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**The Politics of Institutional Renovation and Economic Upgrading:  
Lessons from the Argentine Wine Industry**

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Abstract

Through a comparative, longitudinal analysis of the wine industry in two Argentine provinces, this article examines how different political approaches to reform shape the ability of societies to build new institutions for economic upgrading. The article finds that inherited structural factors per se can not easily explain the different solutions to this challenge. A better explanation focuses on how governments confront the dual challenge of redefining the boundary between the public and private domains and of recombining the socio-economic ties among relevant firms and their respective business associations. A “depoliticization” approach emphasizes the imposition of arm’s-length incentives by a powerful, insulated government, but appears to contribute little to institutional change and upgrading. A “participatory restructuring” approach promotes the creation of public-private institutions via adherence to two key principles: a) inclusion of a wide variety of relevant stakeholder groups and b) rules of deliberative governance that promote collective problem-solving. This latter approach appears to have the advantage of facilitating collaboration and knowledge creation among previously antagonistic groups, including government.

Keywords: institutions, networks, upgrading, Latin America, industrial policy

JEL Codes: M13, F23, H4, L1, L5, O1, P16, D8

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## Non-technical Summary

Scholars of economic development increasingly argue that growth and international competitiveness depend on the ability of a society to upgrade its firms and industries – a shift from lower- to higher-value economic activities by using local innovative capacities to make continuous improvements in processes, products, and functions (Doner, Ritchie, & Slater, 2005; Giuliani, Pietrobelli, & Rabellotti, 2005b). The attendant creation and diffusion of skills and knowledge relies on collective resources and coordination. In turn, innovative capacities depend not simply on the presence of foreign investors but especially on particular local constellations of inter-firm networks, institutions, and state capacities.<sup>1</sup> Yet as is evident in current debates about the origins and change in institutions (Campbell, 2004; Greif & Laitin, 2004; Mahoney & Rueschemeyer, 2003), the developmental state (Doner et al., 2005; O’Riain, 2004), clusters (Perez-Aleman, 2005; Schmitz, 2004b), and socio-economic networks (Adler & Kwon, 2002; Ansell, 2000; Kogut, 2000; Padgett, 2001; Powell, 2002), it is less clear how public and private actors forge innovative capacities in the first place. This is particularly distressing for regions like Latin America, where the history of failed development and backwardness points to a lack of the requisite social and institutional preconditions. (Haber, 2002; Levitsky & Murillo, forthcoming; Pack, 2000)

Analysis of the Argentine wine sector may be especially helpful here. On the one hand, Argentina is typically known for its dysfunctional social capital and political-economic institutions (Levitsky et al., forthcoming; Ross Schneider, 2004), and its wine industry has a long history of backwardness and virtually no international presence. On the other hand, the Argentine wine sector witnessed a turnaround in the 1990s and now accounts for more than 2% of the over \$12 billion global wine market. In particular, the divergent upgrading paths of the dominant, neighboring winemaking provinces of Mendoza and San Juan offers a unique opportunity to use a longitudinal, subnational comparative analysis to evaluate the determinants of more or less successful attempts to create new innovative capacities. (Schmitz and Nadvi 1999; Snyder 2001, Montero 2001) Mendoza has captured the disproportionate share of exports by building in the 1990s a new constellation of institutions and networks that support sustained improvements in processes and products in a wide variety of firms. In contrast, San Juan has been a laggard in upgrading its wine and grapes, despite advancing policies that did usher in large amounts of new investment. Moreover, the institutional model pioneered by Mendoza is being replicated at the national level. In 2004, the Argentine congress and president signed into law a strategic wine sector policy that is self-financing and is governed by a non-state body comprised of representatives from relevant business associations, research institutions, and provincial and federal ministries. This policy and governance structure are arguably without precedent in a country known for the executive imposing protectionist policies that end up draining the budget and benefiting a few elites. (Guillen, 2001; Ross Schneider, 2004)

What types of institutional innovations contributed to the upgrading in Mendoza? How did the policymaking process in Mendoza enable public and private actors to build these new institutions and networks in the 1990s, when they were unable previously and while those in San Juan could not?

This article argues that changes in upgrading and institutions are not wholly determined by pre-existing conditions or by the sudden implantation of new rules or incentives. Rather, different political approaches to reform, especially during crises, can facilitate or impede the construction of new public-private institutions that underpin upgrading and the recombination of socio-economic ties between previously antagonistic groups. Political approaches to reform are prior to and broader than particular policies. They are strategies governments use to construct political power that define the mechanisms linking the functioning and substance of institutions with policymaking coalitions. (Jacoby, 2000; Thelen, 2003) In this view, upgrading and institutional change are incremental processes, in which the relevant firms, associations, and public actors jointly experiment with new roles and rules. In identifying the basic spectrum of political approaches to reform, this article aims to clarify the governance conditions that can help initiate and sustain these experiments.

During crises, governments have the political space to overcome past socio-political constraints by formulating a strategy to confront the dual challenge of reconstructing the boundary between the public and private domains and recombining the relative power and social ties among firms and their associations. (Ross Schneider, 2004; Snyder, 2001) On the one hand, a government may choose what I call a “depoliticization” approach, which aims to insulate centralized policymaking and quickly impose new rules based on high powered economic incentives. On the other hand, a government may choose what I call a “participatory restructuring” approach which aims to embed the state and policymaking in society in new ways (Evans 2004, Hirst 1994, Montero 2001, Sabel 1994). This approach rests on two key principles of empowered participatory governance (Fung & Wright, 2001): 1) empowering a variety of public agencies and socio-economic groups to participate in institution-building; and 2) requiring participants to share private information in ways that induce collective problem solving and mutual monitoring. The former approach may initially stimulate investment but will tend to impede upgrading and keep the past disproportionate distribution of resources. The latter approach can bring together previously disparate and even antagonistic groups in new ways so as to foster collective learning and monitoring and thus new public-private institutions supportive of upgrading.

The article develops these arguments through a longitudinal, comparative analysis of the wine industry and relevant public policies of the aforementioned provinces during the 1990s. Such a comparison allows one to control for typical ex ante, structural explanatory variables, such as legal institutions, electoral rules, social capital, climate, and industry impact. Moreover, the analysis uses unique board and membership data to construct a UCINET model that demonstrates how the new public-private institutions help, first and foremost, bridge social and cognitive divides between relevant socio-economic groups and the provincial government.

## **Introduction**

Scholars of economic development increasingly argue that growth and international competitiveness depend on the ability of a society to upgrade its firms and industries – a shift from lower- to higher-value economic activities by using local innovative capacities to make continuous improvements in processes, products, and functions (Doner, Ritchie, & Slater, 2005; Giuliani, Pietrobelli, & Rabellotti, 2005b). The attendant creation and diffusion of skills and knowledge relies on collective resources and coordination. In turn, innovative capacities depend not simply on the presence of foreign investors but especially on particular local constellations of inter-firm networks, institutions, and state capacities.<sup>2</sup> Yet as is evident in current debates about the origins and change in institutions (Campbell, 2004; Greif & Laitin, 2004; Mahoney & Rueschemeyer, 2003), the developmental state (Doner et al., 2005; O'Riain, 2004), clusters (Perez-Aleman, 2005; Schmitz, 2004b), and socio-economic networks (Adler & Kwon, 2002; Ansell, 2000; Kogut, 2000; Padgett, 2001; Powell, 2002), it is less clear how public and private actors forge innovative capacities in the first place. This is particularly distressing for regions like Latin America, where the history of failed development and backwardness points to a lack of the requisite social and institutional preconditions. (Haber, 2002; Levitsky & Murillo, forthcoming; Pack, 2000)

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opportunity to use a longitudinal, subnational comparative analysis to evaluate the determinants of more or less successful attempts to create new innovative capacities. (Schmitz and Nadvi 1999; Snyder 2001, Montero 2001) Mendoza has captured the disproportionate share of exports by building in the 1990s a new constellation of institutions and networks that support sustained improvements in processes and products in a wide variety of firms. In contrast, San Juan has been a laggard in upgrading its wine and grapes, despite advancing policies that did usher in large amounts of new investment. Moreover, the institutional model pioneered by Mendoza is being replicated at the national level. In 2004, the Argentine congress and president signed into law a strategic wine sector policy that is self-financing and is governed by a non-state body comprised of representatives from relevant business associations, research institutions, and provincial and federal ministries. This policy and governance structure are arguably without precedent in a country known for the executive imposing protectionist policies that end up draining the budget and benefiting a few elites. (Guillen, 2001; Ross Schneider, 2004)

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Section I lays out the theoretical underpinnings of this argument. Section II reviews upgrading in the Argentine wine industry. In the 1990s, Mendoza appears to have initiated and sustained coordinated, decentralized product and process experiments across a wide variety of firms, micro-climates, and products. Section III argues that the divergent outcomes in San Juan and Mendoza can not be explained alone by inherited structural variables, such as soils, climates, industrial and social structures, macro-economic conditions, legal regimes, strength of political executive, and political party affiliation. In particular, the evidence suggests that inherited social and professional ties alone may help initiate new forms of collective learning, but their exclusionary principles can also thwart broad-based upgrading and collective action due to the diversity of interests, historical animosity, and resource inequalities between regions within a province. Section IV analyzes the different political approaches by the governments of the two provinces in confronting the general economic turbulence and growing crisis in wine sector in the late 1980s. It shows how Mendoza's participatory restructuring approach to building new public-private institutions helped overcome these conflicts by recombining the ties among diverse groups and fostering collective problem-solving.<sup>3</sup>

### **I. Linking the Macro and the Micro for Change and Growth**

There are two broad views about the social and political forces that shape the development of new inter-organizational networks and institutions supporting innovative capacities. The "top down" view understands change as epochal. During periods of crisis, governments have the political space to insulate a strong, coherent policymaking apparatus from particularistic interests to design and impose rapidly a new set of rules and institutions on society. Whether one emphasizes rapid market liberalization and private property rights or strategic interventions into industries, the new rules are based largely on high powered economic incentives that will guide



domestic and foreign firms to make the necessary investments into new technologies and capabilities. (Amsden, 1989; Boycko, Shleifer, & Vishny, 1995; Haggard & Kaufman, 1995)

In contrast, the “bottom up” view emphasizes the continuity of social forces and is suspicious of the interventions and rules suddenly imposed from the commanding heights. Economic activity is mediated by and embedded in networks and associations that embody distinct sets of social ties, norms, reputations, and resources. Scholars may argue about whether the origins and reproduction of these properties are rooted in repeated interactions among individuals facing common externalities (Ostrom, 1990), deep traditions of civic mindedness and kinship (Putnam et al., 1993), or past socio-political conflicts (Schneider 2004; Padgett 2001). But they share the view that these properties are enduring and that, at the limit, the public rules, policies, and institutions are essentially the formal manifestations of the attendant social norms and structure. Government receives and enforces the game but rarely defines it autonomously.

These literatures have certainly improved our understanding of the conditions for growth and innovation. However, their apparent incompatibilities they reveal some common weaknesses. First, to the extent that development in general and institution building in particular relies on the insulation of the executive and a team of technocrats, then the lack of information and knowledge flows between groups of policymakers and recipients not only can breed self-dealing and “monocropping,” but also can destroy social and human capital (Evans, 2004; McDermott, 2002a, 2002b; Ostrom, 1995). Second, many of the received accounts of social structure and institutions tend reify interests and social groups in such ways as make them functional, binary, and immutable to change. (Granovetter, 1985) Third, although a society may contain a plethora of, say, professional associations, the attendant social ties and norms that can ground collaboration and collective learning can also be self-limiting and exclusionary. To the

extent that these groups have different needs and resources, are relatively isolated, and are not incorporated into more encompassing institutions, a diverse socio-economic environment can easily produce a balkanized society that thwarts broad-based innovation, knowledge diffusion, and institutional change. (Ostrom 1999, Safford 2004, Schneider 2004, Adler 2001)

These criticisms highlight that optimal incentives or the inherited structure of the state, electoral rules, and socio-economic groups may be indeterminate in clarifying how public and private actors forge new organizational and institutional forms to promote innovative capacities even during crises, particularly when a society has a long history of dysfunctional social structures and political-economic institutions. In order to begin to capture the interaction of continuity and change, one must first clarify the political approaches toward reform that can both redefine the boundary between the public and private domains and recombine the ties and resources of relevant socio-economic groups. This article aims to specify the spectrum of these approaches and their mechanisms for inducing and sustaining change. These specifications can provide the conceptual links between the broader socio-political trends of a society and the upgrading outcomes.

The first insight toward filling this gap comes from research that emphasizes the public-private nature of upgrading institutions and the ways in which they help embed the state and constituent business associations in a constellation of horizontal governance and professional ties (Evans 1995, Schmitz 2004, Montero 2002, Perez-Aleman 2000). While market failures may require government intervention, uncertainty and informational asymmetries make unclear just what new rule or initiative is applicable (Evans, 2004; Jacoby, 2000; Ostrom, 1999). For instance, Rodrik (2004) has aptly noted that “the task of industrial policy is as much about eliciting information from the private sector on significant externalities and their remedies as it is

about implementing appropriate policies.” Rodrik’s point is based on the understanding that policymaking and institution building are not one time events but rather experimental, demanding continual information and knowledge exchange between the superiors and subordinates, between policymakers and their constituents. (Sabel 1994)

But opening up the policymaking process can easily result in capture by the existing privileged groups, which can restrict the diversity of information and interests and sow the seeds of self-dealing. To avoid these outcomes, political approaches to reform would have to include two criteria: economic and political empowerment of a variety, especially marginalized, groups and rules of governance that sustain collective-problem solving. First, research on Latin American political economy shows that even resource constrained governments can break the status quo by granting a variety of associations and cooperatives new access to public resources and policymaking. (Schneider 2004, Snyder 2001, Tendler 1997) In particular, the combination of incentives for firms to channel their demands via their collective organizations and of rules of inclusive participation in the formation of new institutions and programs can create new social and professional ties among previously isolated, even antagonistic socio-economic groups and the state. (Burt 2000; Padgett and Ansell 1993; Stark and Bruszt 1998) Such a process of recombination can allow the relevant public and private actors to access new knowledge, resources, and partners, improve mutual monitoring, and induce a greater variety of firm and policy experiments. (Cohen & Rogers, 1992; Locke, 1995; Ross Schneider, 2004; Safford, 2004)

Second, in return for membership, participants adhere to governance rules of deliberation and collective problem solving, while non-state participants may gradually increase their material contribution to the institution. Deliberation is the iterative process by which the participants jointly define objectives, evaluate results, and decide on the next measures to be

taken by the nascent institutions. (Baiocchi 2001; Fung and Wright 2001) As participants attempt to justify their interests and opinions, they increasingly reveal private information to one another. The public and private actors can then better assess one another's actions, the needed changes in services, and the terms under which they may increase their resource contributions. Access to and contributions of resources may act as incentives, but the participatory governance style provides direct feed-back loops, increases information flows, and builds confidence. Scholars from Ostrom (1999) to Culpepper (2004) to Sabel (1994; 1996a) have shown how collective problem-solving via deliberation is the substantive occasion in which previously antagonistic groups and individuals can begin to identify points of common interest, compromise, and effectively learn how to monitor one another. Moreover, research on collective problem solving at both firm and policymaking levels has been shown to enhance learning, the exchange of tacit knowledge, and the creation of new strategies and capabilities. (Helper, MacDuffie, & Sabel, 2000; MacDuffie, 1997; McEvily, 2005; Winter, 2003) As participating associations and their constituent firms see the benefits of collaboration through the institutions, they are likely to build broader strategic considerations on top of their past rent-seeking instincts. (Berk & Schneiberg, 2005; Doner, 2000; Hirst, 1994; Stark & Bruszt, 1998)

The cumulative term I give to these conditions is "participatory restructuring." I argue that one can explain the divergent paths of upgrading in Mendoza and San Juan by whether the governments pursue participatory restructuring or the contrasting depoliticization approaches to reform in the face of common crises. Participatory restructuring approaches enable societies to break out of low equilibrium paths and build new innovative capacities at both public and private levels when relevant services and programs are delivered through public-private institutions. Effective creation of these institutions occurs: 1) when reforms to resolving crises are used to

reshape the information and resource asymmetries among relevant firms and their attendant associations and cooperatives; and 2) when participation by relevant public and private actors is guided by rules of inclusive membership and of deliberation that induce collective problem solving. In contrast, depoliticization approaches attempt to insulate policymaking from society and induce change by imposing new rules based on arm's length economic incentives. This approach may foster new capital investment by firms but not upgrading, and indeed the benefits of such an approach will likely accrue to existing privileged elites.

In this view, the structure of prior social, political, and economic resources can constrain upgrading initiatives. Building new innovative capacities for upgrading begins not simply providing public goods. Rather, it begins with the government incorporating a wide variety of relevant socio-economic groups to develop together new institutional solutions to crises in such ways that focus on recombining the substantive and structural ties among these groups and the state itself. (Hirst 1994)

## **II. The Transformation of the Argentine Wine Industry and the Challenge of Upgrading**

“Can Argentina fulfill its potential and produce world-class wines? The answer is an emphatic yes.” *Wine Spectator*, March 24, 2003.

Argentina is historically one of the largest volume producers and per capita consumers of wine in the world, but production focused on low-quality wine and grapes for the domestic market. Through the 1980s, the industry suffered under hyperinflation, negative growth, and heavy regulations, such as price controls and output quotas, which led to such perverse strategies as the eradication of potentially high value grapes, like 30% of the stock of Malbec (Giuliani & Bell, 2005a; Walters, 1999). Both Mendoza and San Juan had a few large firms, several hundred small and medium size wineries, and thousands of small grape producers, which were often propped up by each province's state owned winery. The old regulations were rapidly eliminated

in 1990, as the administration of President Carlos Menem (1989-99) implemented pro-market reforms in Argentina. Price and trade liberalization, privatization, and a currency board supporting an overvalued Peso ushered in a decade of low inflation, a sudden increase in FDI, and volatile growth. Argentine manufacturing, however, shifted away from higher value-added production as it did not export much or focused on the less sophisticated Mercosur markets.<sup>4</sup>

In contrast, the Argentine wine sector, though still very dependent on domestic sales, underwent a profound transformation in the 1990s. Wine exports grew from a few million dollars in 1990 to 1.5% of the world market even at the height of Peso overvaluation to over 2% of the world market (including 3% of the highly competitive UK market) or over \$480 million in 2004, growing at an average annual rate of about 23%.<sup>5</sup>

These gains came not only from comparative costs, but especially from consistent advancements in product quality and innovation. First, Argentine vineyards gradually improved the quality of grapes (“70% of the wine’s value is in the grape”). Varieties of high enological value vastly increased their shares of vine surface area – from about 20% in 1990 to about 43% in 2001 (Cetrangolo et al., 2002). Second, wine quality improved. As Figures 1a & b show, by the mid-1990s the vast majority of export revenues came from fine wines (now 85%), as opposed to cheap table wine. Over 70% of Argentine wine exports are sold in the United States, EU, and Japan, hence sophisticated, competitive markets. By the end of the 1990s, an increased number of Argentine wines were being rated by such elite wine magazines as *Wine Spectator*, and were receiving as a group ever better scores, even when compared to better known Chilean wines (see Table 1 and Figure 2). At the same time, average export prices per bottle dramatically increased to just 30 cents less than the Chilean average. Third, with the world market for the standard “fighting four varietals” (cabernet, merlot, sauvignon blanc, and chardonnay) virtually saturated,

the Argentine firms focused on producing a greater variety of new products, such as previously undervalued varietals (e.g., Malbec, Torrontes), “redesigned” varietals from other specialized regions of the world (e.g., Tempranillo, Bonarda), and distinctive blends.<sup>6</sup>

This shift demanded new capabilities in coordinating multiple, continuous process and product experiments across a variety of organizations and micro-climates. Increased wine value begins not simply with the adoption of new hard technology and fertilizers or with market and distribution but namely with transforming the middle and upstream segments of the value chain: state-of-the-art quality control and product development running from vine planting to careful vineyard maintenance to flawless harvests to vinification and blending. Enologists work closely with agronomists and growers to introduce and experiment with new modes of growing, pruning, sanitizing, and watering with new and old varietals and clones of grapes. They then test, for instance, different types of indigenous yeasts and enzymes as well as methods of refrigeration, processing, and storage to optimally ferment the wine and elicit the grape’s flavors and aromas. Similar to co-design and co-benchmarking processes used in complex manufacturing (Helper et al., 2000; Kogut, 2000), these actors develop new systems to carefully document practices and products, share the information, and evaluate the results over time and space. Because of the variation in climates, soils, varietals and clones, experimentation is contextualized, knowledge is often tacit, and dissemination is necessarily social and interactive, often demanding a complex network of vertical and horizontal ties among firms. (Giuliani et al., 2005a; Henderson, Pagani, & Cool, 2004; Roberts & Ingram, 2002; Walters, 1999) Moreover, upgrading is highly time-consuming – any new vine takes 2-3 years to yield testable results and any quality and taste modification to grape growing take 18-24 months.

This gradual, multiparty process of upgrading in Argentina has occurred in the 1990s across a wide variety of grape growing conditions, varieties, and firm strategies. Mendoza and San Juan have about 100 micro-climates with the potential to support at least 12 red and white varieties of medium and high value (Cetrangolo et al 2002). Grape production remained rather decentralized across relatively small plots, even after some consolidation and a significant decline in the number of vineyards and in total vineyard surface area in the 1980s and 1990s.<sup>7</sup> By 2001, Mendoza still had over 16,000 vineyards totaling about 140,000 hectares and San Juan had over 6000 vineyards totaling about 50,000 hectares. According to the agricultural survey of the Mendoza for 2003, the largest 18 vineyard owners controlled only 5% of surface area dedicated to grape growing for wine and about 1100 owners controlled about 50%. Indeed, despite the asset specific nature of grape development, subcontracting has actually increased from about 50% of a winery's grape needs in the 1980s to almost 70% by 2000. (Cetrangolo et al., 2002) In contrast, in Chile the fighting four varieties historically accounted for about half of the vineyards, and much of the upgrading and exports in the 1980s was dominated by less than a dozen large, vertically integrated firms.<sup>8</sup>

The relatively high variety of firm strategies and organizational forms is further reflected at the level of the winery.<sup>9</sup> During the 1990s, the number of registered and active wineries in the Mendoza and San Juan dropped by about 35% and since 2000 gradually rose. Today there are 683 active wineries in Mendoza and 169 in San Juan. As of 2003, there were about 200 firms that export wine, with the top five firms accounting for about 40% of total wine export sales and the top 20 for about 70%. No firms are publicly listed, most are small and medium sized family firms and partnerships, about 10% are cooperatives, and very few are controlled by Argentine business groups or foreign investors.<sup>10</sup> Indeed, foreign investors control less than half of the 30



top exporters, and though estimates vary greatly, it appears that FDI accounts for about half of the \$1-1.5 billion invested in the wine industry in Argentina between 1991 and 2003, with most coming after 1996. The seven companies that account for 80% of cheap table wine have also diversified in economically priced fine wine. Two are prominent cooperatives, which have 20-35 member firms and draw on a few thousand small grape suppliers. The approximately 50 premium wineries that account for about 45% of fine wine volume and 70% of fine wine exports had previously focused on cheap table wine but now have products that fetch a US retail price per bottle ranging from \$5 to \$40. They have their own vineyards but also together depend on about 3000 grape suppliers. The number of grape suppliers used per winery varies widely, from boutique wineries with about 10 specialized suppliers each to the largest diversified wineries with about 200-300 non-exclusive suppliers each.

These advances in wine and grape upgrading have, however, been much more profound and broad based in Mendoza than in San Juan, despite the similar climatic conditions and soil qualities (Cetrangolo et al. 2002), and even the greater importance of winemaking to the latter's economy. Table 2a shows the relevant wine and grape production and export data. For instance, Mendoza accounts for a highly disproportional share of Argentina's wine exports. As of 2002, 65% of the Mendoza harvest and 26% of the San Juan harvest were classified as comprised of high and medium quality grapes. Moreover, upgrading has spread to large zones of Mendoza, like the *Zona Este* (about 50% of Mendoza's vine surface area), that were historically considered backward and capable of producing only poor quality wines and grapes. The surface area share of high and medium enological value grapes/vines in the *Zona Este* vineyards increased to about 26% of its total by 1998 and to over 37% by 2001. By 2003, about 55% of *Zona Este* wineries

had modern quality control systems and also accounted for almost a third of those exporting from Mendoza.<sup>11</sup>

### **III. Mendoza vs. San Juan – Inherited Resources as Indeterminate to Upgrading**

Mendoza appears to have promoted broad-based upgrading often by taking advantage of and not simply being paralyzed by a wide variety of firms, interests, micro-climates, and products. But how can one explain its ability to initiate and sustain the attendant coordination and knowledge creation in the 1990s, when it could not previously and while San Juan stalled and became such a laggard? There are three main explanations that focus on the importance of legal and inherited socio-economic resources. (See also Table 2b.)

One could argue that Mendoza had better legal institutions. However, both provinces are subject to the same national system of commercial law and property rights, which are not strong by international standards and which appear to be at times less secure in Mendoza than in San Juan.<sup>12</sup> The wine industry has been subject to largely the same national and regional regulatory laws, including a 1993 agreement by the two provinces on regulating the volatility of grape prices. Contracts are also rarely used among wineries and grape growers in both provinces (Cetrangolo et. al. 2002).

A second explanation would be that Mendoza entered the 1990s with a greater stock of human and knowledge resources, such as well trained and connected industry elites (Cohen & Levinthal, 1990; Ziegler, 1995). Mendoza did not have a relatively large number of licensed enologists, and the one program in the region (Facultad de Enologia Don Bosco in Mendoza) annually graduated no more than five enologists who were employed in both provinces. (Walters 1999) But many of the first upgrading initiatives in Mendoza came from firms in the best climatic zone (*Zona Primera*) that were led by Argentines with foreign education and

contacts with well known foreign consultants. While knowledgeable international equipment and chemical suppliers flooded both provinces after liberalization in 1989-90, such firms as the French owned Chandon and the domestically owned Catena, Trapiche, and Arizu began the reorganization of wine production, vineyard maintenance, and bottling in accordance with world standards. Moreover, since relatively few firms in Mendoza had the resources to hire globe trotting consultants, these elite firms of the *Zona Primera* became sources of knowledge as they developed systems of incentives and personalized technical assistance to extend process and product upgrading to their grape suppliers. (Foster 1995, Walters 1999, pp. 111-114)

But the diffusion and application of “best practices” was hampered not only because of the experimental nature of upgrading but also because of the variation in climates, soils, irrigation, and pests. What may work in one part of the world, or one part of a province, may not be applicable in another place, even for the same varietal or clone. For instance, in the mid and late 1990s, several leading winemakers advised many of their suppliers to incorporate new water reduction grape growing methods from abroad. These had devastating consequences, since the method under local climate conditions “cooked” the grapes. The growers bore almost all of the losses themselves.<sup>13</sup> Several firms also acquired large amounts of debilitating debt in the 1990s because of overly ambitious technology acquisitions based on advice and cheap financing of the international equipment suppliers. (Walters 1999) In turn, diversity combined with uncertainty can impede knowledge diffusion and coordination via markets. As attempts at quick imitation lead to dead-ends and multiple failures, nascent collaboration across firms can easily die on the vine, so to speak. (Evans, 2004; Stark, 2001)

A third set of explanations would argue that Mendoza had already a superior stock and structure of social capital and associationalism that could mediate complex coordination under

uncertainty. However, the conventional reasoning falls short. First, the stock argument appears indeterminate, since, as shown in Table 2b, both provinces have about the same number per 1000 inhabitants and indeed San Juan had more cooperatives in agriculture (slightly less in general). Second, it is unclear in these cases whether the presence of a strong encompassing business association necessarily improves policy coordination and coherence (Ross Schneider, 2004). San Juan and Mendoza have similar structures of business interests, with several sectoral and peak-level business associations.<sup>14</sup> They also had similar histories through the 1980s, with their winemaker associations and peak-level associations battling for access to their respective provincial governments to play a zero-sum game over price supports and subsidies. (Paladino & Jauregui, 2001; Rofman, 1999)

This is not to say that the social fabric and structure of associations are unimportant variables. Existing social and professional experiences can be the basis of new forms of concerted, collective action (McDermott, 2002a; Sabel, 1996b; Stark, 1996). For instance, the elite firms of Mendoza's *Primera Zona*, including those mentioned above, began organizing two main voluntary forms of collective learning based on past professional and local ties. First, elite firms created a few learning groups (CREA), each of which included 8-10 firms that shared the cost of a consultant and met regularly to share tacit knowledge and help solve common problems of upgrading vineyards.<sup>15</sup> Second, they also began organizing annual wine and label evaluation competitions, in which wineries presented their products for review and prizes. (Paladino et al., 2001; Walters, 1999) The most noteworthy was EVICO, the wine evaluation event created in 1990 by the association for enologists (CLEIF), the association of the most prestigious wineries (Bodegas de Argentina AC), and the Facultad de Enologia Don Bosco. A panel of widely respected enologists benchmarked the year's harvest and the wines as well as provided

constructive advice on improving the wines during and after processing. In the late 1990s, winemakers and their associations from the historically more backward and less climatic advantageous zones of Mendoza and San Juan began organizing similar events.<sup>16</sup> These events helped spur debates about the direction of the industry and accelerate the sharing of tacit knowledge, as actors from firms, associations, and educational and public institutions began to see the benefits of gradual collaboration and the suspension of their old institutional identities. As Walters notes (1999, p. 152), “[They] helped shift the focus of attention of former rent-seeking wine business associations, now far more involved in the discussion of quality and production issues.”

Nonetheless, these experiences also demonstrated their limitations in bridging the social and economic gaps between sub-regions of Mendoza. Regional discrimination and antagonisms limited the interaction of wineries and grape growers from the different *Zonas*, and thus the creation and diffusion of new knowledge. EVICO and the Grupos CREA were largely limited to the most elite wineries of the *Primera Zona* that viewed the other *Zonas* as incapable producing fine varieties because of their apparent substandard economic, educational, and climate conditions. At the same time, winemakers of these *Zonas* saw little to gain from those who always criticized their products and from discussions not focused on improving the kind of intermediate and low enological quality grapes that composed their wine supply chains. (Walters 1999, p.151-152) As a result, few took little notice of the efforts of innovators such as La Agricola’s Rodolfo Montenegro from the *Zona Este*. Rather than replacing old systems with newly imported ones, he adapted the “antiquated” the high-yield orthogonal vine training systems (*parrales*) to produce high and intermediate quality grapes at higher than average yields, in turn innovating in both quality and cost. As Montenegro noted in the mid-1990s, “Most of the

elite firms and their enologists in Mendoza are still focused too much on the *Primer Zona*, ignoring the productive potential of the areas like Eastern Mendoza. There is still a lot of arrogance” (Walters1999, p. 123).

In many ways, this dual nature of social structure – being both facilitating and exclusionary, reflects the research of Locke (1994), Cohen and Rogers (1992), Padgett (2001) Safford (2004), and Schneider (2004) on other regions and industries. The need for ever more specific knowledge and skills, coupled with traditional rivalries, identities, and resource inequalities, can create barriers to the processes of aggregation and joint action that are vital for a broader sustainable base of innovation. If more encompassing structures are not historically or organically given, then government could help create them. (Ostrom 1999; Schneider 2004)

#### **IV. Politics and the Emergence of Public-Private Institutions**

Notice that the challenge of coordination and knowledge diffusion becomes a socio-political problem beyond simply redirecting public spending. Creating institutional resources that help coordinate decentralized experiments and develop upgrading capabilities is simultaneous to reshaping the relative power and relationships among government agencies and socio-economic groups or associations. However, it may not be sufficient to rely on inherited political incentives to explain how these institutions emerged in the 1990s in Mendoza and not in San Juan. Some might argue that an executive with greater expectations of political security would invest in building new institutions, as took place in Mendoza. But San Juan’s governor can be re-elected, whereas Mendoza’s can not. Political competition may be indeterminate (Remmer & Wibbels, 2000) as San Juan had closer gubernatorial elections than Mendoza. Moreover, the Peronist party dominated the executive and legislative branches of both provinces in the late 1980s and early 1990s.

A more fruitful comparative analysis would focus on how the differences in the political approaches of Mendoza and San Juan to the crises of the late 1980s shaped both the creation and effectiveness of institutions supportive of upgrading. This section briefly shows how San Juan's "depoliticization" approach induced new investment but impeded upgrading. It then details how Mendoza's "participatory restructuring" approach resulted in the gradual construction of public-private institutions that helped firms improve their skills and knowledge and aided the government and the relevant associations form new lines of communication and coordination.

#### **IVa. Diverging Political Approaches to Reform in San Juan and Mendoza**

##### *San Juan*

San Juan's approach toward the wine industry was based largely on the use of arm's-length economic incentives implemented by a government with little consultation of major socio-economic groups. Three major policy areas reveal this pattern. First, by the mid-1980s the provincial state owned winery, Covic, which supported thousands of small grape producers, was insolvent. The government quickly elected to sell it to local investors. The resulting company soon collapsed, and the government was forced to take it over and liquidate it.

Second, San Juan utilized a federally supported tax incentive program for small, poorer provinces as the principal policy to improve agribusiness, especially for the wine sector. San Juan joined three other provinces (not including Mendoza) in this program in 1983. By 1990 it had gained about 290 projects in manufacturing and agriculture at a fiscal cost of about \$1.2 billion. After the program was revised to focus on agriculture and tourism projects, San Juan again elected to participate actively. In the 1990s, it gained over \$1 billion in direct investment from over 400 projects, about half of which were fully or partially dedicated to wine and grape production. Some estimate that these programs cost Mendoza \$100-200 million per year in

production output from diverted investments.<sup>17</sup> Approximately 193 firms were committed to investing into the industry, including upgrading over 14,000 hectares, about half of which have been for the development of grapes for fine wine (Allub, 1996; Borsani, 2001).

As argued by both independent researchers (Allub, 1996; Rofman, 1999) as well as the Ministry of Economy of San Juan itself (Gobierno de San Juan, 2004), reliance on this program as the framework for wine sector restructuring brought little upgrading and increasingly antagonized and fragmented the stakeholder groups of the value chain. The main beneficiaries were large firms with rather short-term interests that had limited knowledge or capacities in undertaking the time-consuming experiments for transforming vineyards and developing a broad base of capable grape suppliers. Small grape producers and wineries and their respective trade associations grew increasingly disillusioned with the policy, the government, and the large wineries (Rofman 1999). At the same time, there were no few helpful support programs or institutions.

Third, San Juan failed several times to build new public-private institutions to help regulate and promote the development of the wine sector. Following damaging volatility of grape prices, the San Juan government signed but failed to enact an agreement in 1993-94 with Mendoza to build a new institution to help stabilize grape prizes and to share new policies toward the wine sector. On three different occasions between 1989 and 1999, San Juan also attempted but failed to create a new provincial export agency. On the one hand, the government was reluctant to share policy-making and resources with other actors, be they from Mendoza or provincial sectoral associations. On the other hand, the government was satisfied that the existing regime of tax incentives provided sufficient support for inducing investment.

*Mendoza*



In contrast, the policy approach of Mendoza was based on empowering a wide variety of public and private actors to actively participate in resolving the crisis at hand and building new institutions for the broader restructuring of the agricultural sectors. The first step came in 1987, when newly elected governor, Jose Octavio Bordon, and his allies confronted the collapse of the Mendoza state-owned winery, Giol, which was losing over \$500,000 per month with a debt of over \$35 million. Giol produced over 10% of the nation's wine and processed over 15% of the provinces grapes from more than 4000 small and medium sized grape suppliers. The Bordon administration was wary of the poor privatization of Cavic in San Juan and was equally concerned about the unrest that restructuring Giol could set off among large business interests, labor unions, and the communities of its thousands of grape suppliers. Hence, the administration aimed to transform Giol into a federation of cooperatives (Fecovita) as a way to initiate broader industry restructuring and forge compromises among the warring factions.

The government and the new Giol director, Eduardo Sancho (the former head of the Association of Wine Cooperatives) led a drive to incorporate stakeholders into the process while improving their organizational resources. The new Giol board included three members appointed by the governor, three elected "by the people", and one representing labor unions. (Paladino and Morales 1994a) The government and Giol organized a large publicity and information dissemination campaign, regularly consulted with the labor unions and the trade associations, and organized over 500 community meetings that included representatives from all sides – the provincial and municipal governments, labor unions, civic associations, and trade associations. At the same time, government and Giol officials encouraged small farmers and winemakers to organize themselves into cooperatives by offering new credit programs, technical and legal advice, the leasing of Giol wineries to coops at special rates, and purchase guarantees

as a transition policy. By the end of 1988, nine new cooperative were formed, and within a few years the new Fecovita had 25 new cooperatives that incorporated over 1500 of the original 4000 grape suppliers of Giol. (Paladino and Morales 1994a,b; Juri 1990)

Upgrading Fecovita and its members has been gradual. Most the initial upgrading, as was typical for most firms, focused on new technology rather than linking new product standards with new production practices. (Walters 1999, p. 137-139) But through regular review by its members and outside auditors, elected management adopted increasingly stringent operational and product standards as it diversified its product portfolio, modernized systems, and revamped its marketing. Fecovita and its member cooperatives gradually lowered minimum purchase-supply agreements, allowing all parties also to use the market as an additional disciplining device. Upgrading support came from on-time payments at preferential prices and access to Fecovita's pooled resources and services, especially its projects in R&D and training with new institutions that would emerge in the 1990s. Fecovita helped members gain access to credit, markets, inputs, training and knowledge at low cost through both its combined bargaining power and its alliances with banks, domestic and international distributors, as well as public-private research and extension organizations in Mendoza, such as INTA, the Instituto Desarrollo Rural (IDR), and the agronomy faculty of the Universidad Nacional de Cuyo (Amendola, 2003).

The Fecovita experiment had three main impacts on Mendoza. First, Fecovita soon became profitable, as improvements from grape growing to label management led it to expand both domestically and internationally in table and fine wine.<sup>18</sup> Second, the Fecovita experiment enhanced the diversity of wine and grape producers by reviving small producers and cooperatives. During the 1990s, the number of cooperatives in the wine sector grew by about

30% to 50, which have over 4500 grape producers as members or dedicated suppliers. About 35% of the output of Mendoza cooperatives is focused on premium and super-premium wines.<sup>19</sup>

Third, the Fecovita experiment appears to have launched effort by the government to create new policies and institutions with socioeconomic partners. For instance, according to federal documents detailing the programs and institutions related to agriculture in every province, Mendoza developed over 75 programs and policies (from credits, to insurance to R&D, to health standards and pest prevention) in the 1990s that have directly and indirectly assisted firms in the wine sector.<sup>20</sup> Virtually all programs are jointly developed and administered by partnerships between the government and approximately 50 non-governmental organizations. In contrast, San Juan's relatively few support programs mostly come from the federal government and are managed mainly by a government office alone. This change in policymaking and implementation may also partially explain why, in both absolute and per capita terms, Mendoza has many more civic organizations than in San Juan that have inclusive membership, have both internal and external funding sources, and produce non-exclusive benefits. Scholars have shown that such organizational traits tend to improve information flows, professional ties, and policy responsiveness.<sup>21</sup>

In short, the richness and effectiveness of Mendoza's policy portfolio toward the wine industry is not a product of simply inherited associationalism or state capacities. Rather, it should be seen as part of the gradual construction of a dense public-private network of organizations that are pooling information and resources while improving their collective capacities to problem solve. The Fecovita experience began a political strategy by Bordon and his allies (who led two more successive administrations) to gain the loyalty of small holders and renovate the relationships among the government and the wide variety business associations. I

now turn to a more detailed analysis of how this approach to creating the most prominent public-private institutions in Mendoza in the 1990s provided governance mechanisms that enhanced the upgrading capabilities for both firms and the government.

#### **IVb. Experimenting with Public-Private Organizations**

Mendoza's approach to reform provided two mechanisms that linked the process of institution-building with the ability of the institutions to help solve the coordination and knowledge diffusion problems discussed earlier. First, in confronting new strategic challenges, the government convened a variety of relevant associations to generate and jointly govern an institutional solution, for which it would provide much of the vital resources. Second, representatives of the participating bodies would supervise institutional oversight and progressively engage in collective problem solving by regularly and jointly defining key constraints they faced, evaluating the outcomes of proposed solutions, and deciding on corrective measures or the next policy measures. These two mechanisms helped: a) reshape the relationships among the government, the participating associations, their firms; b) the institutions improve knowledge and skills creation; and c) the public and private actors develop and implement new collective strategies.

##### *Embedding the government and recombining public-private ties*

As Table 3 reveals, the most prominent institutions that contributed to upgrading in the wine sector in Mendoza were mainly charged with providing a variety "supply-side" services and resources to firms in a variety of sectors. These institutions cut across the public and private domains in their membership, governance, funding, and missions. The founding and restructuring of the institutions emerged mainly from the government convening relevant public and private actors to confront a new shock or strategic challenge. In turn, a variety of public

entities and sectoral associations jointly became responsible for the governance and resource support of the institutions. For instance, in 1991 the federal government greatly decentralized and reduced the budgets of INTA's regional centers.<sup>22</sup> With the aim of increasing and diversifying its sources of revenues and services, INTA Mendoza gradually expanded its sub-regional centers and required that the new advisory councils and affiliated NGOs ("cooperadoras") be composed of representatives from relevant government agencies (provincial and municipal), associations, firms, and educational institutions. In 1992-93, Mendoza and San Juan experienced destructive winters that caused great volatility in grape prices and left thousands of SME producers devastated. This crisis resulted in two major initiatives. At the end of 1993, the two provinces signed agreements to help stabilize the wine and grape supplier markets and develop support policies. Only Mendoza implemented the new regulations and institutions. In 1994, the government and the major wine and grape producers associations created the Fondo Vitivinicola to oversee the new regulatory regime and use the proceeds of a new penalty for non-compliance to promote the wine industry and wine consumption.<sup>23</sup> In 1993-94, the Mendoza government also launched a series of policies to help protect farmers from weather damage and aid them in vineyard restructuring. The main institutional vehicle was the FTC, which coordinated with provincial banks and had regional advisory councils comprised of relevant municipalities. IDR and ProMendoza grew out a need for services that INTA Mendoza and the federal export agency were not providing. But because of a new federal law restricting provincial budgets, the Mendoza government had the associations take on part of responsibilities and resource demands.

The public-private nature of the formation and organization of these institutions overtime allowed each to become more embedded with one another and the associations of Mendoza and

act as bridges between the public and private domains as well as between the relevant associations. Figures 3a and 3b depict this process in a simplified form. Figure 3a shows the sparseness of ties in 1989 among the government and firms and associations of different parts of the value chain and zones. Figure 3b shows how by the end of the 1990s the new institutions tied these different actors together. By comparison, San Juan in 1990 and 2000 would look like the structure in Figure 3a. (The appendix shows the resulting public-private network in more complex form, using membership and board data of the institutions and the associations. The bridging role of the new institutions is revealed in their relatively high “betweenness” scores. (Burt, 2001) Note also how the creation of the new institutions improves structural position of several associations.)

This model of organization was gradually replicated at more micro levels. For instance, the Fondo Vitivinícola, INTA, IDR, and ProMendoza began opening offices in different zones with local partners, sitting on one another’s boards, and actively participating in such events as the wine evaluation committees mentioned in Section III. The latter three institutions also began developing joint training and research programs and increasingly used network methods of training and R&D. That is, these institutions provided services to groups of firms, forcing them to undertake joint projects in field experiments and collective problem solving.

The key innovation of these models was not simply providing public goods and services, but changing the socio-political landscape that could improve socio-economic outcomes. First, by bringing in the different associations from inception, the government encouraged a greater sense of ownership for the new initiatives. Second, the multivalent (and often multisectoral) nature of institutions allowed the participants to pool and access new resources and information that each could not have individually, especially for previously marginalized associations of

producers from more backward zones of Mendoza. (Padgett and Ansell 1993) Third, the institutions provided new social ties and channels of communication not only between the government and the associations but also between the associations themselves. Firms and associations from different zones and also different sectors were now meeting regularly with one another.

*Participatory governance for institutional and firm upgrading*

The new ties and institutions would be void of content without additional triggers. Besides gaining the rights of representation and often of electing executive boards, the participating members of each institution had to provide resources. While the government often supplied the bulk of at least initial resources, the other members were obligated to provide complementary resources, if not financing then personnel, facilities, and information. In turn, as access to new resources attracted, e.g., associations, to the table, each increasingly had a stake to ensure its own contributions were being well used. Moreover, participants were charged with regularly defining the institution's objectives and reviewing the results of actions taken. In defining constraints and benchmarks, the participants drew on their own experiences and contacts, from the most advanced to the most backward. In evaluating results, participants used not only benchmarks and comparisons with other relevant institutions, but also the feedback from their own constituents. Participants could voice their proposals and grievances directly through the board and indirectly to the government, which was continually interested in building its new cross-sectoral and cross-regional coalition.

The combination of rules of inclusion and participatory governance brought forth both collective problem solving and mutual monitoring that pushed the institutions to gradually provide a scale and scope of services that no association could do alone and most provinces

lacked. For instance, INTA Mendoza and later IDR pioneered new information resources, such as detailed mappings of the micro-climates for grapes and other agricultural products. They and ProMendoza also developed data bases on best practices (internationally and sub-regionally), harvests, and product markets, training programs for different sectors, zones, and segments of the value chain, as well as teams of experienced consultants. By the end of the 1990s, Mendoza had amassed an enviable set of upgrading resources. There were seven times more INTA employees working on viticulture issues full time in Mendoza than in San Juan, a figure disproportional to the differences in the size of the sectors or the number of EEAs. ProMendoza had helped almost 1000 firms from various sectors participate in international trade fairs, and maintained an annual budget of about \$2 million, comparable to the budget of the Argentine national export promotion agency, (ExportAr). The FTC had provided credit supports of over \$50 million dollars for about 5000 firms. In contrast, Argentina historically lacked SME financing programs and did not even have an SME support agency until 1998 (McDermott 2000).

These constellations of resources came in part from the ability of the institutions to access and recombine the contributions of their members. Consulting and R&D contracts with the most elite firms brought revenue streams that could subsidize training and research programs for more backward firms. Standards, practices, and experiences from one zone or one sector could be diffused and reengineered for others. But upgrading through scope, adaptation, and diffusion was also the gradual by-product of the members to monitor one another and push the institutions to take greater concern for their own needs.

For instance, in the early 1990s INTA launched a national program, Cambio Rural (CR), which mimicked the network learning model that the elite firms in the *Primera Zona* had created with their Grupos CREA. CR was subsidized and adapted by INTA for producers from more



backward regions. But CR in Mendoza had limited initial success. Drawing on feedback from the CR participants and its council members, INTA Mendoza adapted the program by reorganizing the composition of the learning groups and customizing methods to different regions. Around the same time, when the federal government elected not to renew CR, the Mendoza government stepped in to cover some of the costs. By the end of the 1990s, CR in Mendoza had some of the best participation and cost-benefit rates in the country and far better than in San Juan.<sup>24</sup> (Cheppi, 2000; Lattuada, 2000) INTA Mendoza's dependency on multiple constituencies both forced and enabled it to gradually adapt programs and build new joint projects with firms and other institutions (e.g., FECOVITA, IDR, the universities). Its testing labs were being used with the elite firms as well as cooperatives; it began documenting and teaching practices from the most advanced form of computer monitored drip-watering to Montenegro's innovative use of the orthogonal vine training systems, mentioned in Section III. In turn, INTA in Mendoza was able to overcome the historical criticism of the national INTA system – that its bureaucratic lethargy made its knowledge base and technology too backward for the advanced firms and too advanced for the small, weak producers. (Casaburi 1999)

ProMendoza, IDR, the FTC, and the Fondo Vitivinicola also soon became the focus of criticism that they were too focused on the needs of only a few constituents. In response, the government opened a network of regional offices in the late 1990s to house local branches of IDR, ProMendoza, the FTC, ISCAMEN (the phytosanitary agency), and the provincial statistical office. The institutions also worked on expanding their services. ProMendoza built new data bases and promotional activities to include over 40 foreign markets for both agricultural and manufacturing products. It also organized annual tours for foreign journalists to visit winemakers directly from a variety of zones, not just the better-known firms. IDR began to

collaborate with INTA, INV (the national wine regulatory agency), and relevant associations to deliver timely information on international and domestic harvests and market prices. IDR and INTA signed agreements with ISCAMEN for joint projects on data collection in the more backward zones and develop new food safety and pest prevention regulations that better addressed Mendoza's diversity of micro-climates and agricultural products. The FTC reorganized itself to work more closely with local banks and relevant associations to reduce approval time, codify new forms of loan security, and help finance a greater number of small firms from more backward zones for grape harvests and vineyard conversion. (Salvarredi, 2001)

The presence of multiple, related institutions also allowed participants to change alliances and force competition. For instance, in 2001, Bodegas de Argentina, the association of the largest and most refined wineries, withdrew its membership from the Fondo de Vitivinicola after continued complaints with the Fondo's management and promotional campaigns. In turn, Bodegas created its own foundation, Wines of Argentina, to develop and implement international marketing campaigns for Argentine wine, often in collaboration with ProMendoza. The Fondo has since revamped its domestic marketing campaign.

As the different forms of multiparty governance brought pressure and changes to the institutions, the institutions themselves were forced to bring pressure upon their clients. That is, institutions like ProMendoza, IDR, and INTA began to use international and locally developed standards of products and processes not only to benchmark clients but also to restrict their access to certain programs. For instance, ProMendoza realized that unprepared Mendoza firms were soiling the reputation of commercial delegations as well as wasting limited resources. In turn, ProMendoza developed a system to evaluate whether a firm joining a trade delegation has the capabilities to communicate specific commercial, product, and process information to relevant

international buyers and journalists. Before allowing firms to access more sophisticated R&D and extension programs, INTA performs systematic evaluations of a firm's processes and products and then places the firm in its relevant cohort.

This use of standards and diagnostics helps upgrading by exposing the competitive weaknesses in client firms. But when combined with the feedback mechanisms, it also has revealed weaknesses in the support system of the institutions themselves. That is, the institutions and the participating associations began to learn where training was needed to help firms overcome the diagnosed constraints. As a result, IDR and ProMendoza expanded services from data collection to training seminars and benchmarking distinct parts of the firm's value chain. They also amassed information on training resources at other institutions that they went beyond their own capacities. INTA as well developed multi-stage extension services that gradually exposed firms to increasingly complex standards and technologies.

*Overlapping ties and deliberative forums for improving public policy and collective action*

The overlapping ties and participatory governance process in one institutional or policy domain equally led to collective action solutions that gave rise to institutional changes in other domains. On the one hand, improvements in older, more archaic institutions emerged from their participation in new advisory councils and upgrading projects. For instance, by the late 1990s, the two major Mendoza universities, Universidad Nacional de Cuyo (UNC) and Universidad Maza, had new or vastly expanded degree programs in enology and viticulture; UNC was also for the first time undertaking applied agronomy research with firms.<sup>25</sup> These changes in part grew out of responding to specific demands and market information revealed via the universities' participation in and joint research projects with INTA and IDR. ISCAMEN, the Mendoza government's food safety regulator, also sits on the boards of INTA and IDR. It created new

crop protection and anti-pest prevention systems from joint data collection and field testing projects with INTA and IDR.

On the other hand, the institutionalization of collective problem solving and evaluation gradually turned project and council meetings into deliberative forums, in which the participants increasingly identified common strategic needs in other functional areas of upgrading. The creation of IDR and ProMendoza emerged in part from ongoing debates in INTA Mendoza and the Fondo Vitvinicola about whether these institutions could handle the increasingly diverse demands from firms and their associations. At the same time, an agreement between the provincial and federal governments on budget reforms restricted the hiring of new public employees. What became IDR was actually first a small team of agronomists and economists financed via a contract between the Mendoza Ministry of Economy and INTA Mendoza. ProMendoza started as a joint project between the Ministry and the Bolsa de Comercio to evaluate export opportunities for provincial firms. As the teams passed their first hurdles, the institutions were formalized and other relevant associations were brought on board. A similar process spawned the creation of ITU, a public-private university offering a three year technical degree in management, and of IDIT, a public-private institution for applied operations research in engineering and manufacturing.<sup>26</sup>

The different governing councils also became repositories of grievances and forums of negotiations among representatives of the government and the diverse interest groups over core, controversial regulatory issues. Laws on the protection of contracting rights for wine and grape suppliers, on the securitization of the grape market, on government subsidized hazard insurance for small producers, and on the aforementioned 1993 penalties to limit volatility in the wholesale wine and grape markets divided firms bitterly, especially those from more backward and more

advanced zones. In the 1980s, the government would have either ignored such disputes or delivered patronage to the most powerful and well organized group. But in the 1990s, the participatory restructuring approach had not only improved the balance of power between relevant associations but also had provided them with a greater variety and frequency of deliberative forums. Regular and incremental changes in the above laws were realized (IDR 2001) because the public and private participants were learning how to monitor one another in other areas, had established multiple lines of communication, were increasingly well informed about market trends and one another's positions, and found that compromises in one sphere could lead to rewards in others over time.

The constellation of overlapping ties and forums for structured deliberations would aid the associations and the government to formulate more complex collective actions and policy changes that reached beyond the province. For instance, the INV (Instituto Nacional de Vitivinicola) is the federal agency regulating the wine industry and was historically a symbol of government incompetence and patronage. The Mendozans led negotiations with the federal government in 1995-96 to create a new Interprovincial Consultative Council that included seven representatives of the wine and mosto (a natural sweetener from grapes) value chain and effectively decentralized its decision-making process (Azpiazu & Basualdo, 2003). By embedding the INV more deeply into the region (including bringing INV representatives onto other advisory councils) and carefully using its collective political capital, the Mendoza actors were able to secure improvements in the INV's technical capabilities and even expand its mission to include such issues as certifying DOC standards. Similarly, the Mendoza government and ProMendoza have been active in shaping Argentine trade negotiations with the Mercosur

and the EU and has taken the lead to appoint Argentina's representatives on specific international bodies that impact trade in wine, mosto, and grapes.

These experiences in identifying common constraints and formulating joint strategic responses laid the groundwork for the effort to replicate the model on a national scale via the creation of the Ley Pevi and its governing body, COVIAR, which were mentioned in the beginning of this article. As Mendoza gained a foothold in the key world wine markets, the institutional participants increasingly realized that their sustained international competitiveness demanded upgrading and resources that went beyond their own capacities.<sup>27</sup> These discussions converged in 2000 at a series of meetings of the advisory council of the EEA Mendoza that decided to initiate a plan develop a 20 year strategy. The council formed executive and technical teams composed of members of its representative institutions and associations as well as other key actors not on the council. With the Fondo Vitvinicola covering most of the overhead costs, the technical team benchmarked Argentine firms, products and policies against those of such countries as Chile and Australia, and the executive team began a campaign to gain support among political and industry leaders within and outside of Mendoza. Similar to the Fecovita experiment, the teams organized a series of workshops over an 18 month period in the winemaking regions of Argentina to solicit input from, explain their strategy to, and build a broad coalition with relevant political and professional groups.

The Ley Pevi had three fundamental provisions. First, it mapped out a national policy to promote export objectives via an expanded form of the Mendoza model across the relevant provinces – forging a network of public and private institutions to improve the capacity and strategic use of human, material, and knowledge resources. Second, in order to enhance autonomy, avoid backlashes from other interest groups, and increase the incentives of

stakeholders, the additional funding would come from a new tax on the sales of wine products. Third, the Ley Pevi and all its components would be governed by a new non-profit, non-state entity, COVIAR, whose 12 member executive and advisory boards would be composed, again in the Mendoza style, by representatives of the federal and relevant provincial governments as well as the leading wine and grape producer associations.

### **Concluding Remarks**

This article has attempted to offer a political constructionist view of the emergence of a society's innovative capacities to upgrade by comparing the evolution of the wine industries in San Juan and Mendoza, namely the latter's ability pioneer upgrading in the production of fine wine exports during the 1990s. The comparison's cross-sectional and longitudinal dimensions were able to control and thus reveal the limited individual explanatory power of such *a priori* structural factors as natural resource, knowledge, and economic endowments, social capital, commercial law, and provincial electoral institutions. Rather, the article has argued that the different restructuring paths of San Juan and Mendoza is largely a product of the different political approaches to reform the provinces chose to confront a shared economic crisis in the late 1980s. San Juan's weak upgrading in the 1990s is rooted in its "depoliticization approach" that emphasized the use of arm's length economic incentives designed and imposed on the market by a government relatively insulated from society. In contrast, Mendoza's "participatory restructuring approach" helped improve upgrading capabilities and reshape the relationships among the government and relevant sectoral associations through the construction of new public-private institutions. This process rested on two key mechanisms: 1) in confronting new strategic challenges, the government convened and empowered a variety of relevant associations to generate and jointly govern an institutional solution; 2) representatives of the participating bodies

would supervise institutional oversight and progressively engage in collective problem solving by regularly and jointly defining key constraints they faced, evaluating the outcomes of proposed solutions, and deciding on corrective measures or the next policy measures.

As with many complex industries, creating the innovative capacities for the wine industry is a dual problem of breaking old practices as well as getting the government and the diverse, often conflicting groups in the value chain to collaborate in previously unimagined ways. Some Mendoza firms and their attendant business associations did recognize that upgrading cut across firm boundaries, and initially responded with efforts to build new supply networks and new forums for social learning. As much as these efforts helped, they were also self-limiting. The very diversity of skills and experience that can accelerate new knowledge creation can also present barriers to collaboration. Decentralized, voluntaristic attempts at coordination and collaboration can lead to fragmentation of an industry, especially when diversity is coupled with a history of distrust, false starts, regional biases as well as resource and skill inequalities.

The participatory restructuring approach helped Mendoza gradually overcome these barriers and sustain broad base improvements at both the firm and institutional levels in three important ways. First, the inclusionary principles of policymaking and institutional construction provided economic and political incentives for previously dispersed actors to come to the table and potentially forge new social and economic ties. Second, the focus on collective problem solving in governance and services through iterative deliberations about priorities and the evaluation of remedies allowed the public and private participants to begin to share knowledge and resources, to learn how to monitor one another, and collaborate in new ways. Third, the participants were able to learn how to improve both government policy and firm practices as well identify new areas of common problems for subsequent institutional innovations.



My emphasis on the determining impact of different political approaches is an attempt to contribute to the growing attention scholars of economic development and institutional change are placing on the role of process variables.<sup>28</sup> For instance, the aforementioned rules of inclusion and participatory governance are proposed conditions under which government can experiment with new industrial policies (Rodrik 2004), institutions will be horizontally embedded (Montero 2003), and public-private institutions will facilitate joint action for the creation of new innovative capacities (Schmitz 2004, Giuliani et al. 2005, Perez-Aleman 2005). They are also the mechanisms that help specify how the recombination of existing social and political resources can inform the substance and sustainability of institutional change. (Thelen 2003; Hirst 1994)

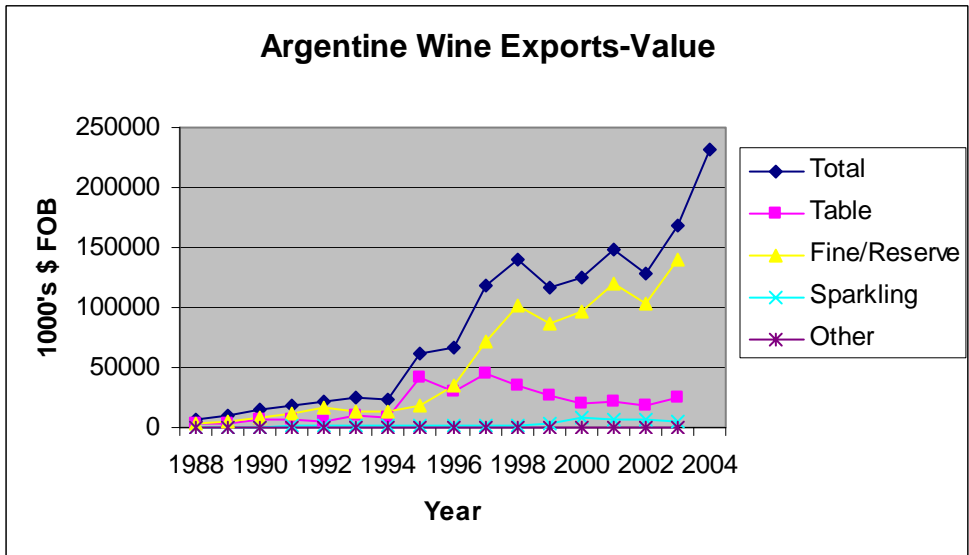
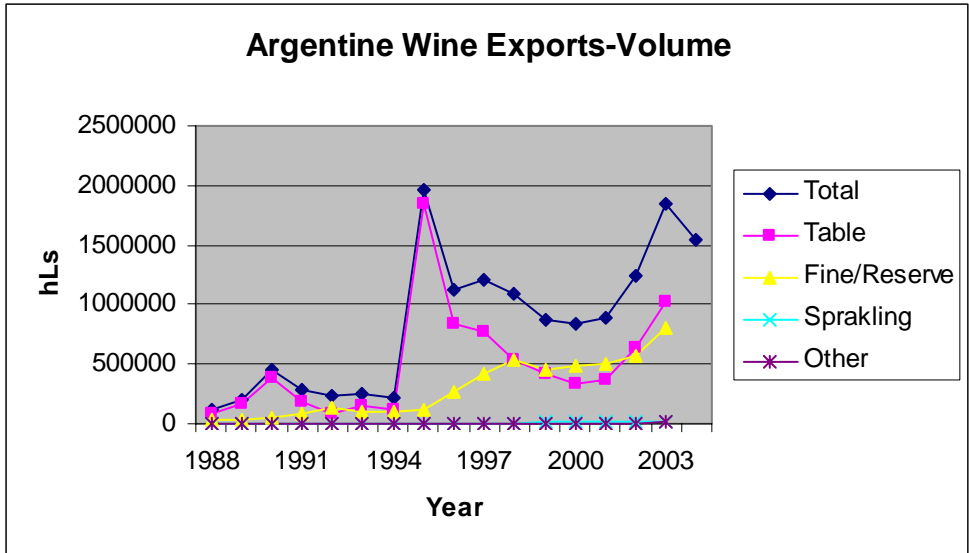
The proposed framework, in turn, invites further examination about the origins, sustainability, and replication of development institutions in two important ways. First, it suggests researchers pay closer attention to the ways broader socio-political struggles promote and inhibit the ability of governments to forge new public-private institutions with a variety of stakeholder groups, particularly during periods of crisis. For instance, the literature on federalism and party systems in developing countries often emphasizes the determining impact of optimal market preserving and financial incentives. (Weingast 1995) But this literature also shows how ongoing attempts to manipulate and control the given federalist and party systems creates great variation in policies at the subnational level. (Falleti, 2005; Guinazu, 2003; Levitsky, 2003; Montero & Samuels, 2004) At the same time, Doner et al. (2005) have proposed a framework of systemic vulnerabilities, in which a particular combination of international and domestic political forces give countries greater incentives to invest in innovative capacities. In turn, by uniting these literatures with a focus on the experimental processes of policy reform and institution building, one can better identify the broader socio-political conditions that give rise to

politicians adopting depoliticization or participatory restructuring approaches at subnational and national levels.

Second, the evidence here suggests that the principles of participatory restructuring can help overcome common barriers to sustainability and replication of local institutional innovations – large firms, especially MNCs, limiting access to new markets and knowledge (Schmitz and Humphries 2004; Gereffi and Sturgeon 2005) and poor histories of coordination among business associations, provincial, and national governments. (Ostrom 1999; Schneider 2004; Levitsky 2003) The creation of multiple public-private institutions as both receptors and promoters of new innovative capacities helps keep any one particular set of firms from becoming the sole “gatekeepers” of knowledge and resources (Schmitz and Nadvi 1999) and from accumulating the disproportionate economic power that would reverse expansion of innovative networks. (Farrell and Knight 2003) At the same time, the rules of inclusion and participatory governance can improve the ability of both public and private actors to monitor and learn from one another. For instance, despite changes in directors, government administrations, and political coalitions, the Mendoza institutions continue to be stable and self-adapting, something rather unusual for Argentina (Levitsky et al., forthcoming). Moreover, San Juan is witnessing significant change in the behavior of its government and relevant wine sector associations through greater coordination INTA’s regional center, their participation in Coviar, the recent inclusion of some San Juan firms in ProMendoza’s export promotional programs. The government has openly criticized the old approach of tax incentives and advocated the creation of new public-private institutional resources for training, R&D, and export promotion. (Ministerio de Economía de San Juan 2003) Leading grape producers have also left the old sectoral association to form a new one and actively participate in Coviar.

In sum, economic upgrading is determined not simply on the presence of certain institutions but especially how they are constructed and governed. As researchers on development readdress the roles of industrial policy (Rodrik (2004), clusters (Schmitz 2004), multinationals (Gereffi et al. 2005), and business associations (Schneider 2004), they may be better able to identify the political conditions of development by incorporating the literature on institutional change (Thelen 2003) and participatory governance (Fung & Wright 2001; Sabel 1994).

Figures 1a & 1b: The Growth of Argentine Wine Exports (by Volume and Value)



Source:

INV.

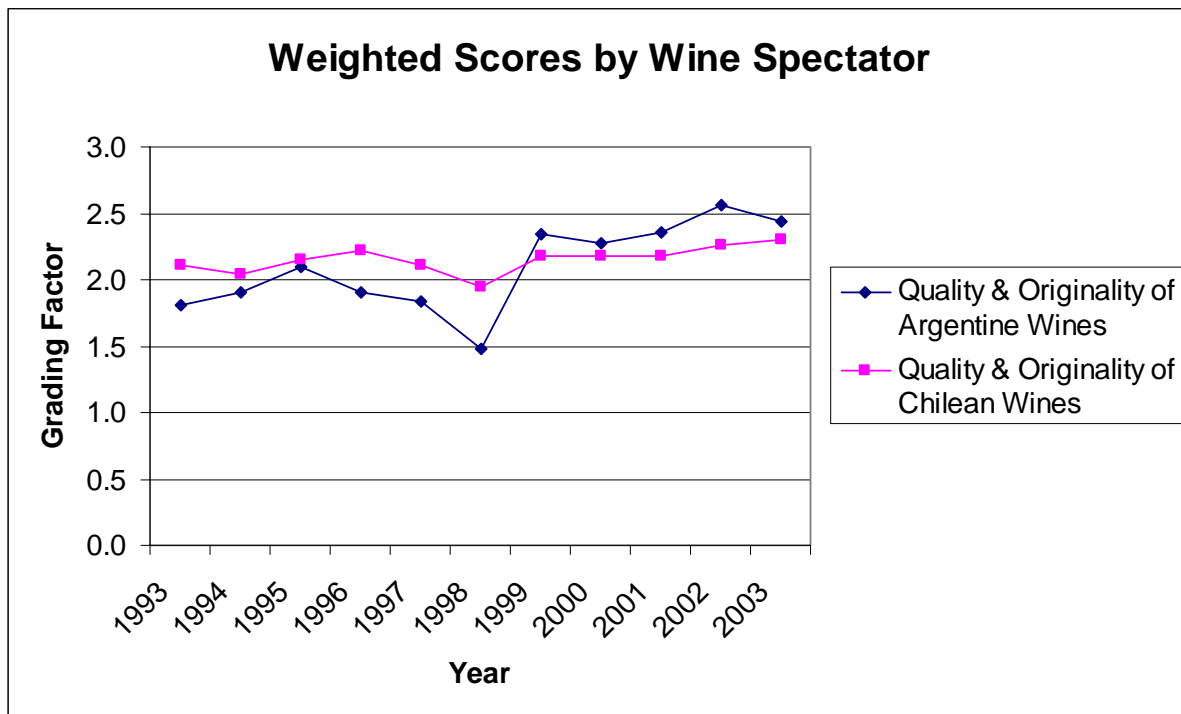
**Table 1. Scores for Argentine and Chilean Wines by *Wine Spectator***

<b>Argentina Distribution of Ratings Per Year</b>											
Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Mean	81	81	82	81	81	79	84	84	84	85	84
Median	82	82	83	81	82	78.5	84	84	84	85	85
SD	4.4	4.4	3.9	4.3	4.6	4.7	4.2	4.3	4.5	4.6	4.7
Observations	27	33	33	65	102	60	145	146	137	194	79
Minimum	73	73	74	71	61	64	73	72	71	70	75
Maximum	89	89	91	92	92	87	93	92	92	95	89

<b>Chile Distribution of Ratings Per Year</b>											
Year	1993	1994	1995	1996	1998	1997	1999	2000	2001	2002	2003
Mean	82	83	83	83	82	83	83	83	83	84	84
Median	83	83	84	84	82	83	83	83	83	84	84
SD	5.2	3.7	4.1	3.6	4.3	4	4.3	4.3	4.8	3.9	3.5
Observations	112	146	200	257	269	308	310	340	326	287	155
Minimum	55	71	62	69	55	70	71	69	60	76	76
Maximum	91	90	90	92	91	91	92	94	95	93	91

Note: Wines are rated on 100 point scale. Scores over 90 are considered excellent and over 85 very good.

**Figure 2. Weighted Scores for Argentine and Chilean Wines (Wine Spectator)**



Note: Scores were weighted by multiplying the number of wines in a particular range (e.g., 80-84, 85-99, 90-94, etc.) by a grade factor given to the range (1, 2, 3, 4, 5, etc.).

**Tables 2a & 2b. Comparing Mendoza and San Juan**

**Table 2a. Comparative Wine, Grape, and Industry Data**

	Year	Mendoza	San Juan
Winemaking/ ind output	1994	21.10%	26.50%
Mfg Industry/GDP	1993	18.96%	24.69%
Agro/GDP	1993	8.47%	11.11%
Province's Share of National Wine Production	1990	66.55%	24.88%
	2000	61.07%	31.06%
Province's Share of Grapevine Area	1990	69.74%	21.94%
	2001	70.08%	22.51%
Province's Share of Wine Exports	Ave. 2000- 03	90.62%	6.40%

Sources: INV; Consejo Federal de Inversiones, Argentina.

**Table 2b. Comparative Economic, Social, and Political Data**

	Mendoza	San Juan	Argentina
Population( 2000)	1,607,618	578,504	37,074,032
GDP (Millions USD, 1993)	\$6,925	\$2,266	236,505
GDP/Capita (1993)	\$7,878	\$4,571	\$7,254
Growth of GDP (1993-00)	1.17%	1.04%	--
Gini Coeff (2000)	0.375	0.378	0.491
Human Development Index (2000)	0.747	0.736	0.854
Impact of Coparticipation (1997)	65.10%	56.50%	--
Deficit/GDP (1999)	3.40	2.30	1.89
Current Account Balance (Ave. 1996-98)	-5%	4%	--
Debt Service /Current Revenues (Ave. 1993-99)	14.54	7.27	20.21
Unemployment Rate (Ave. 1993-99)	5.90%	8.50%	13.93%
No. of 4 yr.Terms Governor Can Serve	One	Two	n/a
Electoral Competition Score* (1991)	2.53	20.64	--
Electoral Competition Score* (1995)	22.54	19.28	n/a
No. of NGOs/1000 inhabitants**	2.3	2.18	--
No. of Total Cooperatives (1989)	397	333	--
No. of Agricultural Cooperatives (1989)	64	79	--
Crimes against property per 1000 inhabitants***	42.6	25.8	--

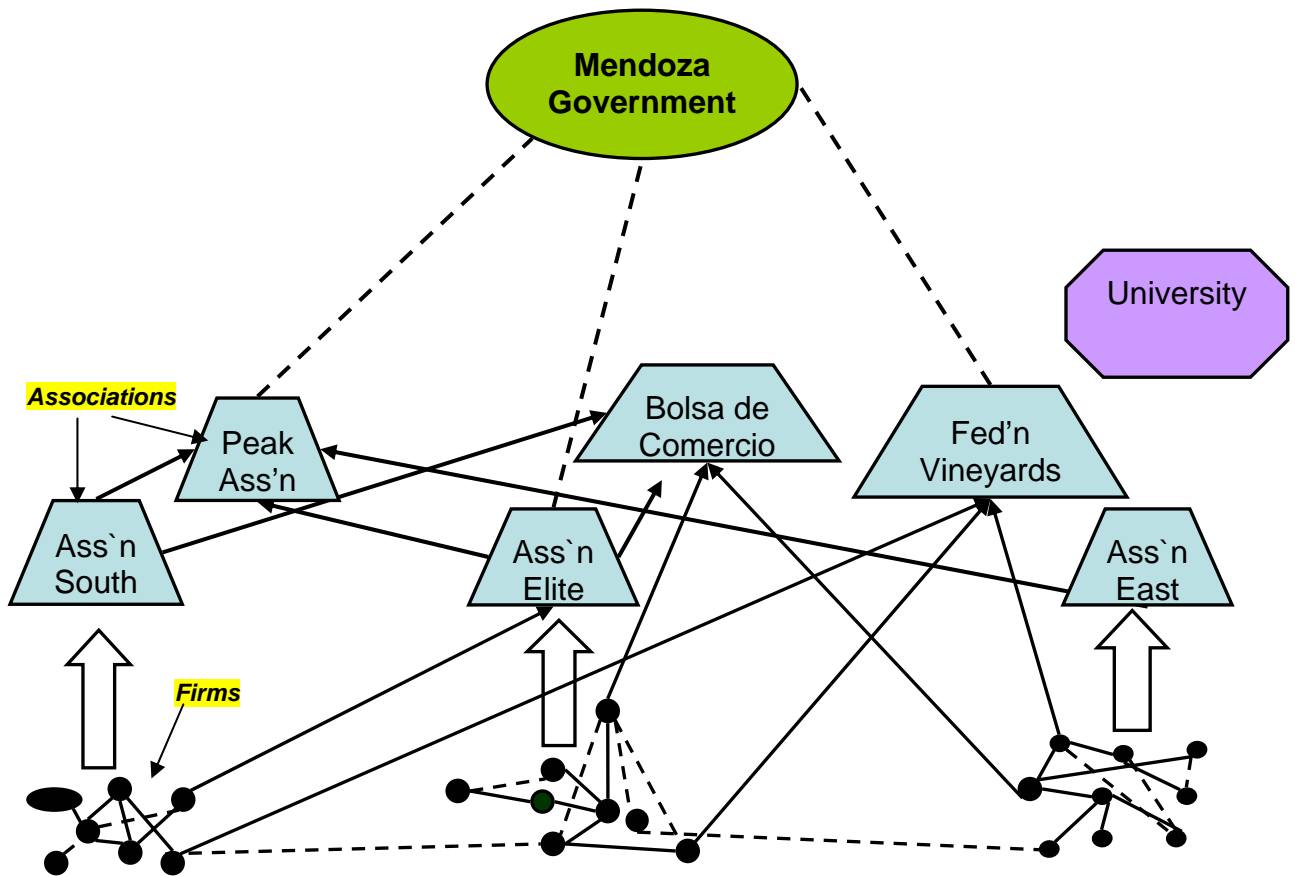
Notes: \* - Measured as the margin of victory in the gubernatorial elections. See Remmer and Wibbels (2000) and Wibbels (2005). \*\* - See Fiel (2003) and GADIS (2004). \*\*\* - See Fiel (2003).

**Table 3. Leading Upgrading Support Institutions in Mendoza in the 1990s**

<b>Institution</b>	<b>Year of creation or restructuring</b>	<b>Governing Members</b>	<b>Activities</b>	<b>Resources</b>	<b>Legal Form</b>
INTA Cuyo	1991	Govts of S Juan & Mza, 9 Agro Ass'ns, 2 Nat'l Univ's	Regional development plan, oversee budgets & activities of EEAs	National & provincial budgets	1 of 15 semi-autonomous Regional Centers; Federal body in Sec. of Agro.
INTA EEAs	1991	Gov't of Mza, Munis. Agro Ass'ns, Nat'l and Prov'l Institutes and Univ's	R&D (inputs, plants, tech), extension training, consulting	Half – nat'l budget (salaries & overhead); Half – services, alliances, gov't Mza, cooperadoras	Part of INTA Cuyo; 4 in Mza, 1 in SJ; Each has 1-4 AERs
Fondo Vitivinicola	1993-94	Gov't Mza, 11 wine/grape Ass'ns	Oversees new wine regulations, promotes wine industry/marketing	Tax on firms from over produc'n of wine	Public, non-state, non-profit entity.
Fondo para la Transformacion y el Crecimiento (FTC)	1993-94	Min. of Economy, Regional advisory councils	Subsidized loans and credit guarantees to SMEs for tech against extreme weather & for grape conversion	Self-financing; initial capital from privatization of gas & oil reserves	Independent legal entity under authority of governor
Instituto Desarrollo Rural (IDR)	1994-95	36 founders – INTA Cuyo, Govt Mza, ISCAMEN, 2 peak ass'ns, various agro sectoral ass'ns	Technical info collection & dissemination; Data base mgmt; R&D, training, consulting	Mza Gov't; services; gradual increase of fees from member ass'ns	Non-profit Foundation; with oversight by Min of Economy
Pro Mendoza	1995-96	Gov't Mza, 3 peak business associations	Export promotion – organize fairs, delegations, strategic information, training	Gov't Mza; Peak ass'ns; services	Non-profit Foundation

Abbreviations: INTA – Instituto Nacional de Tecnología Agropecuaria; EEA – Estaciones Experimentales (Sub-regional centers); Mza – Mendoza; ISCAMEN – Instituto de Sanidad y Calidad Agropecuaria Mendoza; Cooperadors – Non-profit NGOs.

Figure 3a: Policymaking and strategic ties in the Mendoza Wine Industry, 1989

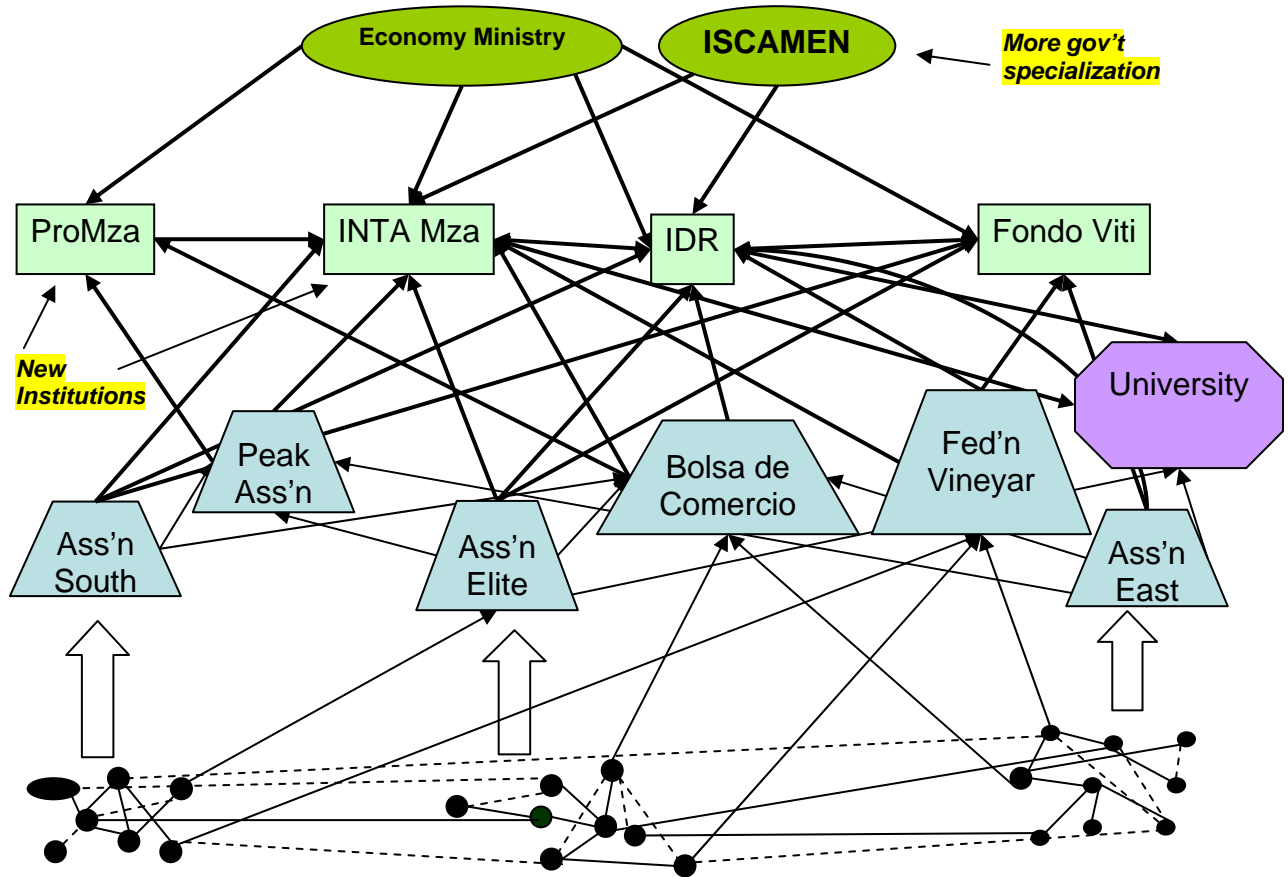


NB. Guide for both Figures 3a and 3b:

Solid black circles represent firms in different regions in Mendoza. Each region has its main wine business association, as shown by large white arrow. Dashed lines represent weaker links of contracting or communication than solid lines. Solid arrows denote membership or board participation in relevant associations and institutions.



Figure 3b: Policymaking and strategic ties in the Mendoza Wine Industry, 2000



## Appendix

Figures A-1 and A-2 are generated 2001 using institutional membership (affiliation) and board data processed with the network program, UCINET. The data set is a matrix of 325 unique associations and institutions (and about 20 firms) linked to the wine and grape sectors. The lines denote a board or membership connection between associations or institutions. To create Figure A-1, I simply removed the institutions (INTA Mza, IDR, ProMendoza, etc.) that were nonexistent at the time. This allows one to systematically see the ways the new public-private institutions bridged communities and indeed strengthened the secondary position of sectoral associations. Figure A-1 reveals a few “ghettos” of some associations; the large majority of associations and institutions are isolates (lined on the left) and not shown by the program. Figure A-2 shows Mendoza in 2001. The new institutions are labeled and have box shaped nodes. Table A-1 shows the 20 largest betweenness statistics form 2001 data. This shows that the new institutions, along with some government agencies, the university, and the two peak associations, play the most important bridging or “brokering” roles in the industry and province. (See Burt 1992; Safford 2004.)

**Figure A-1. The Mendoza Wine Industry and Policymaking, 1989**

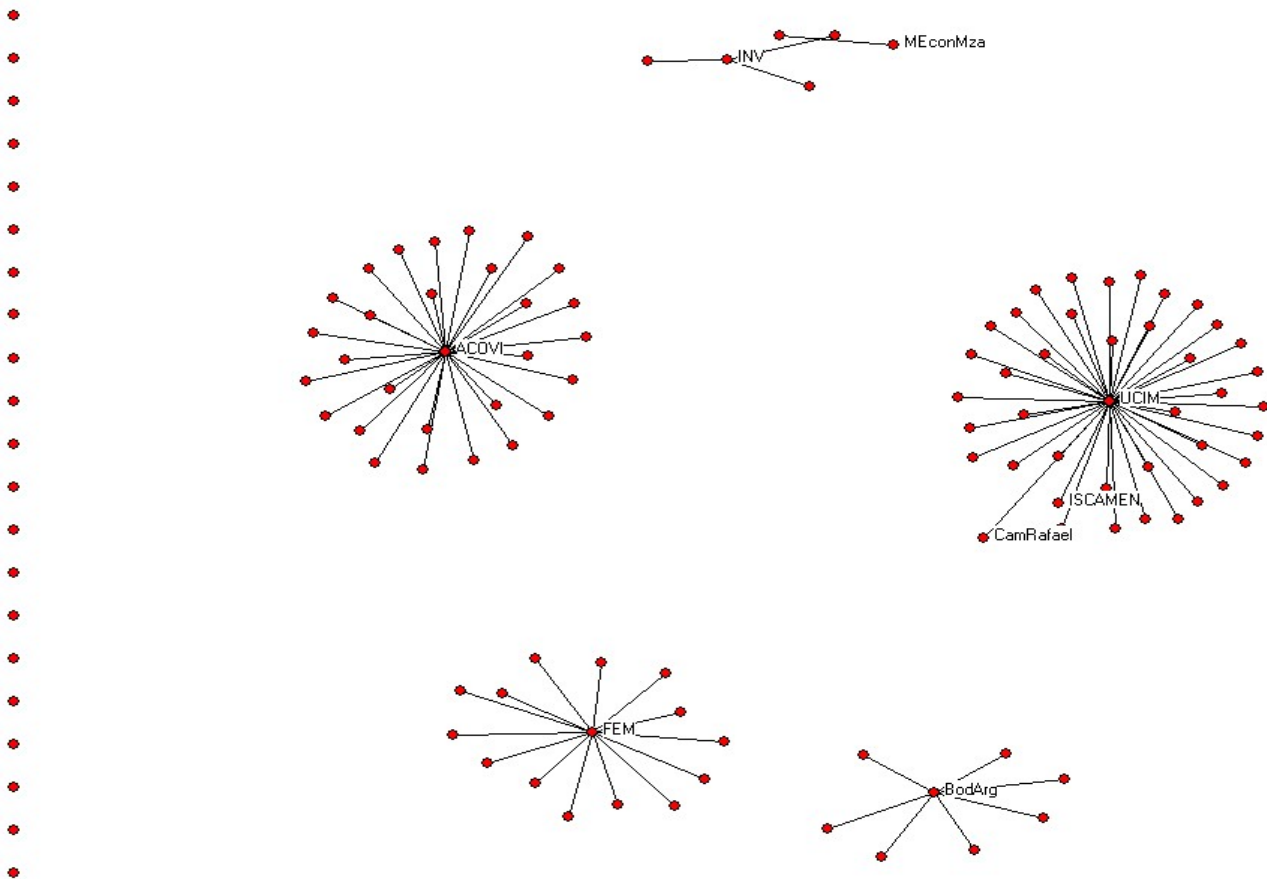


Figure A-2. The Mendoza Wine Industry and Policymaking, 2001

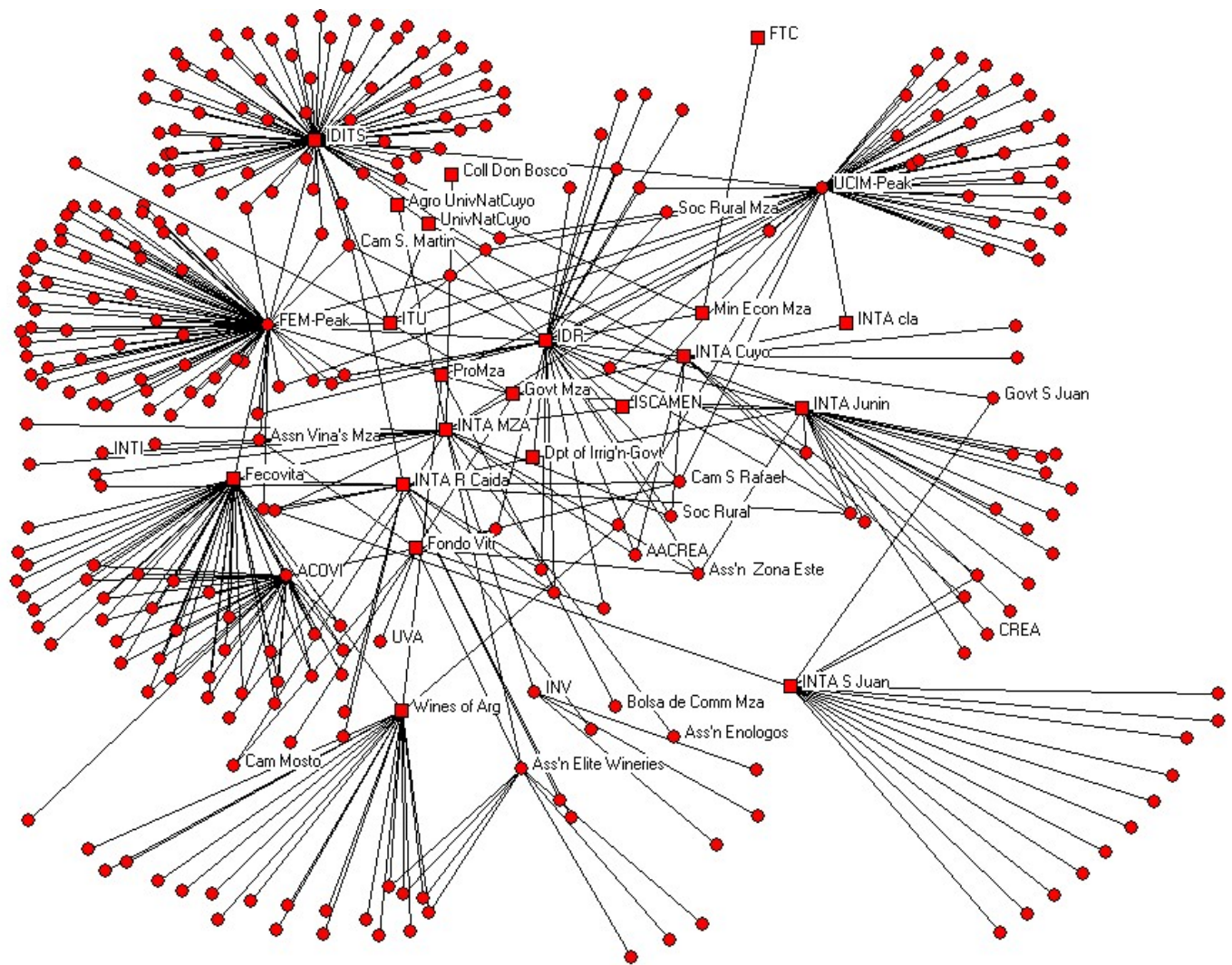


Table A-1. Largest Betweenness Scores, Mendoza 2001.

	FEM-peak ass'n	IDITS	UCIM- peak assn	Fecovita	INTA Mza	IDR	Wines of Arg	INTA Junin (EEA)
Betweenness	20718.12	18107.32	13556.21	12894.66	8431.386719	8041.07	5469.87	4148.68
nBetweenness	39.59	34.6	25.91	24.64	16.11	15.37	10.45	7.93

INTA Rama Caida (EEA)	INTA S. Juan	ProMza	INTA Cuyo	Ctr Agro'ts - South Zone	Fondo Viti	Bod. Arg (elites)	Univ Natl Cuyo	Govt Mza	Assn Vinas Mza
3734.21	3429.17	2962.12	2805.07	2498.73	1363.44	1353.71	1205.5	969.71	943.64
7.14	6.55	5.66	5.36	4.78	2.61	2.59	2.3	1.85	1.8

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## ENDNOTES

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<sup>1</sup> On the indeterminate impact of FDI and export firms on upgrading see (CEPAL, 2002; Cornelius & Kogut, 2003; Humphrey & Schmitz, 2004). See, for instance, on networks (Powell, Koput, & Smith-Doerr, 1996; Saxenian, 1994), social capital (Putnam, Leonardi, & Nanetti, 1993), property rights (Johnson, McMillan, & Woodruff, 2000; North, 1990), state coherence and capacity (Amsden, 1989; Evans, 1995; Guillen, 2001), and on “industrial districts” or “clusters” (Herrigel, 1996; Humphrey et al., 2004; Locke, 1995; Piore & Sabel, 1984; Schmitz, 2004a, 2004b).

<sup>2</sup> On the indeterminate impact of FDI and export firms on upgrading see (CEPAL, 2002; Cornelius & Kogut, 2003; Humphrey & Schmitz, 2004). See, for instance, on networks (Powell, Koput, & Smith-Doerr, 1996; Saxenian, 1994), social capital (Putnam, Leonardi, & Nanetti, 1993), property rights (Johnson, McMillan, & Woodruff, 2000; North, 1990), state coherence and capacity (Amsden, 1989; Evans, 1995; Guillen, 2001), and on “industrial districts” or “clusters” (Herrigel, 1996; Humphrey et al., 2004; Locke, 1995; Piore & Sabel, 1984; Schmitz, 2004a, 2004b).

<sup>3</sup> This research was based on field work during 2003-2005 that utilized over 65 open-ended interviews with relevant managers, enologists, agronomists, and policymakers as well as current and historical data bases on relevant provincial and national policies, civic associations, and firms.

<sup>4</sup> Through the 1990s, Argentine exports accounted for only 10% of GDP. Most exports were in commodities and low-value added, even in sectors such as leather goods where Argentina historically had comparative advantages and a well developed processing segment (CEPAL, 2002; Lugones, 2000) Guillen 2001.

<sup>5</sup> Over the last 20 years, there has been a decline in per capita wine consumption, increased consumption in fine wines (especially the four fighting), and intense competition from “New World” wine producing countries (e.g., USA, Chile, Australia) threatening traditional producers of Europe. See Henderson et. al. (2004) and Bartlett (2001).

<sup>6</sup> For more on this strategy and the rise of Argentine export prices, see Cetrangulo et. al. (2002); “La amenaza a las vinas chilenas,” *El Mercurio*, Nov. 2, 2005; and the lengthy annual reviews of Argentine wines in *Wine Spectator* (November 15, 1995; December 15, 1997; March 24, 2003; November 30, 2004; November 30, 2005).

<sup>7</sup> Between 1980 and 1990, the number of vineyards fell by 31% and then another 29% until 2001; the amount of vineyard surface area fell by about 35% in the 1980s and then slightly declined in the 1990s (with eradication of vines being largely offset by new plantings). As of 2001, vineyards with less than 25 has. still accounted for 92% of the number of vineyards and 60% of surface area. The figures are about the same for San Juan.

<sup>8</sup> See Walters (1999), Giuliani and Bell (2005), and Bartlett (2001). In Australia, the top 3 firms account for 50% of exports; the top ten firms account for almost 20% of vineyard surface area. In Chile, the top 6 firms account for about 80% of exports.

<sup>9</sup> I draw here on a few studies which attempt to clarify the terrain of the principal fine wine companies, using different sets of data (Cetrangulo et al. 2002, Blazquez 2001, Ruiz & Vila 2003, and Vila 2002).

<sup>10</sup> According to a 2003 survey of 400 wineries in Mendoza, only 4% have foreign investment and only about 6% are associated with or controlled by a diversified Argentine business group or corporation. FDI estimates come from CEM (1999) and Nimo (2001).

<sup>11</sup> The calculations on surface area and high quality grapes are done by the author using the data provided by the INV. See also Cetrangulo et. al (2002) , Bocco (2003), and “Cosecha 1999-2002,” *La revista de la Bolsa*, N° 441, October 2002. The figures on capabilities and exports of firms from the *Zona Este* are from a survey of 400 wineries in Mendoza undertaken in 2003 by the Ministry of Economy of the government of Mendoza.

<sup>12</sup> Argentina ranks consistently low in measures of rule of law and property rights protection. See: <http://www.worldbank.org/wbi/governance/govdata/index.html>. In an analysis of provincial business climate, measures of legal efficiency were similar between the two province, while Mendoza had a much higher number of crimes against property per 1000 inhabitants than San Juan. (FIEL 2003)

<sup>13</sup> This type of story was repeated to me on 10 different occasions.

<sup>14</sup> By the 1990s, San Juan has had five wine/grape sectoral associations, one economic federation, and one export association; Mendoza had six wine/grape sectoral associations, two economic chambers, and one export association.

<sup>15</sup> ACREA (Asociacion de Consorcios de Experimentación Agropecuaria) is an association that began decades earlier coordinating and promoting collective learning among farms in the Pampas regions – the regions of grain, cattle, and dairy. The participants meet monthly at one of the member’s vineyards to address a common problem or strategic concern via the “live” example at the given vineyard. There were no Grupos in San Juan, but between 1990 and 1996 the number of Grupos grew from three to six, falling in the late 1990s back to three in Mendoza.

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<sup>16</sup> The events in Mendoza, CODEVIN San Rafael (*Zona Sur*) in 1995 and CODEVIN de *Zona Este* in 1997, grew rapidly from a few dozen samples to over 150 each within two to three years. San Juan firms created EVISAN in 1997. It grew from 50 samples by 14 participating wineries in 1997 to over 102 samples by 29 wineries in 2004.

<sup>17</sup> *Promoción industrial* was started in 1973 and included San Juan in 1983 as the fourth beneficiary, in addition to the provinces of Catamarca, La Rioja, and San Luis. This program appeared to have had a significant impact in manufacturing and agriculture expansion in San Juan. Although partially suspended in 1987, President Menem renewed it, first in 1992 by decree and then in 1996 by law (Guinazu, 2003); (Heymann & Kosacoff, 2000; Zudaire, 2001). Its revised form focused on deferring about 75% of income taxes to the investor in agroindustrial and tourism projects. Estimates put the federal fiscal cost at about \$7 billion in the 1990s. (Borsani, 2001; Consejo Empresario Mendocino, 1999)

<sup>18</sup> During 1988 and 1989, Bordon would appoint an outside auditing commission, spin-off periphery units (such as in fruit, bottling, distilling), and reduce employment from 3500 to about 300. Also, seven coops purchased wineries and twelve leased them in the beginning. Leverage was slashed and virtually all the new cooperatives paid back the special loans ahead of maturity. By 2002 Fecovita had sales of over \$54 million, 28% of which was exports. More recent, it has emphasized improvements in packaging, bottling, and label management and expanding medium quality fine wine (e.g. Marcus James in the US). (Amendola, 2003)

<sup>19</sup> Fecovita now includes 32 cooperatives, commercializes over 80% of the wine made by its members, and each cooperative ranges from 20 to 120 members. There was virtually now growth in the number of wine cooperatives in San Juan in the 1990s. See Paladino and Morales (1994) and Juri (1990). By 2000, over 2500 grape producers in Mendoza were members of cooperatives, accounting for over 15% of total grape production in the province, and another 2000 producers are estimated to be dedicated suppliers of the cooperatives (Amendola et al. 2003).

<sup>20</sup> The PROINDER program is administered by the Secretary of Agriculture of the federal government. Each province had to submit documentation, following a standard format, during 2000-2003. Policy areas include programs for the prevention and diminished impact of negative climatic shocks, such as sudden hail storms and freezes (including subsidized credits to SMEs for relevant equipment and a specialized monitoring system), subsidized credits for small and medium farmers for improvements in technology, water management, and grape conversion, programs in the research, tracking, and dissemination of best practices in the management, processes, and technologies of farms by every sub-region, continued tracking of the climate, soil qualities, fertilizer uses, and harvests in every sub-regions, and the expansion of the capabilities of the provinces phytosanitary regulator.

<sup>21</sup> See Locke (2001), Cohen and Rogers 1992, and GADIS (2004). According to the data from the UNDP/IDB civil society index in Argentina, by 2000, there were 419 such organizations in Mendoza and only 92 in San Juan. As the UNDP notes in its analysis, these types of civic organizations, by virtue of the membership and services, tend to connect individuals from different backgrounds and sectors in new ways, are experimental in service development, and help pool various sources of information and resources for public access. Moreover, chief among organizations in this classification are support organizations, especially those focus on economic development and social services. Whereas Mendoza has proportionally more organization linked to training, education, sciences, and SMEs, San Juan has many social, neighborhood, and sports clubs.

<sup>22</sup> INTA's budget was radically changed, as the federal government eliminated its primary stable source of funding, a 1.5% tax on agricultural exports, incorporating INTA's funding into the general government budget. (Casaburi, 1999) The national Executive Committee includes representatives of the federal government, agricultural educational institutions, and the top agricultural producers' associations. INTA has gone through three reorganizations between 1991 and 2005. For instance, from 1991 to 1997, the Cuyo center concerned only Mendoza and San Juan, and then from 1997 to 2004 this center included the provinces of La Rioja and San Luis as well. Since 2005, the Center has returned to include on Mendoza and San Juan.

<sup>23</sup> By law, any firm that uses at least 20% of its input grapes for mosto (the natural juice sweetener) does not have to pay an annual, relatively small tariff to the Fondo. The Fondo Vitivinicola is financed from these tariffs and matching funds from the government of Mendoza.

<sup>24</sup> Within about 4 years the program boasted nationwide over 1900 groups of over 21,000 producers and a network of almost 200 full- and part-time field agents and consultants in many agro sectors. CR in Mendoza reached better than expected results. It claimed over 100 learning groups that accounted for about 1250 producers, while in San Juan it created only 19 groups of 133 producers. By 1996, about 350 grape growers were participating in CR Mendoza. See Cheppi (2000)

<sup>25</sup> According to data of these two universities, the number of students and graduates in agronomy and enology degree programs increased by 50% between 1996 and 2001.

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<sup>26</sup> The Instituto Tecnológico Universitario was founded in 1993 by the Mendoza government, Universidad Nacional de Cuyo, Universidad Tecnológica Nacional and two peak level Mendoza business associations to provide a three year technical degree in management and technology.

<sup>27</sup> This is based on interviews and documentation of the minutes of relevant meetings at INTA Cuyo.

<sup>28</sup> On Russia, see Woodruff (2000), Herrera (2005) and Johnson (2001), on China, see Huang (2003) and Oi (1992), On Brazil see Tendler (1997) and Montero (2002), on Germany see Herrigel (1996), and on Italy see Locke (1994) and Farrell and Knight (2003).

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