentrate their control over economic institutions to reduce the costs of manipulating these resources to build a clientelistic constituency of support.

Absent a compelling political incentive to centralize, uncertainty caused by persistent economic problems will induce delegation to bureaucratic leaders with the information required to address these concerns (Miller 1992, 78–82). Delegation provides its own political returns; regional leaders can tell their constituents that they are “doing something” about economic problems and can justify the need for additional resources and authority from central state managers. Conversely, if things go wrong, politicians can blame the agencies to which they delegated their authority, covering their own responsibility for policy failure under a cloak of ambiguity (Alesina and Cukierman 1990, 846). Doing nothing may become politically costly in the face of eroding economic performance and competition with rival subnational governments over the same pool of fiscal resources.

Maintaining the decentralized development policy network of agencies and their clients requires the forging of common planning and implementation mechanisms across public agencies, a variable we may call horizontal embeddedness to differentiate it from the vertical ties favored by earlier studies of “good government” and embeddedness. Horizontal embeddedness produces alternative sources of political support by broadening the constituency of public agents and private clients involved in industrial policy. Such expansion reinforces monitoring networks. Horizontal ties produce a larger number of potential “alarm bells” that may sound if policy goals are not being met (see McCubbins and Schwartz 1984). At this stage, political technocrats, not politicians, emerge as the key organizers and managers of constituency support for the development mission after supportive politicians’ mandates have expired.

Horizontal embeddedness helps to maintain industrial policies over time by enhancing public agencies’ ability to engineer effective intervention strategies. By building a larger constituency for industrial policy, horizontal embeddedness provides development agencies with access to a broader array of technical resources than they would have in strictly vertical public-private relationships.

Horizontally embedded agencies are also apt to respond more efficiently to shifting economic conditions. Horizontal ties reinforce the coherence of the public bureaucracy by creating avenues of communi-

cation and coordination that minimize interagency conflicts and the general threat of bureaucratic fragmentation, factors that often hinder agencies' ability to react efficiently to changing economic pressures (for more on this problem, see Schneider 1993, 343–44).

As development models erode and economic uncertainty grows, horizontal ties facilitate the composition of policy responses by reducing the costs of deliberation among the subnational political technocracy. The feeling that each is part of a larger network reduces the fear among individual agencies that any change in the development mission will mean their dissolution. Knowing that their technocrats can and do easily circulate among related industrial policy agencies, even if dissolution of an agency is an option, these bureaucrats know they have a future in the wider network. While this does not guarantee that new solutions will be found, horizontal ties make innovation more likely by breaking down the incentives to produce orthodox devotion to the existing development mission.³ These ties produce, *ex ante*, a filter against particularism and a source of innovation.

In Minas Gerais, industrial policy agencies formed a network of horizontal ties that proved crucial in promoting new investment during the developmentalist period. During the 1980s, these ties protected the agencies from becoming divided by clientelism. Horizontal embeddedness also facilitated the agencies' restructuring of the state's industrial policy regime in ways that recycled developmentalist mechanisms and put them to work for a new market-oriented development mission. In Rio, by contrast, the political class was highly conflictual, depending on the rise and fall of numerous populists. These politicians centralized their control over industrial policy agencies, using them to cultivate clientelistic networks of support. As a result, horizontal embeddedness did not function, and public agencies could offer no credible incentives to change the path of the state's development.

INDUSTRIAL POLICY IN MINAS GERAIS

Minas Gerais's proximity to Brazil's industrial hearth in São Paulo was both a blessing and a challenge. Expanding industrial investment and urban congestion, with its associated increasing factor costs, generated incentives, by the 1970s, for the escape of *paulista* industries to the interior of the state and to neighboring states. Political leaders with foresight might have taken advantage of these conditions to accelerate the industrial development of their states and cities, yet the pattern of industrial deconcentration in São Paulo was uneven, favoring the *paulista* interior more than neighboring states.⁴

Those industries that did leave São Paulo required developed infrastructure and qualified labor. These conditions might well have

avored a comparatively more industrialized Rio de Janeiro over Minas Gerais, but it was Minas that seemed to take more advantage of the situation. Despite a relatively weaker industrial base, Minas's political leadership during the 1960s and 1970s built an array of public agencies that quickly developed a solid record of success in economic planning. Despite uneven political support during the 1980s, the *mineiro* agencies survived to bootstrap resources and reorganize the state's industrial policies in new, successful directions during the early to mid-1990s.

Mineiro political leadership is divided into a traditional elite descended from the oligarchical period and a political technocratic segment with ties to national public firms and the state's industrial policy agencies. Significant conflicts within the class of traditional elites were infrequent in Minas's politics (Horta 1986; Wirth 1977). The political oligarchy ruled the state government with few challenges from subaltern or rival classes such as labor or business (Hagopian 1996). While these traditional elites governed Minas, economic policy remained in the hands of the political technocracy, whose elites rarely came into conflict with the oligarchy (Starling 1986; C. Diniz 1981, 1986; Gama de Andrade 1980).

The dominance of the state-led development framework went relatively unchallenged by either *mineiro* business or labor groups. The state's business class was historically weak, having deployed most of its resources in agriculture and traditional industries that were dependent on public investments in mining and steel. This reinforced the view of Minas's politicians and state technocrats that "local entrepreneurs had, by their inability to carry out a project for industrialization, in effect forfeited their claim to lead this process" (Hagopian 1996, 87).

Similar conditions made *mineiro* labor politically weak. Minas's labor unions lacked the strong immigrant experience that propelled the emergence of an organized worker movement in São Paulo. Minas remained a largely rural and oligarchical society for much of the twentieth century. As a result, *mineiro* labor relations continued forms of oppression common to the oligarchical system of patron-client relations (Dulci 1996).⁵ Repressive labor relations weakened labor unions in Minas, even in sectors such as metallurgy, where Brazilian workers made tremendous strides in São Paulo and other states.

Given a tradition of elite accommodation both within the oligarchy and between it and the political technocracy, and lacking any significant political challenges to state government intervention in the local economy by business and labor, *mineiro* politicians faced few obstacles when they delegated authority and resources to an array of new economic agencies. Political technocrats evaluated Minas's economy and launched initiatives based on a developmentalist model that did not differ much from the principles of state planning under Brazilian presi-

dents such as Juscelino Kubitschek (1956–61) and the military governments that ruled Brazil from 1964 to 1985.

Minas Gerais's governors, beginning with Kubitschek himself in the late 1940s and continuing with the military governments, promoted development through official planning by national and subnational public firms and agencies. Kubitschek initiated the model with a Recuperation Plan in 1947 that defined areas of Minas's economy to be targeted with public programs for industrial development. Kubitschek created a technocracy modeled after professional state agencies at the national level. His 1947 plan included massive public investments in electrification that paved the way for the creation in 1952 of the Electrical Centers of Minas Gerais (CEMIG), the state electric company. CEMIG acted as a development agency for the state government, providing electricity to new industrial investments and promoting Minas Gerais's private sector.

To make a big push for Minas's industrialization, the *mineiro* political oligarchy employed its close ties with Kubitschek and the military governments to place major public firms in the state (Schneider 1991, chap. 6; Dulci 1992). As a result of *mineiro* bargaining, the public sector remained a dominant fixture in Minas's early industrial development. By 1976, 57 percent of the largest 185 companies operating in Minas Gerais were public; 23 percent of the remaining companies represented private national investment; and 20 percent were foreign direct investors (C. Diniz 1981, 202; 1986, 337).

During the military period, the state government created an array of development agencies to design Minas's own industrial policies. In 1962 the state created the Development Bank of Minas Gerais (BDMG) as a credit agency to provide finance to small- and medium-sized firms ignored by the national development banks. The BDMG's political technocrats expanded the bank's developmentalist mission, creating in 1967 the Institute of Industrial Development (INDI) with the technical and financial support of CEMIG and the consulting experience of the Arthur D. Little Company (ADL).⁶ The new agency was charged with conducting studies and providing consulting services to potential investors and clients for both BDMG and CEMIG (Brito 1984, 247–48).

In 1972, the state government created the Company of Industrial Districts (CDI). The CDI developed industrial districts with the logistical and political support of municipal government and supplied these projects with basic infrastructure. The João Pinheiro Foundation (FJP), named for a governor of the state at the turn of the twentieth century, operated as an official research organization. FJP supplied state planners with the statistics and sectoral studies they needed to consolidate investment projects. In addition, the FJP and the Planning Center (CEDEPLAR) of the Economics Department of the Federal University of Minas Gerais

played prominent roles in supplying technocrats to the state government's planning apparatus.

From their creation, the agencies were designed to work together on common projects. This was partly out of joint ownership and the circulation of technocrats among the agencies. Yet these horizontal ties also owed much to larger political conditions. The creation of a specialized and connected set of development agencies (INDI-BDMG-CEMIG-CDI-FJP) was a linchpin in the arguments of *mineiro* political leaders as they sought to compete with other Brazilian states for national government resources (Brito 1984). State leaders made reference to the well-developed structure of *mineiro* industrial policy to help justify increased fiscal transfers and other resources for the state government's attempt to reverse Minas's industrial trajectory. Pragmatic concerns also contributed: once the agencies were created, Minas's leadership saw that these linkages might facilitate resource bootstrapping and mechanisms to reduce the costs of cross-agency communication on joint projects (C. Diniz 1981, 142–47).

Logistical exigencies also played a role. CEMIG and BDMG were already dedicated to utility infrastructure and finance, respectively. Following the advice of ADL and the view of the CEMIG and BDMG political technocrats, political leaders agreed that the state's industrial projects would require a coordinating technical information agency (INDI) and a second firm to oversee other infrastructural needs (CDI). The complexity of development projects required all the agencies to work together and remain as free as possible of political interference (C. Diniz 1981). That freedom was guaranteed during the military period by a sweeping reform of the state Secretariat of Economy that allowed the agencies to work as autonomous organizations within the state apparatus (Brito 1984, 241).

Once in operation, the agencies pursued the expansion of the state's capital goods and consumer durables sector. INDI employed its contacts with ADL to attract firms such as Fiat (Italian, autos), Krupp (German, machines), White Martins (U.S., chemicals), and a host of other industries, many directly linked to the steel and mining economies. Fiscal incentives and government ownership were used to attract investors from São Paulo and abroad. As Clélio Diniz argues, the BDMG-INDI system transformed Minas Gerais into a "paradise of multinationals" (1981, 194). Almost one-fourth of all FDI between 1971 and 1977 in Brazil went to Minas (Brant 1983, 322). Total new investments in the state increased 20 percent, and the industrial growth rate improved 17 percent between 1970 and 1977, superior to the Brazilian average during the same period. More than US\$7 billion in new investment and more than two hundred thousand new industrial jobs were created during the decade (see *Estado de Minas* 1988).⁷

The most impressive gains were in the capital goods sector, which expanded from 7.3 percent of Minas's economy in 1970 to 19.8 percent in 1980. By 1980, Minas was producing 20 percent of Brazil's capital goods, whereas in 1970 it produced less than 8 percent (C. Diniz 1981, 214; BDMG 1989a, 33). Mechanical industries, in particular, grew from 2.4 percent of Minas's industrial production in 1968 to 8.7 percent by 1974 (Duarte Filho 1986, 36). The auto sector emerged *de novo* in Minas during the 1970s with the startup of the Fiat automaking plant in the city of Betim near Belo Horizonte.

Expectations for the industrialization of Minas Gerais began to reverse during the 1980s because of the fiscal and larger economic crisis in Brazil. The decline of public sector production, part of the more general contraction of the internal market, forced many of the capital goods producers that had invested in Minas during the 1970s to downsize or close. The share of Minas's industrial product composed by capital goods and consumer durables fell from almost 20 percent in 1980 to 17.7 percent in 1986 (BDMG 1989b, 20). Minas's GDP grew 157 percent during the 1970s but only 17 percent between 1981 and 1989 (BDMG 1989a, 28).

With the government's attention focused on the presidential candidacy of the governor, Tancredo Neves, in 1984, the *mineiro* development mission became secondary (Dulci 1988). Neves's official plans for Minas Gerais only minimally spelled out the development agencies' roles, with vague and inconsistent prescriptions (see Government of Minas Gerais 1982). The advent of Governor Newton Cardoso in 1986 created more direct political threats to the development agencies. Coming from Bahia and depending on a largely rural support base, Cardoso was a relative outsider in *mineiro* politics. He had little consideration for the political-technocrats of the INDI, BDMG, and CEMIG (Brito 1988, 283). Cardoso appointed political supporters rather than political technocrats to head the development organizations. Presenting himself as a "man of public works" (*homem de obras*), he built roads for large *fazendeiros* in the poor north, but only selectively for individuals, families, and areas that had supported him in the election. The developing south, west, and parts of Belo Horizonte were virtually ignored.

Horizontal ties among the agencies helped to deflect the governor's clientelistic politics even as the developmentalist model they served was suffering its worst crisis period. These ties facilitated the mobilization of supportive constituencies and opened lines of communication that proved useful in restructuring the agencies and creating a new development mission for the state.

The technocracy of these agencies was still professionally adept and well entrenched. Despite the economic crisis, or perhaps because of it, Cardoso's administration had no good reasons for disassembling

the agencies on technical grounds. None of Cardoso's advisers was a neoliberal, so the governor did not represent a direct challenge to the state-led development mission. The agencies, moreover, were inter-linked in ways that minimized the risks of clientelistic intervention. CEMIG's and BDMG's technocrats in INDI were defended by their home agencies. Attacks on CEMIG were complicated by its role as both a power company and a partner in the development network linked to INDI and its partner, the CDI.

The agencies were themselves politically protected by networks of private clients and formal and informal associations with the national public firms, which still wielded considerable power in the state legislature and in the governor's office. (An example is how business leaders, particularly José Alencar, then president of the Federation of Industries of Minas Gerais State [FIEMG], persuaded Governor Cardoso, in closed-door audiences in 1988, to remove BDMG president Joaquim Mariano, who had proven inept [BDMG 1996]). Nevertheless, attacks on BDMG in particular were untenable. The bank's existence could not be threatened because it was self-financing; in addition, the BDMG maintained financial resources that proved useful for mobilizing private firms, public agencies like INDI and CEMIG, and their respective lobbies in the state government apparatus.

In 1989, the *mineiro* agencies initiated a dramatic reconversion of the development mission. One of the few political technocrats supported by Cardoso, BDMG president Carlos Alberto Teixeira, commissioned the bank to conduct a comprehensive diagnosis of the *mineiro* economy. The BDMG's 1989 diagnostic study became a vehicle for linking intellectuals and political technocrats. In the next few years, these elites would steward a restructuring of the *mineiro* industrial policy system under the second Hélio Garcia administration, which began in 1990. Paulo Paiva, a leader of the 1989 study, would eventually become Garcia's secretary of planning. Marilena Chaves, a future executive adviser in planning; Paulo Eduardo Rocha Brant, a future manager of the BDMG's industrial credit programs; and Iran Almeida Pordeus, an executive adviser at the BDMG, would all emerge as key actors during the reconversion of *mineiro* planning. Each had a technical background in economics and administration and good political connections to the key political technocrats of the new Garcia administration. The cohesion of this cross-agency group created internal expectations that the agencies would continue to function, thereby facilitating bureaucratic support for remaking the state's development mission (Chaves 1996).

The BDMG report became more than a useful economic study of Minas Gerais; it became a political statement. The diagnostic study argued for a proactive industrial policy to be sponsored by the state government. The new approach for intervention would be "highly selective." It would

emphasize infrastructure and technology and would not require much public production of goods (BDMG 1989a, 25). The report reflected a sensitivity to the manner in which industry was restructuring globally, the competitiveness of the state's key sectors, the eventual privatization of the national public firms, international interdependence, and the fiscal well-being of the state government. Most important, the study focused on policies that would create external economies from Minas's proximity to São Paulo. The old concern with dependency on the *paulista* economy was jettisoned along with state-led prescriptions for development. Some of the policy mechanisms of the new development mission, however, would resemble those of the developmentalist period.

The authors of the 1989 diagnostic study were soon able to put their ideas into practice under the political umbrella of the Hélio Garcia administration. Unlike Newton Cardoso, who, as a political outsider, faced intense opposition, Hélio Garcia's return to the *Palácio da Liberdade* (governor's palace) in 1991 represented the reemergence of the old system of coordination between traditional elites and political technocrats. Alarmed by the state's decaying industrial economy, Garcia sought to put into practice the solutions outlined in the BDMG diagnostic.⁸ The new governor's top economic advisers had close ties to the preparation of the bank's diagnostic. All had ties to the federal university and the *mineiro* agencies. Once in power, these elites restructured the Secretariat of Planning (SEPLAN) and created new mechanisms of industrial policy to follow through on the BDMG prescriptions.

In 1992, the reformers drafted goals for a *mineiro* industrial policy. These ideas would eventually be published in 1995 as the Mineiro Plan of Integrated Development (*Plano mineiro de desenvolvimento integrado*) (see Government of Minas Gerais 1995). According to state officials involved in these discussions, the state development agencies agreed to create "priority sectors" and "structural initiatives" (Ferreira 1996). Expansion of the auto parts sector, attracting multinational investors that could serve other industries in the state, and infrastructural investments in the southern region of the state became the top concerns because of their prospects for promoting external economies. SEPLAN and the Secretariat of Industry and Commerce gained control of an industrial promotion fund, the Industrialization Fund (FIND), to finance fiscal incentives for industrial investment. The Superintendency of Industrialization (SUIND) was created as a subagency of the Secretariat of Industry to administer the fund. In practice, though, SUIND's major decisions were taken by an "executive group" of political technocrats from different *mineiro* secretariats, agencies, and some private business organizations that met in a 15-member Industrialization Council (COIND).⁹

The new structure improved decisionmaking capacity by concentrating administration in the COIND in ways that would facilitate hori-

zontal accountability. Logistical factors further enhanced the new horizontal network, as state officials emphasized the public role in infrastructure as a means of creating “packages” of incentives for new investors and sectors wishing to modernize their production (Brant 1996). CEMIG, which had been hit hard by the slowdown in Minas’s industrial growth, made attracting new industrial clients a priority. In 1995 the utility company expanded its investments in electricity distribution and natural gas to \$400 million annually. More ambitious projects like the expansion of the Fernão Dias Highway (BR-381), which links Belo Horizonte with São Paulo, required a mix of financing from multilateral agencies, the national state, and the state government. With these horizontal ties in place, the new *mineiro* industrial policy system demonstrated its ability to survive, bootstrap resources, and implement a comprehensive industrial policy that advanced the state’s interests in diversifying Minas Gerais’s economy.

POLITICIZED INDUSTRIAL POLICY IN RIO DE JANEIRO

Unlike Minas, the political class in the state of Rio de Janeiro was never a coherent group. Modern urban politics from the late Old Republic (the 1920s) to the “New Republic” democracy (1985–present) were dominated by rival “grand figures” (*figurões*), populist leaders with personal followings. These bosses (*chefes políticos*) expanded Rio’s politics beyond the narrow clientelism of the Old Republic by constructing a mass base of patrimonial support throughout the twentieth century (Conniff 1981, chap. 4; E. Diniz 1982). During the bureaucratic authoritarian period, those who opposed military rule were themselves divided within the Brazilian Democratic Movement (MDB), the official opposition party. Factions linked to the urban political machine of Antônio de Pádua Chagas Freitas (the *chaguistas*), leftists known as *autênticos* (authentic), who challenged military rule and opposed Chagas Freitas’s own close ties to the generals, and independents or members of the political machine of ex-governor Ernâni do Amaral Peixoto (the so-called *amaralistas*) battled for control of state politics (for more detail, see Montero forthcoming, chap. 5).

The MDB’s persistent divisions weakened the party’s ability to represent Rio’s interests in the federal legislature. While the pro-Chagas forces increasingly dominated the state legislature, Rio’s federal representatives were anti-Chagas and against military rule. Intraparty splits also hurt the MDB’s programmatic mission. Without a programmatic party at either the federal or state levels, Rio’s politics during the authoritarian period continued to be dominated by contentious rivalries and the persistence of populism and clientelism. Given also the *chaguistas’* promilitary inclinations, these continuing conditions hindered the rise of

any political coalition able and willing to represent the state's economic interests (Gondim 1986).

During and after the transition to democracy, this legacy of populist government continued. With his political rights restored in 1979, Leonel Brizola, a former governor of Rio Grande do Sul and federal deputy from Guanabara, returned from exile to Rio de Janeiro. Like Chagas Freitas, Brizola faced rival leaders within his party, the PTB, which reemerged after an electoral reform (also in 1979) permitted a multiparty system. *Brizolismo* added yet another current to the widest array of competing political interests in any state of Brazil.

During the 1980s and 1990s, the vestiges of the old *chaguista*, *autêntico*, and *amaralista* cleavages continued to reinforce strong incentives for political elites to cultivate patrimonial bases of support. Politicians' ability to switch parties and the weakness of the parties themselves created additional incentives for political leaders to forge populist-clientelistic coalitions, which were highly unstable and which contributed to elite conflict. Schmitt (1997, 148) reports that 43 distinct party organizations competed in the four major state races held between 1982 and 1994. As an indication of the personalism undergirding these organizations, 21 of them disappeared from the political stage after disputing only one contest.

Given the deeply rooted traditions of populist government in state politics and the overarching level of elite conflict, Rio's development policy was either neglected or manipulated for political purpose. The latter was possible only through the concentration of political control over development agencies, a control that hindered any attempt to forge the horizontal ties crucial to industrial policymaking in Minas Gerais. In industrial policy, the most important example was the experience of Rio's Company of Industrial Development (CODIN).

Like the *mineiro* agencies, CODIN (originally known as the Company of Industrial Districts) was established in the 1970s to bolster Rio's industrial development. Political appointees who manipulated the agency's resources for political purposes continually misappropriated funds, however, leaving a record of activities that inspired little credibility in the eyes of business. Centralization of political control had the effect of undercutting the flow of information within CODIN and between the agency and the industrial districts and firms. Current CODIN employees who worked for the agency during the 1980s report that politically appointed administrators in the Secretariats of Planning and Industry and Commerce seldom communicated with CODIN's staff during the four gubernatorial administrations of Chagas, Brizola (two terms), or Moreira Franco (CODIN 1996a; Cunha Filho 1996; Lima 1996). Directives were often implemented ad hoc and opportunistically, belying the importance of planning.

Centralized control also hindered the creation of continuous communicative links with state and municipal utility companies. As a result, the horizontal ties that connected COIND, INDI, BDMG, CDI, and CEMIG in Minas Gerais failed to emerge in Rio. As a result, even agency personnel note that businesses saw CODIN's activities as limited by the agency's inability to work on all aspects of proposed projects and its inability to escape from the vagaries of political turnover and manipulation (CODIN 1996b, 1999; Rossi 1996).

The discontinuous nature of Rio's industrial policy is illustrated by the uneven governance of CODIN's industrial districts. During the 1980s and early 1990s, the state government created dozens of industrial districts and sold them under the rubric of projects to promote everything from fashion design to computer software. These projects were poorly financed and, in the case of the computer software district, were uncoordinated to federal policies in the sector. By the mid-1990s, many of these districts sat unused and unsold. Those that were sold were underdeveloped and required state government subsidies to attract buyers (CODIN 1996a; Peregrino 1999; Cunha Filho 1999).

FIAT AND THE AUTO PARTS SECTOR IN MINAS GERAIS

The failures of industrial policy in Rio are apparent when compared to the role of the horizontally networked *mineiro* agencies in bringing productive externalities to Minas Gerais's automotive sector.

The most impressive of these cases involves the long history of ties between the agencies and Fiat. The installation of the Fiat plant in Betim was emblematic of the state's strong developmentalist push during the 1970s; and for years afterward, Fiat's presence in Minas defined the state's private sector. Fiat became Minas Gerais's number one exporter. Auto parts firms exclusively serving Fiat moved to Minas during the late 1970s and early 1980s to set up more efficient productive links with the company.¹⁰ More than 84 percent of the firms currently located in the state arrived after the Fiat investment in 1974 (Prates and Marques 1995, 180). By the end of the 1980s, Minas Gerais was home to Fiat's largest plant in the world.

The state government was a prominent partner in Fiat's production and investment strategy from the very beginning. The CDI and the Betim municipal government donated land and basic infrastructure to the Italian automaker in 1974. The state government became a financial partner by providing 45 percent of the capital for Fiat's initial investment. In addition, the new project received fiscal incentives and BDMG financing (C. Diniz 1981, 194). The network of public support included auto parts investments linked to Fiat, as dozens of the automaker's suppliers received aid.

The agencies' persistence—because of horizontal ties—proved crucial to the evolution of cooperative links between the *mineiro* industrial policy system and the firm in this case. During the 1980s, Fiat faced a highly competitive world and Brazilian automobile market that required profound changes to the firm's system of production. Demand in North America, Western Europe, and Japan, three areas that accounted for 85 percent of the global market, began to saturate during the decade. Meanwhile, the proliferation of carmakers in Southeast Asia created competitive pressures that led many international and national firms to ruin. In Brazil, the 1980s proved to be a decade of oscillating demand in the domestic car market because of repeated bouts of inflation. The sector produced more than one million automobiles in 1980, but would not reach that annual figure again until 1988, and then only briefly (E. Diniz 1994, 290).

Pushed by competitive forces within and outside Brazil, the automakers were increasingly compelled to engage in the same methods of productive restructuring practiced by other global producers. Investments in research and development, quality and inventory management, and marketing increased at a frenetic pace during the 1980s to keep and expand market share. This was also true for suppliers, which had to offer higher-quality products to meet the automakers' standards. The assemblers developed "best practice" techniques: management hierarchies were eliminated and flexible management systems were implanted, cooperative labor relations were promoted, and "dead time" inventory systems were transformed into "just-in-time" (JIT) links with suppliers. The reasoning behind these reforms was the same: to find more flexible ways to adjust to ever-changing market conditions and consumer preferences.

Fiat was no more immune to these changes than its competitors. The firm moved rapidly after 1988 to improve the productivity of its labor force and to set up JIT links with suppliers. Although global sourcing—the practice of regularly importing parts from foreign suppliers—could be employed to reduce production costs, local content requirement laws compelled Fiat and its competitors in Brazil to produce cars for the domestic market with 90 percent locally produced auto parts and 60 to 70 percent local content parts in exported units (Lee and Cason 1994, 299). Fiat also made a strategic decision to avoid the uncertainty associated with imports (Addis 1999, 221).

These constraints placed several limitations on Fiat's attempts to bolster its productivity. The firm's Brazilian suppliers had little capital with which to import state-of-the-art machine tools. These firms, moreover, had almost no capacity to globally source their own production. Like many of Brazil's other businesses, Fiat's suppliers were hampered by the country's decaying infrastructure and the high cost of financing,

the latter exacerbated during the 1980s by a contraction in lines of financing offered by the National Development Bank (BNDES).

Other sources of federal support dwindled at the same moment that the 1988 Constitution granted the states the authority to offer tax incentives on the value-added tax (ICMS). Many states did just that, in an attempt to attract automotive firms during the 1990s, in a competition some observers dubbed a fiscal war. This process was accelerated by a new automotive tax incentive regime launched in 1996 by the national government of Fernando Henrique Cardoso. None of these initiatives, however, established a viable national framework for enhancing the productivity of investments in the automotive sector. It could be argued, instead, that they introduced a fiscally destabilizing element that would handicap the ability of both federal and state governments to implement industrial policies.

Fiat would have to rely on more immediate resources to reorganize its supply links in more efficient ways. In order to reduce inventory costs and improve quality control, Fiat prepared JIT links with some suppliers and established a model for more fully incorporating suppliers directly in the plant. The new arrangement was intended to eliminate the need to maintain an inventory of parts and to shift the responsibility for improving quality to the automakers' parts suppliers (see Prates and Marques 1995, 189). The creation of a JIT system could accomplish all of this, but the new arrangement required Fiat to select a "first line" of key suppliers with which it would do business consistently. The target offered by the company was one hundred total suppliers in 1995, down from five hundred in 1988 (Pereira 1995).

For JIT to work, most of these firms would need to be located close to the automaker's plant in Betim. Fiat thus created a *mineirização* ("Minasizing") strategy, a policy of negotiating with suppliers and convincing them of the technical and financial rewards of relocating from São Paulo or abroad to Minas Gerais and close to the firm in Betim. To be sure, Fiat could not dictate its terms to these suppliers. As Addis (1999) has argued, after the 1970s, suppliers in the Brazilian motor vehicle industry had leverage over the strategies of the assemblers through their syndicates, specifically *Sindipeças* (the National Syndicate for Producers of Auto Parts and Other Similar). By forming monopolies and cartels across suppliers after production contracts were signed, auto parts firms could determine prices and organize production themselves.¹¹ In Fiat's case, 45.3 percent of its purchases were controlled by monopolies (21.3 percent) or cartels (24 percent) (Addis 1999, 151). Therefore, reorganizing these assembler-supplier relations on Fiat's terms would be tricky.

Encouraged by Fiat's commitment to source its production locally while most of Brazil's assemblers leaned toward global sourcing, many

Table 1. Fiat's Economic Performance, 1985–1994
(in US\$ millions)

	Number of Vehicles Produced	Net Sales	Exports	Employment
1985	452,863	\$ 750	\$324.2	9,642
1986	173,283	740	249.2	12,644
1987	216,126	1,080	531.9	11,637
1988	217,482	1,230	571.0	12,007
1989	220,098	1,450	629.3	13,000
1990	219,525	1,658	547.4	12,549
1991	254,000	1,626	449.0	13,364
1992	310,176	2,215	707.0	14,001
1993	393,600	2,600	622.0	15,000
1994 ^a	450,000	3,000	720.0	17,000

^aData are preliminary.

Source: INDI 1994, 3.

first-tier suppliers embraced *mineirização*. If in 1989 only 26 percent (or 35) of Fiat's suppliers were located in Minas Gerais, by 1995 that number was up to 44.3 percent (or 54 firms). The majority of those 54 suppliers in 1995, moreover, were located at three proximate poles: 18 in Betim (5 kilometers from the plant), 6 in Belo Horizonte (30 kilometers), and 17 in Contagem (15 kilometers away) (Fiat 1995). Many of these firms were linked by computer network to the Betim plant so that orders on JIT could be processed without unnecessary delays (see Pereira 1995).

The restructuring of Fiat's productive supplier relations dramatically reduced production costs, despite the persistence of macroeconomic instability, inefficient infrastructure, and suppliers with little access to finance. As a result of its restructuring, the firm saved an estimated \$1 billion in production costs from 1988 to 1994, while sales increased 174 percent (*Estado de São Paulo* 1994).

Improvements in productivity and relations with suppliers at Fiat during the 1980s and 1990s led to significant gains in the Brazilian marketplace. Sales improved by four times and employment at the automaker expanded markedly (table 1). Fiat's share of the auto market in Brazil increased impressively, from 13.4 percent in 1980 to 24.5 percent in 1990 and 33.4 percent in 1994 (ahead of Volkswagen's 33.2 percent), making Fiat Brazil's number one automaker that year. In less than three years, Fiat jumped from last place in the Brazilian market to the top spot. Fiat's suppliers also fared well. During the period of the firm's extensive restructuring of producer-supplier links, sales, and employment at Fiat's suppliers improved significantly (table 2).

Table 2. Economic Performance of Fiat Suppliers, 1985–1994
(in US\$ millions)

	Net Sales, Brazil	Net Sales, Minas Gerais	MG as Percent of Total Sales in Brazil	Percent of Total MG Exports	Employment, Minas Gerais
1985		232.25		18.11	10,351
1986		255.88		18.47	12,194
1987		365.11		24.97	12,762
1988		387.23		9.25	14,206
1989		544.62		36.71	18,800
1990		393.52		8.62	16,692
1991	9,800	305.00	3.1	20.00	14,500
1992	10,000	340.00	3.4	20.40	15,000
1993	11,300	600.00	5.3	17.00 ^a	16,600
1994	12,800	720.00	5.6	17.00 ^a	17,000

^aEstimated from preliminary data.

Source: INDI 1994, 7.

A noteworthy point regarding both Fiat and its suppliers is that improvements in exports could not explain the better performance. Fiat's exports increased, but not consistently enough to account convincingly for the improvement in performance; exports by Fiat's suppliers actually decreased during the period. From 1996 to 1998, only 12 percent of the sector's production was exported (INDI 1998, 14–15).

The effect on the *mineiro* economy was also pronounced, although concentrated in one area. The boost in Fiat's production contributed to the expansion of the automotive complex in and around Belo Horizonte and Betim, which housed 60 percent of the auto parts producers in Minas (41 firms in 1993). During the most intense period of *mineirização*, between 1992 and 1994, Betim saw \$130 million of new investment, \$115 million in additional tax revenue, and 5,000 new jobs (*Estado de São Paulo* 1994).

Mineiro agencies, such as INDI and BDMG, saw Fiat's strategy of persuading suppliers to relocate from São Paulo or invest from abroad as consistent with their own strategy of improving the productivity of the auto parts sector. Fiat was well aware that the agencies shared mutual interests with the firm, and both publicly announced cooperative "partnerships" involving a mix of state fiscal incentives and financial supports to realize agreed goals.

One example of the partnership system involved Kadron, one of Fiat's chief exhaust system suppliers. In March 1993, Kadron initiated the

first phase of a three-step modernization program designed to improve its evolving just-in-time links with Fiat. In April 1994, the firm completed construction of its new plant for the JIT construction of exhaust systems and catalytic converters. Total investment in the plant exceeded \$4 million and created 150 new jobs. Kadron received tax incentives from COIND and BDMG totaling more than \$4 million for the initial stages of the firm's modernization and all its investments since 1990 (a sum that was paid back in 1996). INDI provided technical and infrastructural support (telephone lines, energy, roads), which, in the opinion of Luis F. S. Machado, Kadron's general manager, accelerated the firm's modernization at a rate that "exceeded expectations" (*INDI Informa* 1993, 3).

Another example of the "partnership" system between INDI and Fiat was a program to supply readymade sheet metal to the automaker. Before 1984, Fiat prepared steel pieces internally at great cost. In that year, INDI officials organized a program to have Usiminas, then a national public steel firm, produce readymade pieces of three hundred, four hundred, and five hundred tons and make them available on timetables established by Fiat. By 1992 Usiminas was stamping body parts itself. Fiat officials note that the original partnership was possible only because INDI officials were well connected enough at Usiminas to implement the program. As a result of the deal, Fiat saved millions of dollars on inventory and transportation costs while Usiminas was guaranteed about \$100 million in sales every year.¹²

Fiat succeeded in increasing the percentage of the firm's *mineiro* suppliers, but overall, the process of *mineirização* moved more slowly than the company wanted. One reason suggested by Prates and Marques (1995, 190–91) was the unsophisticated nature of many of the *mineiro* and transplanted *paulista* suppliers. These auto parts firms tended to lack the organization and technical ability required to make the adjustments to JIT as quickly as Fiat demanded.¹³ Many of these firms had not learned how to outsource their own operations and therefore could not meet Fiat's quality standards. From the suppliers' perspective, this problem was tied to the inadequacy of private sources of financing and the need to focus public resources on technology and worker training (see INDI 1998).

Another reason for the gradual evolution of the firm's JIT strategy was the continuing uncertainty with national macroeconomic policy. As Minas Gerais's chief exporter, Fiat was directly affected by changes in national macroeconomic policy. Like its competitors during the 1980s, Fiat's export strategy suffered from fluctuations in price and exchange rates resulting from repeated failures at heterodox stabilization (Lee and Cason 1994, 234–35). The firm attempted to increase its imports of auto parts for its top models (50 percent of content) as part of its global sourcing strategy at the same time that it maintained high domestic con-

tent in its popular models (about 90 percent). Yet sudden changes in import tariffs complicated the firm's global sourcing. In September 1994, tariffs were reduced from 63 percent to 20 percent, but they increased again in February 1995 to 35 percent and then to a whopping 70 percent in March 1995, in response to growing Brazilian trade deficits that threatened the Real Plan.

Sudden changes like these in macroeconomic policy made it difficult for Fiat's management to determine costs for the production of top and popular models and to decide what supplies to organize on JIT locally and what supplies to import.¹⁴ MERCOSUL, the Southern Cone Common Market, failed to improve markedly either Fiat's or the state's trade performance. By 1997, Minas's exports to MERCOSUL countries (11 percent of total exports) remained below the national average of 17 percent (Libânio 1998, 243).

The final reason for the gradual nature of Fiat's *mineirização* strategy was a subtle change in the firm's relationship with the state promotion agencies. From the beginning, the agencies' interests were consistent with those of the firm. As Fiat's interests became more specific in terms of where it wanted its suppliers to locate, the state government continued generally to support the firm's strategy, as in the case of Kadron, but it also looked to diversify the externalities produced by Fiat's presence. Long wary of making the same mistakes that São Paulo had made in allowing industrialization to concentrate in one major metropolitan area (a process associated with rising labor costs, highly organized and politicized unions, pollution, and transport bottlenecks), the *mineiro* political-technocratic elite intended to spread the effects of Fiat's investment in the mid-1990s. This meant subtly opposing Fiat's priorities in locating suppliers close to Betim and metropolitan Belo Horizonte and forming synergistic ties directly with suppliers.

One strategy was to relocate suppliers and their associated firms to other areas of the state where the initial wave of auto parts investments in the 1970s and 1980s did not reach and where Fiat's production system was not predominant. This angered some Fiat executives, who believed that their *mineirização* strategy was being undermined. Such suspicion was inflamed by the state's insistence (to Fiat's chagrin) on attracting a second large automaker, a prospect that would be more difficult if the auto parts sector concentrating around Betim, Contagem, and Belo Horizonte became exclusive suppliers to Fiat.

If the price of such conflicts for Fiat was a slowdown in its *mineirização* strategy, the benefit to the state's economy was a more diversified auto parts sector, a condition improved by official commitments to create infrastructure in other areas of the state and to tie existing auto parts producers to other automakers, both potential new investors in Minas and those located in neighboring São Paulo and Rio de Janeiro.

The most prominent example of the state's attempt to diversify the auto parts sector's presence was the development of Sul de Minas, the southernmost region of the state, as an alternative area for the placement of auto parts investments relocating from São Paulo. During the 1990s, state and municipal governments conceded financial incentives under the FIND programs, land grants, and subsidized infrastructure to auto parts firms wishing to set up shop in Sul de Minas and service producers in São Paulo.

These policies only enhanced the already attractive location of Sul de Minas for *paulista* auto parts manufacturers, many of which—such as the region's two largest auto parts producers, Mangels and Cofap—had maintained investments in the region since the early 1970s. Other auto parts manufacturers were attracted by the proximity of Sul de Minas to automakers in São Paulo, the region's developing infrastructure, and fiscal incentives. They followed the two pioneer firms in the 1980s and early 1990s to the industrial districts of Pouso Alegre (Brasinca, JPX, KTE, Sima), Três Corações (Elma Metalúrgica, TRW, Belgo Mineira, G. Lúcio), and the coffee region of Varginha (Zurich, Keiper Recaro, and Politek Tecnologia). Virtually all these companies did their primary business with the automakers in São Paulo rather than with Fiat. Of the 71 auto parts producers in Minas in 1993, 20 were located in Sul de Minas, and only one of these served Fiat directly (Prates and Marques 1995, 179).

The state government's interests in developing Sul de Minas were purely strategic. Carlos Alberto Teixeira de Oliveira, state secretary of industry and commerce in 1990, argued that fiscal incentives would be used to promote the industrial deconcentration of São Paulo and make Sul de Minas a magnet for electronic and auto parts firms (*Gazeta Mercantil* 1990). The process stood both to benefit the development of the southern part of Minas Gerais and to bring more tax revenue into the public coffers. An additional, perhaps unintended consequence was that relocated *paulista* firms, by escaping the inefficiencies of metropolitan São Paulo's agglomerated industries, reduced their costs of production. Moreover, given that over 80 percent of raw materials were imported from São Paulo (see INDI 1998, 17–18), the region's growth would boost neighboring economies.

Minas's politicians, however, hoped for still more: the possibility that the next big automotive investment in Brazil would locate in Sul de Minas, in the midst of all those auto parts suppliers. Both the combined effort of *mineiro* technocrats, who prepared candidate locations with infrastructure, and the more public appeals of *mineiro* politicians provided the groundwork for the eventual agreement by Mercedes to build its new Brazilian facility in Juiz de Fora in 1996.

Horizontal ties played a key role in consolidating the Mercedes investment. In 1993, INDI officials, the municipal government of Juiz de

Fora, the Secretariat of Industry of Minas Gerais, and representatives from the city's two largest private firms, the steel firm Siderúrgica Mendes Júnior and the mining firm Companhia Paraibuna de Metais, signed an accord that allotted responsibilities for each actor in attracting new investment to Juiz de Fora. INDI and these two firms were responsible for formulating market studies, while the municipal and state governments would prepare fiscal incentives and provide additional infrastructure as needed (Silva de Mattos Júnior and Bastos 1995).

Critical elements were CDI's construction of a seven-million-square-meter industrial district with complete infrastructure for potential suppliers, and CEMIG's \$5 million natural gas project for Juiz de Fora.¹⁵ During the secret negotiations with Mercedes, COIND officials mobilized these actors, while the final call on granting the "megafund" allotment was made by Governor Eduardo Azeredo, a politician with close ties to his predecessor, Hélio Garcia, and the state's political technocracy. The coordinating or "executive group" of COIND was responsible for mobilizing INDI, the municipal government, and the other agencies (Chaves 1996).

The results of the Mercedes investment satisfied the *mineiro* technocracy's goals of developing an automaking platform outside the Fiat-dominated Betim–Belo Horizonte–Contagem axis. This new platform would link the diversified auto parts firms in Sul de Minas and the adjacent underdeveloped Zona da Mata area, where Juiz de Fora was located. All this was accomplished with the Mercedes deal (Brandão et al. 1998, 256). The initial investment of \$400 million would create an estimated 6,500 new jobs in a region that accounted for only 7 percent of Minas's GDP before Mercedes arrived. Future investments that the company proposed would add another \$300 million to Zona da Mata through 2019, not including the inevitable movement of auto parts producers and their suppliers to the region (*Exame* 1996). Most important was that under the terms of the financial incentive granted to the company, Mercedes agreed fully to repay the state's credit by the 2019 target date, adding to the several billion dollars of estimated additional revenue to be generated from the automaker's presence.

Catalyzed by Mercedes' impending arrival and Fiat's continued expansion, Minas's auto parts sector expanded during the mid-to-late 1990s. Between 1996 and 1998, the sector increased its investments by \$800 million and its sales from \$1.2 billion to \$2 billion. *Mineiro* auto parts firms also became more productive, generating \$28,000 of sales per worker in 1996 and \$42,136 in 1998 (INDI 1998).

Although laying the groundwork to attract a rival producer raised the hackles of Fiat executives, the state agencies and the Italian multinational remained confident that their partnership would continue despite divergent opinions of what was best for Minas Gerais. This was the reaction of the Fiat management at the Betim plant (Pereira 1995).

Both partners came to accommodations regarding Fiat suppliers that were convinced not to locate on the increasingly concentrated Betim–Belo Horizonte–Contagem axis. In some cases, the state government obtained Fiat's backing for developing industrial districts outside these municipalities but still close enough to the the Betim plant to satisfy Fiat's desire for JIT links.

One such example was Sumiden Tokai do Brasil Indústrias Elétricas, a private, multinational (Sumitomo Group) producer of electronic components employing one thousand workers. In 1993, when Sumiden first made contact with INDI, the agency was looking to develop the industrial district of Mateus Leme, a municipality located only 32 kilometers from the Fiat circle of suppliers in Betim. Months earlier, Mateus Leme had lost the Juatuba Industrial District in a redistricting controversy that had stripped the municipality of its chief source of tax revenue and virtually all its industry, except for a beer factory owned by the Brahma company, a Brazilian firm. In cooperation with the mayor, Francisco Rodrigues da Cunha, who had strong political interests in getting the city's district back or developing a new one quickly, INDI technocrats developed a program to attract new Fiat suppliers to Mateus Leme.¹⁶ State authorities developed the municipality's land, infrastructure, and telephone system; the city government donated land, water, asphalt, energy from a transformer purchased from CEMIG, more than four thousand construction workers, and ten years of local tax incentives. The local political parties all gave the mayor *carte blanche* to organize the city's resources.

The development of Mateus Leme was well under way when INDI officials showed Sumiden's management the site in 1993. The agency's work convinced Sumiden's executives that Mateus Leme was a better location than Betim for the Fiat supplier's proposed ten-thousand-square-meter plant. According to Sumiden officials, the activities of the INDI and the local government reduced the firm's costs, increasing production and employment in the short term by freeing up resources during startup. The result was a faster, more efficient, and larger than expected initial investment than would have been made in Betim (Sumiden Tokai 1996). After Sumiden's initial investment, the firm's further expansion was promoted in 1995 with \$1 million of BDMG financing.

Mateus Leme did not have to wait long to see a return on the resources spent on Sumiden. Twenty more firms followed Sumiden's investment between 1993 and 1996. These firms created more than 1,700 new jobs directly, and many more in commerce and services indirectly (Cunha 1996; Costa 1996). All were interested in taking advantage of Mateus Leme's resources. Many of these firms, moreover, were unassociated with the automotive sector; for example, Sogef, a producer of filters, and Petri, a manufacturer of plastics, among others, soon joined new Fiat suppliers Produflex (rubber parts) and CGE (plastic parts).

Within three years, the “valley of plastics,” a collection of plastics and recycling firms, developed in and around Mateus Leme. Many of these firms first appeared as subcontractors of Sumiden and other Fiat suppliers. In time, however, these firms developed their own subcontracting relations with service firms.¹⁷ In CGE’s case, the firm diversified and began to market its plastics products to other industrial consumers. As more suppliers followed CGE’s example, Mateus Leme, which had been virtually devoid of industry, developed a formidable array of infrastructure. Officials interviewed at Sumiden, at INDI, and in Mateus Leme’s government said that none of this could have been accomplished so quickly without a coordinated effort among politicians, the state agencies, and the firms.

The global strategies of the automakers, motivated by international competition and technological change, were the key factors affecting the investment patterns of the automobile and auto parts firms: their location, the quality of their production, and the intensity of required modernization of plant and equipment to keep up with global auto production. Even these factors, however, were mediated by complex horizontal linkages among INDI, BDMG, *mineiro* secretariats, and other intermediate and municipal-level agencies.

CONCLUSIONS

The advent of an effective subnational response to the demands of multinational producers and local needs is the result of political engineering. The agencies of Minas Gerais were conceived under political conditions that favored the delegation of authority to political-technocratic management. Horizontal ties linking the agencies proved crucial in protecting them from clientelism during the 1980s. Horizontal embeddedness also made possible information exchanges among the agencies that proved essential in changing the state’s development mission in the face of shifting economic conditions. The agencies guaranteed their accountability to their private clients, allowing their ties to these firms to continue with high levels of confidence.

Unlike Minas, Rio never enjoyed the elite accommodations evident among segments of the *mineiro* political oligarchy. From at least the second half of the Old Republic on, Rio’s state politics was driven by conflicts among populist politicians with clientelistic support bases. Politically centralized management of industrial policy crowded out the possibilities for developing horizontal embeddedness and thereby the capacity for promoting industrial externalities.

The *mineiro* agencies’ experiences in promoting externalities emerged from their pragmatic responses to global economic change. The agencies evinced exceptional knowledge of the importance of

geography in multinational and domestic investment strategies. More broadly, their actions underscore the way that economies really work: as complex systems linking investment decisions to the availability of public goods, technology, human resources, and information—factors that are central to the study of economic geography (Krugman 1991).

Highlighting the role of subnational government and, more concretely, state government is not intended to imply that other types of subnational actors are less-relevant protagonists of industrial policy. Indeed, new research is revealing the role of municipal governments, industrial districts, semipublic agencies, and other less conventionally defined actors. For example, Pérez-Sáinz (1997) has studied local communities as sociocultural units with a distinct capacity for responding to changes in global markets. The present study has sought to make a similar contribution by fleshing out the political factors that explain successful adjustment by subnational governments in the face of unfavorable conditions.

ACRONYMS

BDMG	Banco de Desenvolvimento de Minas Gerais
BNDES	Banco Nacional de Desenvolvimento Econômico e Social
CDI	Companhia de Distritos Industriais
CEDEPLAR	Centro de Planejamento
CEMIG.....	Centrais Elétricas de Minas Gerais
CODIN	Companhia de Desenvolvimento Industrial
COIND	Conselho de Industrialização
FIEMG.....	Federação das Indústrias do Estado de Minas Gerais
FIND	Fundo de Industrialização
FJP	Fundação João Pinheiro
ICMS	Imposto sobre Circulação de Mercadorias
INDI	Instituto de Desenvolvimento Industrial
MDB	Movimento Democrático Brasileiro
PTB	Partido Trabalhista Brasileiro
SEPLAN.....	Secretaria de Planejamento
SUIND.....	Superintendência de Industrialização

NOTES

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1. Patterns of recruitment from elite university systems, meritocratic

advancement, long terms of service, the circulation of bureaucrats among different policy agencies, and the development of an effective esprit de corps are all factors that increase the autonomy of the professional economic bureaucracy. See Schneider 1993.

2. "Elite accommodation" will emerge as a cross-party phenomenon, especially when parties are weak (that is, elites discount party labels and switch parties). In weak, "inchoate" party systems such as Brazil's, elites are still prone to organize around personalities or larger groups, such as "traditional" families. See Hagopian 1996; Mainwaring 1997.

3. This is in marked contrast to the development of "reciprocal accountability" structures in the old Soviet bureaucracy. Roeder (1993) demonstrates that these networks reproduced rigid constraints against innovation. I thank Rich Snyder for this observation.

4. Although São Paulo state's total share of national industrial production fell from 57 percent in 1970 to 50 percent in 1989, the relative share of the interior regions increased compared to the metropolitan area. The interior regions represented 25 percent of the state's industrial production and 30 percent of industrial employment in 1970. They managed to increase that share to 47 percent of industrial production and 40 percent of industrial employment by 1990 (Diniz and Teixeira dos Santos 1994, 36–37). The municipality of Campinas alone amassed more than 8 percent of Brazil's industrial production by 1980, more than the states of Minas Gerais and Rio Grande do Sul (Machado 1990, 36).

5. A 1990 study of small- and medium-sized auto parts firms concluded that patron-client relations were reconstituted within the firm, compelling workers to avoid any actions that might be in conflict with the general interests of their "patron." The study was conducted by Allan Claudius Barbosa, and the results were reported in *Estado de Minas* 1990.

6. CEMIG paid for 75 percent of the INDI while the BDMG maintained 25 percent interest in the agency. At CEMIG's prompting, the Arthur D. Little Co. became a model for the INDI's operations. See Brito 1984, 249.

7. Estimates of this number vary somewhat. Clélio Diniz, perhaps the best authority on the subject, suggests that investments topped \$10 billion in the 1970–74 period alone (1984, 267).

8. Unlike his successor, Eduardo Azeredo, who took a more direct role in the reorganization of Minas's industrial policy, Hélio Garcia was content to delegate his authority to a core group of political technocrats. One popular joke underscored the governor's favorite tactic: "Hélio does not just delegate [authority], he devolves it" (*Hélio não delega, ele entrega*). Garcia's economic policies relied almost exclusively on three political technocrats: Secretary of Planning Paulo Paiva; Secretary of Economy Roberto Brant; and Chief of Staff Ivandro de Padua Abril. Abril focused on legal matters, making him more of a secondary actor in the process. Paiva and Brant became Garcia's point men on industrial policy.

9. COIND had existed before as a forum for private business associations and government agencies. In its new form, COIND has 15 members, which send representatives to COIND meetings. The members are the Secretariats of Planning, Economy, Industry, Science and Technology, and Environment; the state banks; BDMG; INDI; CDI; FIEMG; the Commercial Association of Minas Gerais; and the Center for Industrial Cities (a collection of *mineiro* mayors).

10. In comparison to São Paulo's auto parts sector, Minas Gerais's auto parts sector is small. Whereas São Paulo was home to 86 percent of Brazil's auto parts firms in 1994, Minas Gerais, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, and Pernambuco together maintained only 13.5 percent of the sector (Prates and Marques 1995, 181).

11. Auto parts suppliers were forced to issue competing bids on new product lines, but once contracts were established they could solve their coordination problems and keep assemblers from initiating a price war among them. See Addis (1999, 151–52).

12. The original contracts with Usiminas were extended in 1994 to include other steel products used in Fiat's production line. The new contracts added \$20 million in annual sales to Usiminas's output (*Gazeta Mercantil* 1994).

13. One of Fiat's key concerns was the technical backwardness of local electronic parts suppliers. See the interview with the firm's chief of Brazilian operations, Pacífico Paoli, in *Jornal de Brasília* 1994.

14. Company officials routinely qualified their estimates on the firm's long-term restructuring and performance on the existence of import liberalization, favorable exchange rates, and flexible credit, conditions that were not consistently available during the 1990s (*Exame* 1992).

15. CEMIG's commitment to natural gas in the Zona da Mata was the product of an INDI study in the late 1980s and the BDMG's diagnostic report, both of which pointed out that 70 percent of the industrial users of natural gas worked between Juiz de Fora and Belo Horizonte. Thus Juiz de Fora was a logical location for the development of natural gas distribution systems for industrial clients (see BDMG 1989a, 124).

16. Cunha said he turned to the INDI in 1992 out of frustration and political pressures created by the loss of the Juatuba District (Cunha 1996). Costa (1996) confirmed this story.

17. I thank Rodrigo Fiuza Costa for his careful description of how this process occurred.

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