Abstract
Through a comparative analysis of the wine industry in two Argentine provinces, this article examines the political conditions that can enable or impede the ability of a society to build new institutional capabilities to upgrade and compete effectively in international markets. Upgrading in wine and grapes is similar to complex manufacturing as upgrading demands continuous decentralized, inter-firm experiments in processes, products, and functions. While voluntary associational improves the needed social learning and collaboration, it is also self-limiting. The critical factor for breaking out of low-equilibriums and sustaining upgrading is a political approach, “deliberative restructuring,” that promotes the creation of public-private institutions, which: a) incorporate multiple stakeholders and b) prioritizes collective problem-solving. In turn, the institution building process facilitates collaboration and knowledge creation among previously antagonistic groups.

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Introduction

Through a comparative analysis of the wine industry in two Argentine provinces, this article examines how different political approaches to reform can enable or impede the ability of a society to build new institutions to upgrade its firms. Upgrading is shifting from lower- to higher-value economic activities within global commodity chains by using local innovation capacities to make continuous improvements in processes, products, and functions (Doner, Ritchie, and Slater 2005; Giuliani et al. 2005).

Most of the literature related to upgrading has shown that innovative capacities depend not simply on the presence of foreign investment or exporters per se but especially on domestic social and institutional conditions, such as inter-firm networks, property rights, state coherence and capacity, or some optimal combination thereof manifested in “industrial districts” or “clusters”. Yet as is evident in emerging debates about the origins and change in institutions (Mahoney and Rueschemeyer 2003; Greif and Laitin 2004), the developmental state (Deyo, Doner, and Hershberg 2001; Rodrik 2004), and social networks (Ansell 2000, Powell 2003, Padgett 2001), it is less clear how public and private actors forge new sustainable, value-creating institutions and networks. This problem is all the more salient in developing regions like Latin America, where the typical institutional and social preconditions for building innovative capacities are severely lacking. (Haber 2002; Pack 2000; Levitsky and Murillo forthcoming; Ostrom 1999).

Indeed this problem makes the analysis of the Argentine wine sector quite instructive. Located in a country known for its deep-seated dysfunctional social capital and political-economic institutions and with a long history failed development and virtually no prior international presence, the Argentine wine sector witnessed a turnaround in the 1990s that now accounts for more than 2% of the over $12 billion global wine market. But like other Latin American countries (Giuliani et al 2005), this transformation is also noted for its subnational variation, namely when one compares the two dominant winemaking provinces, Mendoza and San Juan. 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 product innovation from a wide variety of firms – just the type of improvements and knowledge creation found to be vital for upgrading in wine and many other industries (Giuliani XXX; Giuliani et al 2005). In contrast, San Juan has been a laggard in upgrading its wine and
grapes, despite sharing similar social and economic preconditions and advancing policies that did usher in large amounts of new investment. Moreover, the institutional renovations pioneered by Mendoza are beginning to create a quiet revolution in national industrial policy. In 2004, the Argentine congress and president signed into law a strategic sectoral policy (PEVI) and governing institution (COVIAR) that 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. (Ross Schneider 2004) Instead, while PEVI is inclusive, self-financing, and enabling, both the creation and governance of PEVI and COVIAR are rooted in the active participation of public and private actors as well as provincial and federal officials.

In turn, an analysis of Mendoza and San Juan allows one to address the broader debates on breaking out of low-equilibrium traps and creating new innovative capacities in two key ways. First, what types of institutional innovations contributed to the upgrading in Mendoza? Second, 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 nor by the sudden implantation of new rules or incentives. Rather, different political approaches to reform can facilitate or impede the construction of new public-private institutions that underpin the diffusion of knowledge 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 take to construct political and policymaking power. These strategies center on two contrasting choices: whether to insulate policymaking making power from society and rely on arms length incentives or whether to empower and incorporate a variety of public and private actors into policymaking in such a way as to induce collective problem solving.

In this view, the construction of institutions supportive of upgrading is based less on some optimal design and more on a process in which the relevant firms, associations, and public actors jointly experiment with new roles and rules. While socio-political legacies can shape this process, they can begin to be reshaped by discreet political approaches to reform during crises. (Thelen 2003; Greif and Laitin 2004) Crises allow governments the political space to overcome past constraints not simply by declaring a new policy but rather a new 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. On the one hand, a government may choose what I call a “depoliticization” approach which aims to insulate centralized policymaking and rely heavily on new rules based on high powered economic incentives. On the other hand, a government may choose what I call a “deliberative restructuring” approach which aims to embed the state and policymaking in society in new ways (Evans 1995, 2004). This approach rests on: 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 while keeping 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.

Section I lays out the theoretical underpinnings of this argument. Section II review the gains made by the Argentine wine industry and the importance of coordinated, decentralized product and process experiments to upgrading. Of particular concern is explaining such upgrading was initiated and sustained in Mendoza across a wide variety of firm, micro-climates, and products. Section III compares the relevant structural variables that have difficulty explaining the divergent outcomes in San Juan and Mendoza. While firms and their associations can advance social learning, these efforts can also be self-limiting due to the diversity of interests, historical animosity, and resource inequalities between regions. Section IV shows how Mendoza’s political approach to building new public-private institutions helped over come these conflicts by recombining the ties among diverse groups and fostering collective problem-solving. The last section concludes the article.

A study of the wine sector in Mendoza and San Juan has several methodological advantages in the controlled comparison of key similarities and differences over time (Ragin 1987). First, this study addresses the concerns of Schmitz and Nadivi (1999), Pack (2000), and Rodrik (2004) for comparisons of successful and failed attempts to construct clusters and the institutions supportive of economic upgrading. Second, a comparison of two provinces helps capture the variety of political-economic landscapes within a nation, the variance in the ways they interact with national policies, and the conditions of institutional innovations that typically
emerge at the sub-national level. (Snyder 2001, Montero 2003) Despite the different outcomes in innovative capacities, both provinces share similar soils and climates, have been subject to the same national macro-economic conditions, sectoral regulations, legal regimes, and institutions. Their governments even agreed in 1993 to share the same regional sectoral policy regime. Moreover, the timing of the transformation and differences between the provinces allows one to gauge the explanatory power of inherited social capital, economic endowments, and political incentives.²

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

Since the development of new inter-organizational networks and institutions supporting innovative capacities (e.g., R&D, knowledge transfer, training, etc.) often crosses both firm and public-private boundaries, it is a collective action problem heavily conditioned by political and social forces. There are two broad views about these forces.

The “top down” view argues at the limit that growth and innovation depend on whether central governments have sufficient level of insulation and autonomy to design and implant the “right” set of rules and institutions on society. Some scholars argue that institutions protecting and enforcing the rule of law, hard budget constraints, and private property rights lead firms to create optimal ownership and contractual structures to invest in upgrading (Johnson, McMillan, and Woodruff 2000; Weingast 1995; Boycko, Shleifer, and Vishny 1995). Others emphasize that coherent, insulated states must enact strategic interventions into specific sectors to spur the necessary investment into technologies and skills (Gerschenkron 1962; Amsden 1989; Wade 1990). Although these scholars may differ about what defines the proper policies, incentives, and rules, they share two common views about the needed institutional change. First, the state is a vital actor in uprooting entrenched elites and framing new paths of development largely through some redistribution of resources and the creation and enforcement of new rules based on arms-length economic incentives. Second, because of the grabbing hands of the old elite and the fears of the masses, the design and implementation of the new rules depends on the creation of a strong executive and a state apparatus insulated from society, other than perhaps elections every 4-6 years (Haggard and Kaufman 1995; Shleifer and Vishny 1998; Haber 2002).

In contrast, the “bottom up” view is suspicious of development paths and collective action solutions based on arms-length incentives from the commanding heights. Given the
highly uncertain environments of emerging markets or high-technology industries, clear ex ante rules and contracts can often be inapplicable if not impossible to define. Rather, economic activity is embedded in discrete sets of social ties and networks that embody well understood norms and reputations. This “social capital” (broadly understood) mediates where formal rules can not, such as in the diffusion of tacit knowledge or the development of multi-party experiments, and is the foundation from which any formal institution emerges. Shared norms and dense networks may be the result of repeated interactions among individuals that face a common set of positive or negative externalities (Ostrom 1990) or of deep historical traditions of civic mindedness (Putnam, Leonardi, and Nanetti 1993). While scholars may differ about the relative importance of certain network structures and modes of reproduction, they share the view that the key issue in development is nature of a society’s social fabric 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 but rarely defines the game autonomously, or perhaps only with disruptive consequences.

These literatures have certainly improved our understanding of the conditions for growth and innovation. However, taken together they reveal some common weaknesses. First, to the extent that development in general and institution building in particular relies on 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; Ostrom 1995; McDermott 2002, 2002). Second, many of the existing approaches toward social capital and networks tend to give what (Granovetter 1985) has called “over embedded” accounts, which greatly underplay the possibilities for purposeful action, be it from firms, associations, or the state (Padgett 2001). Third, for both views, the received accounts tend to reify interests and social groups in such ways as to make social capital and institutions almost functional and binary – you either have the necessary pre-conditions or don’t, and if you are stuck in a low-equilibrium trap, you might as well wait for the next Bolivar (Locke 2001; Kitschelt 2003).

These criticisms are not intended to dismiss the importance of social or political preconditions. Rather, they merely highlight that the past structure of the state, electoral rules, or composition of socio-economic groups may be indeterminate and less helpful in helping one clarify the policy reform approaches that lead societies to recombine their existing social and
institutional resources to forge new innovative capacities. For instance, recent research on economic policy in Latin America and Eastern Europe shows that even with similar political institutions and social structures, policy-makers, especially in times of crisis, have a variety of resources and policy tools to reshape economies and business interests (Schneider 2004, Montero 2002, McDermott 2004, Johnson 2001). Similarly, as much as the current literature on clusters emphasizes the provision of collective goods (i.e., training, R&D, financing for small firms) through concerted local action, it is admittedly weak in specifying the role of even the best intentioned government in promoting the relevant institutions. (Schmitz 2004) What is lacking is a clarification of political approaches to reforms and crises that tend to promote an interaction of the state and socio-economic groups in new ways for the creation of previously unavailable innovative capacities. Only after specifying the spectrum of these approaches can one begin to hypothesize the broader political and social conditions that may give rise to these approaches.

The first insight toward filling this gap comes from research showing that market failures may require government intervention, but 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 rule making 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.

But then how would opening the policy-making process promote a sustained learning among public and private actors and not simply reflect the narrow old interests of existing socio-economic groups and not fall prey to self-dealing? An answer can be found in the principles of delegation and deliberation. First, delegation concerns the rights of public and private entities to participate in the oversight and substantive policy discussions of a third-party institution or agency to which they have delegated the responsibilities to provide a common service or remedy a shared constraint. The key issue here is that in opening up the policy-making process, the state would have to allow the participation and empowerment of multiple groups related to the policy issue. This principle can overcome a history of stalemate among many fragmented groups as well privileged access for the strongest. Research on secondary associations (Ross Schneider
2004; Locke 1995; Cohen 1992; Safford 2004; Doner and Schneider 2000) as well as on public policy agencies (Tendler 1997) reveals that both more encompassing entities and inclusive rules of membership can tie disparate, isolated groups together in new ways that both empower weaker ones and reshape network structures. Moreover, the incorporation of previously marginalized groups and the new interaction for previously antagonistic groups can tap into new resources and knowledge as well as boost mutual monitoring.

Deliberation is the iterative process by which the participants define objectives, evaluate results, and decide on the next measures to be taken. 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, cooperate, and effectively learn how to monitor one another. Moreover, these scholars as well those focused on firm-level improvements in process and product development capabilities (MacDuffie 1997; Argote and Darr 2000; Helper, MacDuffie, and Sabel 2000; Winter 2003) have shown that collective problem solving enhances learning and the strategic use of resources by bringing together previously unconnected knowledge and resources.

The cumulative term I give to these observations is “deliberative restructuring.” It seeks to account for continuity and change by showing how institutional and network change are both interdependent and experimental and are dependent, first and foremost, on different political approaches to reform in times of crisis. The creation of key innovative capacities for upgrading crosses the boundaries of firms and the public-private domains knowledge and capabilities creation is a collective learning process. But by appreciating the experimental and collective nature of both policymaking and capabilities creation, one no longer clings to narrow notion of rules being strictly the product of the state or society. Rather, through the processes of collective problem solving and deliberative governance, private and public actors re-evaluate their objectives and time horizons and co-define the new uses of resources and the new criteria to evaluate their use. Like Evans (2004) and Montero (2002) deliberative restructuring appreciates the horizontal embeddedness of public-private institutions in facilitating learning and monitoring. And like Thelen (2003), Tendler (1997) and Schneider (2004), it emphasizes that political approaches based on the participation and empowerment of previously excluded or
agonistic social and government actors can trigger gradual changes institutional development and social groups themselves.

In turn, this approach puts forth three conditions under which societies are more likely break out of low-equilibrium traps and put themselves on a path of sustained development.

1. While crises and shocks may open the political space for change, sustained institutional renovation is more likely to occur when policies are used to reshape resource asymmetries among market actors.

2. New efforts at sustained collaboration and upgrading are more likely to occur when socio-economic associations are encompassing in membership and problem-solving in nature. A corollary to this is that even if these associations are problem-solving in nature, they may have limited impact on an industry or community to the extent that they are isolated or are exclusionary.

3. Policy choices that initiate the creation of public-private institutions that are problem-solving in nature, based on the principles of delegation and deliberation, and are guided by inclusive rules for membership and service provision are more likely to improve the collaboration among previously antagonistic, isolated groups, improve the use of public resources, and improve learning, knowledge creation, and upgrading for the relevant public and private actors.

Conversely, one can also define the condition which would impede a society from upgrading:

4. To the extent that the government develops a political approach to reform that relies on attempts to insulate the state and use arm’s length economic incentives for new investment, the benefits will likely go to existing privileged elites and not induce new forms of upgrading.

The next section describes the renewal of the Argentine wine sector, and particularly varied success of Mendoza and San Juan to create the innovative capacities to export fine wines. In doing so, it also discusses the limited explanatory power of typical structural variables (economic, political, and social) in explaining this variation.

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.

The recent ascendency of Argentina in the international fine wine market comes in the wake of an overall decline in per capita wine consumption, increased consumption in higher quality fine wines (especially the four fighting varietals of cabernet sauvignon, merlot, chardonnay, and sauvignon blanc) and intense competition from “New World” wine producing countries (e.g., USA, Chile, Australia) threatening traditional producers of Europe. (See Table 1.) Although Argentina was historically one of the largest volume producers and per capita consumers of wine, the wine industry, as with most other Argentine industries, was never known for its quality or exports. Through the 1980s, the market was heavily regulated, dominated by a few large producers of high volume, low quality table wine for captive domestic consumers. Under the administration of President Carlos Menem (1989-99) and Economy Minister Domingo Cavallo, Argentina implement pro-market reforms, including widespread liberalization (including wine), privatization, and stabilization via a currency board of an overvalued currency. Argentina would experience low inflation, a sudden increase in FDI, and volatile growth. But by the late 1990s, the country suffered from poor exports (only 10% of GDP) and a consistent shift away from value-added production, even in sectors such as leather goods where Argentina historically had comparative advantages and a well developed processing segment (CEPAL 2002; Lugones 2000).

In contrast, the Argentine wine sector, though still very dependent on domestic sales for revenues, underwent a profound strategic shift toward quality and exports in the 1990s. Wine exports went from a few million dollars and virtually no international presence at the beginning of the decade to 1.5% of the world market even during the worst effect of the exchange rate regime in the late 1990s to 2% of the world market or over $230 million (including 3% of the highly competitive UK market). Total wine exports grew at an average annual rate of about 23%; about 85% of export revenues are from fine wine. (Figure 1b)

These gains have not been based on comparative costs alone, but rather a foundational change in consistent quality and product innovation. First, as Figures 1a, b show, by the mid-1990s the vast majority of export revenues came from fine wines, as opposed to cheap table wine. Second, over 70% of Argentine wines are sold in the United States, EU, and Japan, hence sophisticated, competitive markets. As Guillen (2001) has noted, a key reason for the lack of
upgrading and general competitiveness of traditional Argentine firms in other industries was their overwhelming focus in the 1990s on less sophisticated markets, such as the domestic market and the Mercosur. Third, as shown in Tables 2a & 2b and Figures 2a & 2b, the major trade magazines, *Wine Spectator* and *Wine Enthusiast*, now rate many Argentine wines, whose scores are comparable to the better known Chileans and show an increasing broad base of quality products. Moreover, Argentina has made gains from scope and product innovation, not simply consistent quality of the fighting four varietals. That is, Argentina is not only doing for Malbec what the Australians did for Syrah, but Argentine firms becoming well known for their ability to produce high quality wines of many different varietals and distinctive blends (*Wine Spectator* 1995; (Walters 1999).

**Upgrading as Coordinated, Decentralized Experiments**

This shift in quality and product innovation is all the more remarkable for a historically backward country and industry given the need for coordinating multiple, continuous process and product experiments across a variety of organizations and micro-climates. That is, while access to new technology and inputs is important, the same technology, as wine experts repeat, can make a $5 or a $50 bottle of wine. While marketing and distribution can account for part of the difference, the foundation is transforming the middle and upstream components of the value chain: state-of-the-art quality control and product development running from the planting of vines to careful grape maintenance to flawless harvests to vinification and blending. These are continuous processes that require significant time and interaction. Any new vine planted takes 3-4 years to know its initial results. Any quality and taste modification to grape growing takes 18 to 24 months.

The initiation and maintenance of quality and taste improvements begins with the enologist working closely with agronomists and growers to introduce and experiment with new modes of growing, pruning, sanitizing, and watering with new or old varietals and clones of grapes. Enologists and agronomists 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. Each stage of the value chain, whether it concerns quality control or product development, also has to be carefully documented and shared among the key actors so they can benchmark and learn season after season. Such nested knowledge creation and dissemination is necessarily social, interactive, often demanding a
complex network of vertical and horizontal ties among firms. (Giuliani and Bell 2005; Henderson, Pagani, and Cool 2004; Roberts and Ingram 2002; Walters 1999). Similar to co-design and co-benchmarking processes used in a number of complex manufacturing industries (Helper, MacDuffie, and Sabel 2000; Deyo, Doner, and Hershberg 2001), enologists, agronomists, and growers must continually share information, develop common criteria and reporting procedures, and then test and jointly review the results.

This gradual, multiparty process of upgrading in Argentina was complicated by an inherited stock of poor quality vines and a relatively great diversity growing conditions for potentially high quality grapes. First, by the late 1980s the vast majority of vines produced grapes of low enological value, and the fluctuations of the 1980s led to the eradication of even potentially high value grapes, like 30% of the stock of Malbec (Walters 1999). Second, whereas the large majority of grapes in Chile were the fighting four varietals, Mendoza and San Juan had about 100 micro-climates that had the potential to support at least 12 red and white varietals of medium and high value (Walters 1999, Cetrangolo et al 2002). Nonetheless, the surface area of Argentine vineyards dedicated to varieties of high enological value has increased from about 20% in 1990 to about 43% in 2001 (Cetrangolo et al. 2002) from a combination of “retooling” old vines, eliminating others, and planting new ones.

The diversified, decentralized nature of fine wine upgrading is further reflected industry’s relatively low level of concentration and variety of firm strategies and organizational forms. During the 1990s, the number of registered and active wineries in the Mendoza and San Juan, the two dominant winemaking and grape growing provinces, dropped by about 35% and since 2000 gradually rose. Today there are 683 active wineries in Mendoza and 169 in San Juan. While 80% of sales for the table wine market is dominated by 6 firms, fine wine production is much more balanced. For instance, as recent as 2003, there were about 200 firms that export wine, with the top five firms accounting for about 40% of total wine export sales, the top 10 accounting for only about 60%, and the top 20 for about 70%. In contrast, a handful of large, vertically integrated firms quickly dominated exports and grape supplies in Chile and Australia.3

The acquisition and development of grapes is even more decentralized. While the 1980s and 1990s did experience a significant decline in the number of surface area of vineyards and some consolidation,4 by 2001, plots remained relatively small with about 16000 vineyards of about 140,000 hectares in Mendoza and another 6000 vineyards of about 50,000 hectares in San
Juan. (See Table 3.) Ownership concentration also remains low. According to the agricultural survey of the Mendoza for 2003, the largest 18 vineyard owners control only 5% of surface area dedicated to grape growing for wine and about 1100 owners control about 50%. Indeed, despite the asset specific nature of grape development, subcontracting has actually increased from about 50% of a winery’s grape needs to almost 70%. (Cetrangolo et al. 2002)

In turn, one finds significant diversity among Argentine, and especially Mendozan wine and grape firms, in terms of size, ownership and strategy. No wine firms are publicly listed, though about 50 are wholly or partially owned foreign MNCs or Argentine business groups. Foreigners have majority ownership in half of the top 30 exporting firms. 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, and most appears to have come after 1996. The seven companies that account for most of the lower priced fine wines are broadly diversified and vary in ownership structure: two are prominent cooperatives which have 20-35 member firms and draw on a few thousand small grape suppliers. There are also about 50 premium wineries that account for about 45% of volume and 70% of exports of fine wine. Most of these firms are domestically and family owned businesses that have transformed their product portfolio from mainly table wine to fine wine with a US retail price per bottle ranging from $5 to $40. They have their own vineyards but also depend on about 3000 grape suppliers. The largest have about 200-300 non-exclusive suppliers each. As of 2000, there were an additional 30 small, new wineries and about five small cooperatives, both of which focus on low volume but high value wines. They rely mostly on the grapes from their own vineyards and a very limited number of small, specialized suppliers. The premium and ultra premium wineries are also noted for their high rates of export revenue growth, as much as 50% annually.

In sum, the Argentine wine industry has achieved relative success in producing fine wine through painstaking, coordinated process and product experiments distributed across a relatively wide variety of micro-climates and firms.

III. Mendoza vs. San Juan – Inherited Resources as Indeterminate to Upgrading
This turnaround in the wine industry has not, however, been evenly distributed between Mendoza and San Juan. As shown in Table 4a, Mendoza accounts for a disproportional share of Argentina’s wine exports, fine wine production, and high quality grapes, even when controlling for overall wine and grape production. For instance, while Mendoza and San Juan account for
about 67% and 23% of wine, grapes, and vineyard surface area, respectively, Mendoza accounts for about 90% of wine exports (San Juan only about 6-7%). As of 2002, 65% of the Mendozan harvest and 30% of the San Juan harvest were classified of high and medium quality grapes. By all accounts, an increasingly broad base of Mendozan firms have been able to participate in the complex upgrading processes described above, while San Juan are just beginning to catch on.

Why would Mendoza take such a commanding lead in the Argentine wine industry and why in the 1990s and not before? There are four broad groups of comparative explanations that are related to the top-down and bottom-up views discussed in Section I.

IIIa. Inherited Natural Resources

One explanation would be that Mendoza is endowed with better soils and climates for high quality grape growing. This is undermined on two counts. One is that Mendoza and San Juan are neighboring provinces with many regions sharing similar climates and soil qualities (Cetrangolo et al. 2002). A second is that even the sub-regions of Mendoza that have been traditionally viewed as backward in their climate, soil, and practices have become the homes of leading high quality wineries and vineyards. As recently as the early 1990s, many experts viewed most of San Juan and such large Mendozan regions as the Zona Este as relegated permanently to the production of low grade table wine. Yet the Zona Este has significantly surpassed San Juan. By 1998, the Zona Este vineyards had more than doubled the surface area share of high and medium enological value gapes/vines, which now accounted for about 45% of the total in the Zona Este. At the same time, in San Juan the share of such grapes increased only about 20% to account for only about 10% of the total.

IIIb. Inherited Economic, Legal, and Political Incentives

Table 4b gives relevant comparative economic, social, legal, and political data. Differences in size, growth trends, poverty, or even fiscal management would be difficult to account for the performance differences. Economic incentives have limited explanatory power on two counts, as San Juan firms had strong incentives to invest and improve the industry. By the early 1990s, the wine industry accounted for a greater share of industry output in San Juan than in Mendoza. Moreover, San Juan was one of four provinces that benefited from of special industrial promotion programs (i.e., large tax breaks to investors) sponsored by the federal government in the 1980s and the 1990s. Through these programs, San Juan gained in the 1990s over $1 billion in direct investment from over 400 projects, about half of which were fully or
partially dedicated to wine and grape production. Indeed, Mendoza estimates it lost as much as $200 million per year in production output because of this program (CEM 1999).

Inherited political and legal institutional incentives alone do not seem to have strong explanatory power either. First, both provinces are subject to the same national regime of commercial law and property rights, and Argentina has consistently ranked relatively low on all international indices of private property rights protection, transparency, and business climate. Second, recent research shows that Mendoza is sometimes worse than San Juan in measures of legal efficiency and respect for private property. Third, the wine industry has been subject to largely the same national and regional regulatory laws; indeed in 1993, the two provinces signed an agreement to share all public policies toward the sector. Fourth, inherited political institutions do not offer obvious explanations. On the one hand, some scholars 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. On the other hand, some might argue that political competition might improve policy making (Remmer and Wibbels 2000). Yet, not only do both provinces share similar electoral laws, party systems, budget rules, and legislatures, they also have similar competitiveness scores in the gubernatorial elections. Moreover, in the late 1980s and early 1990s, the executive and legislative branches of both provinces were led by members of the same political party, the Peronists.

IIIc. Inherited Knowledge and Human Resources (but the limits of imported standards)

One could argue that Mendoza had a greater stock of human and knowledge resources or “absorptive capacity.” One source could be in the form of a large stock of licensed enologists. The trouble with this argument is that that by the early 1990s there was only one program in the region (Colegio Don Bosco in Mendoza) that graduated no more than five enologists per year who were employed in both provinces. (Walters 1999)

A stronger form of this argument is that Mendoza had a relatively greater stock of knowledgeable elites (Ziegler 1995). While both provinces were flooded after liberalization with European equipment and chemical suppliers, at the outset of the 1990s Mendozan upgrading was in many ways pioneered by a few elite firms (Argentine and foreign owned) that were led by Argentines with foreign education and contacts with well known foreign consultants.
Such firms as Chandon from France and Catena, Trapiche, and Arizu from Argentina used these knowledge and human resources to reorganize wine production, vineyard maintenance, and bottling in accordance with world standards. Moreover, they became sources of vertical knowledge diffusion as they developed systems of incentives and personalized technical assistance to extend process and product upgrading through to their grape suppliers. (Foster 1995, Walters 1999)

While this initial endowment of knowledgeable elites and pioneering firms was clearly important, it can not alone explain the broadbased upgrading that has occurred in Mendoza. First, given the lack of contractual enforcement and the inherent risk of the asset specificity, we would likely see high levels of concentration and vertical integration, namely by the initial elite firms. Yet, as the data presented in Section II show, that clearly has not been the case. Second, and beyond the fact that relatively few firms in Mendoza had the resources to hire globe trotting consultants, the highly contextualized process and product experiments inhibit the easy use of foreign methods and economic incentives. Because of the variation in climates, soils, irrigation, or pests and their impact on the grape (“70% of the wine’s value is in the grape”), 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. This issue was all the more challenging in Mendoza and San Juan because the great diversity of micro-climate mentioned above. For instance, in the mid and late 1990s, several leading enologists 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. Given the lack of contracts in the region, the growers bore almost all of the losses themselves.  

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 sum, the potential strength of the Argentine wine industry (diversity) was also a hindrance to the simple import of foreign knowledge as well as standard solutions of markets and hierarchies. In an environment of shallow knowledge, human, and financial resources, short term gains at imitation can easily limit diversity and lead to dead-ends. (Stark 2001; Evans 2004) These are exactly the concerns that scholars like Schmitz and Nadvi (1999), Humphrey and Schmitz (2004), and Gereffi (1999) have discussed when there are a very limited number of market and knowledge gate-keepers, be they domestic or foreign firms.
One alternative form of mediating complex coordination under uncertainty is the use of inherited social relations. In turn, one could argue that Mendoza had a superior stock or structure of social capital and associationalism than San Juan. However, the conventional reasoning falls short. First, if one prescribes to the view that the relative number of civic associations indicates richer social capital, then one would be disappointed. As shown in Table 4b both provinces have about the same number per 1000 inhabitants and indeed San Juan has more cooperatives (in general and in agriculture). Second, another view may be that policy coherence and consistency is determined by the presence of a strong encompassing business association that coordinates policy with the government (Ross Schneider 2004). But while San Juan has had five wine/grape sectoral associations, one economic federation, and one export association, Mendoza has had six wine/grape sectoral associations, two economic chambers, and one export association. In both provinces, the associations of winemakers (bodegas) and the encompassing economic associations historically had access to their respective provincial governments (Paladino and Jauregui 2001; Rofman 1999). But the dominant game during the 1980s was zero-sum as each attempted to appeal to their respective provincial governments for a limited amount of price supports and subsidies.

This is not to say that the social fabric and structure of associations are unimportant variables. Rather if one digs deeper into the quality and structure of social relations (Locke 1994, Safford 2004), one finds them to be both initially facilitating and self-limiting in diffusing knowledge and collaboration. Existing social and professional histories can be the basis of new forms of concerted, collective action (Sabel 1996b; Stark 1996; McDermott 2002). But if the social reference groups are very localized, then one might find a society of fragmented localities and associations.

Elite firms of Mendoza’s Primera Zona, such as those mentioned above, began organizing two main forms of learning based on past professional and regional ties. (Mendoza has five major zones; Primera Zona is regarded as having the richest soils and most optimal climate conditions.) First, elite firms created a few learning groups (CREA), each of which included 8-10 firms that met regularly to share tacit knowledge and help solve common problems of upgrading vineyards.11
Second, the elites began organizing wine and label evaluation committees. In general, these committees hold annual events, in which wineries present their products for review and prizes. Perhaps most noteworthy were the events evaluating the wine of different regions. (Paladino and Jauregui 2001; Walters 1999). In 1990, three organizations – the association for enologists (CLEIF), a leading winery association, Centro de Bodegueros, and the Enology Faculty Don Bosco – teamed up to run an annual event to award and improve wine quality, EVICO. In EVICO a panel of widely respected enologists benchmarks the year’s harvest and the wines as well as provide constructive advice on improving the wines during and after processing. While EVICO increasingly grew in notoriety with a few hundred entries of products, its limitation was that participation, like the Grupos CREA, was largely limited to the most elite wineries of the Primera Zona. Winemakers from the historically more backward and less climatic advantageous Zona Sur, Zona Este (of Mendoza) or San Juan did not participant. They felt uncomfortable in a crowd that had always criticized the poor quality of their regions’ products, and also felt there was little to learn since discussions focused on the finest varietals, not the kind of intermediate and low enological quality grapes that composed their wine supply chains. (Walters 1999, p.151)

Eventually, the enologists, wineries, and associations of these regions organized similar events, CODEVIN San Rafael (Zona Sur) in 1995 and CODEVIN de Zona Este 1997. These events grew rapidly from a few dozen samples in the first year to over 150 each within two to three years. They offered forums for professionals to learn from one another and demonstrate the quality of their work to reticent winery owners, the elites of the Primera Zona and the press. (Walters 1999) Moreover, the participation of a few wineries from San Juan led to the organization in 1997 of EVISAN, a similar event in San Juan. These uses of existing social ties helped spur debates about the direction of the industry and accelerate learning and the sharing of tacit knowledge, as actors from firms, associations, and educational and public institutions began to see the benefits of gradual collaboration and suspension of their institutional and regional identities. As Walters notes (1999), “[They] have 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. Most initial change began in Mendoza’s Primera Zona, the elites of which had always viewed the other sub-regions as incapable producing fine varietals because of their apparent substandard economic, educational, and climate conditions (Walters 1999). Indeed, because of this, 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” (Walters 1999).

In many ways, this dual nature of social structure – being both facilitating and exclusionary, reflects the prior research of Locke (1994), Cohen and Rogers (1992), Safford (2004), and Schneider (2004). Distinct localities may each have a set of social ties and associations that help initial cooperation and learning. But the need for ever more specific knowledge and skills, coupled with traditional rivalries, identities, and resource inequalities, creates barriers to the processes of aggregation and joint action that are vital for a broader sustainable base of innovation. (Ostrom 1999, Schmitz and Nadvi 1999)

Such a discussion points to the importance for higher level institutions that can bridge the gulfs between localities or social groups. In turn, the creation of organizational or institutional forms that help coordinate decentralized experiments and develop upgrading capabilities is simultaneous to the creation of institutions that facilitate collaboration between previously antagonistic groups or associations. This is indeed the core success of Mendoza and its notable difference with San Juan by the end of the 1990s. But these public-private institutions were not historically given to Mendoza.

Where would higher level coordinating institutions come from if the given associations in Mendoza were more fragmenting than aggregating? As Schneider (2004) notes, policymakers still have the means, especially in times of crisis, to not only create public goods but also reshape the behavior of social groups through the process of creating new policies. It is in this spirit where one can reframe the upgrading problem as a comparative political one. A key comparative difference would be whether the Mendoza and San Juan governments would
develop political approaches to reform that were exclusionary and incentive-based or more in line with the conditions of deliberative restructuring discussed in Section I.

IV. Politics and the Emergence of Public-Private Institutions

I argue here that the key comparative difference between Mendoza and San Juan was the ability of the former to build gradually a constellation of public-private institutions that not only help firms improve their skills and knowledge but also help their respective associations form new lines of communication and coordination.

Besides the broader economic instability of Argentina, by the late 1980s both provinces faced the dual crisis of collapsing demand and investment in the wine industry and the insolvency of their respective state (i.e. provincial) owned wineries, which dominated local production and were used the respective provincial governments to advance price controls. This section first discusses how differing policy choices towards this dual crisis resulted in different paths of upgrading and institutional development. It then revisits the importance of inherited political and social conditions in shaping the different political approaches.

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

San Juan

Reflecting the broader policies of Argentina, San Juan’s policy toward the wine industry was based on rapid privatization and arm’s-length economic incentives for investment. These policies were set by an insulated government, largely without the consultation of major socio-economic groups. This pattern can be seen in three ways.

First, the wineries, CAVIC and Giol, were owned by the governments of, respectively, San Juan and Mendoza. Both were used to regulate the wine markets and support their thousands of small and medium sized grape suppliers. Both were also hemorrhaging in debt as losses mounted. In the mid-1980s, the San Juan government privatized parts of CAVIC, but the resulting company soon collapsed and the government was forced to take it over and liquidate it.

Second, San Juan also had another key component to the sector: the now infamous promoción industrial policy of the federal government. This policy effectively promoted investments in underdeveloped provinces via a basket of large tax incentives. It was started in 1973 and included San Juan in 1983 as the fourth beneficiary. By 1990, about 290 investment projects were financed in San Juan at a fiscal cost of about $1.2 billion and appeared to have had a significant impact in manufacturing and agriculture expansion in San Juan, with the province
increasing output at almost three times the rates of the country and Mendoza (CEM 1999). Although partially suspended in 1987, President Menem renewed it, first in 1992 by decree and then in 1996 by law (Guinazu 2003; Zudaire 2001). Its revised form focused on deferring about 75% of income taxes to the investor in agroindustrial and tourism projects in four provinces, Catamarca, La Rioja, San Luis, and San Juan. While reports vary, the new version is estimated to have had a federal fiscal cost of about $7 billion in the 1990s (which in turn greatly impacts other provinces because of the tax revenue sharing system). As mentioned earlier, San Juan appears to have gained over 400 projects and about $1 billion in investment, the bulk of which went to agriculture. (Consejo Empresario Mendocino 1999; Borsani 2001)

The key is that the new version of industrial promotion (diferimiento impositivo) became the main framework for San Juan in promoting new investment in the wine industry in the 1990s. 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 (Borsani 2001; Allub 1996). But both independent researchers (Allub 1996; Rofman 1999) as well as the Ministry of Economy of San Juan itself (2003) have argued that the benefits to the agroindustry in general, and the wine sector in particular, have been limited. Similar to such promotion schemes in Argentina, the main beneficiaries were large firms with rather short-term interests. Moreover, many of the beneficiaries were firms with little knowledge or capacities in undertaking the arduous, time consuming, and exacting experiments in transforming vineyards and developing a broad base of capable grape suppliers. Over time, the thousands of small grape farmers in San Juan, many existing small and medium sized wineries, and the respective trade associations grew increasingly disillusioned with the policy and antagonistic toward both the government and the main San Juan winery association, which had about 15 large firms as its membership (Rofman 1999). Small and medium sized firms and farmers had no real access to the policy, while there were no other programs or institutions aiding them in training, finance, exports, R&D, and technology change. In a sense, San Juan had cut a Faustian deal that limited upgrading and kept it wed to short term gains in the large volume business of table wine and mosto (grape juice concentrate).

Third, San Juan failed on various occasions in the 1990s to build new public-private institutions to help regulate and promote the development of the wine industry. 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 prices and to share new policies toward the wine sector. On three different occasions between 1989 and 1999, San Juan 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 toward the dual crisis and the sector in general 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 elected to “privatize” the Mendozan state-owned winery. Giol produced over 10% of the nation’s wine, processed over 15% of the provinces grapes from more than 4000 small and medium sized grape suppliers, and by 1987 was producing a deficit of over $500,000 per month with a debt of over $35 million. The Bordon administration was wary of the poor privatization of Cavic in San Juan, and was equally concerned about the socio-political unrest that restructuring Giol set off among large business interests, labor unions, and the communities of its thousands of grape suppliers. Hence, the administration aimed to use the restructuring of Giol as a way initiated broader industry restructuring and to use a process that forged consensus among the warring factions. It did so by empowering a variety of public and private stakeholders to participate in transforming Giol into a federation of cooperatives (FECOVITA).

First, Bordon and the new Giol director, Eduardo Sancho (the former head of the Federation of Wine Cooperatives) led a drive to bring win over stakeholders. While the governor appointed three of the six member board, the other three were elected “by the people” (Paladino and Morales 1994a). The government and Giol organized a large publicity and information dissemination campaign, institutionalized constant consultations with the labor unions and the trade associations, and organized over 500 community meetings open to the public that included representatives from all sides – the provincial government, the
municipalities, labor unions, civic associations, and trade associations. Moreover, as part of the negotiations to downsize employment but provide special retirement, severance, and training assistance, the labor unions gained a non-voting position on the board of Giol.

Second, the government aimed to use the transformation of Giol into a federation of cooperatives to begin to address the long-term problems of fragmented, low income grape suppliers with few skills, resources, and knowledge bases of their own. In turn, government and Giol officials took great efforts to encourage and aid small and medium size farmers and winemakers to organize themselves into cooperatives and prepare themselves for greater collective management responsibilities. Besides organizing the aforementioned meetings, the government offered new credit programs for both working and fixed capital, leased the Giol wineries to coops at special rates, provided technical and legal advice, and provided 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 producers of Giol (Paladino and Morales 1994a,b; Juri 1990).

The impact of the process and strategy to transform GIOL can be seen at several levels. First, Fecovita soon became profit-making, its leverage was slashed, and the new cooperatives gained, as they all virtually paid back the special loans ahead of maturity.\textsuperscript{14} Fecovita has maintained its dominant position domestically and become a strong exporter in both table and medium quality fine wine (e.g. Marcus James in the US), with major improvements in packaging, bottling, and label management (Amendola 2003). By 2002 FECOVITA had sales of over $54 million, 28\% of which was exports.

Second, the Fecovita experiment has been an important source of providing resources and training to small producers and has given an important boost to the development of wine and grape producer cooperatives in Mendoza. Today, Fecovita includes 32 of approximately 50 cooperatives in the sector in Mendoza, commercializes over 80\% of the wine made by its members, and each cooperative ranges from 20 to 120 members. Its dual attractions for members, besides self-governance, are its reputation for consistent payment to members at preferred prices and consistent investment in improving the production capabilities of members and assistance in helping members upgrade their grape quality. Fecovita helps members gain access to credit, markets, inputs, training and knowledge at low cost through both combined bargaining power and alliances it has created with banks, domestic and international distributors,
public-private research and extension organizations in Mendoza, such as INTA, the Instituto Desarrollo Rural, and the agronomy faculty of the Universidad Nacional de Cuyo (Amendola 2003).

During the 1990s, the number of cooperatives in the wine sector grew by about 30% in Mendoza, while there was virtually no change in San Juan, despite its overall growth in agro cooperatives. 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. Similar to Fecovita and its members, the cooperative model has become well-known for its joint management model focused on collective problem-solving systems, pooling of resources, and upgrading. About 35% of the output of Mendozan cooperatives is now focused on premium and super-premium wines (Amendola et al. 2003).

Third, the Fecovita experiment appears to have launched a broader movement to create new policy and new institutions in a decentralized model based on government co-developing and co-managing policy with socioeconomic actors. This movement has a distinguishing impact on Menodzan policy and the transformation of civic organizations.

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. Virtually all programs are jointly developed and administered by a government body and approximately 50 non-governmental organizations. In contrast, San Juan’s relatively few support programs mostly come from the federal government and only a handful are managed with the assistance of a few non-governmental organizations.

It may then be no coincidence that there has been fundamental change in the broader environment of civic groups, secondary associations and NGOs in Mendoza in the 1990s. For instance, according to the data from the UNDP/IDB civil society index in Argentina, by 2000 San Juan continued to have about the same number of civic associations per capita as in Mendoza. But, in both absolute and per capita terms, Mendoza has many more civic organizations whose governance and membership are inclusive, whose funding comes from both internal and external sources, and whose benefits are for public use (e.g. 419 to 92). 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. Indeed, when one divides the civic organizations in general into thematic areas, one finds that Mendoza has many more dedicated to economic, training, education, sciences, and SMEs than in San Juan. In contrast, San Juan has many social, neighborhood, and sports clubs.\textsuperscript{18}

In short, the richness and effectiveness of Mendoza’s policy portfolio toward the wine industry is not a product of state largess or of a priori intelligence or civic-mindedness from socio-economic actors. Rather, it should be seen as part of a dense public-private network of organizations that are pooling information and resources while improving their collective capacities to problem solve. I now turn to a more detailed analysis of the most prominent public-private institutions in Mendoza that have had direct impacts on upgrading in the wine industry.

\textbf{IVb. Experimenting with Public-Private Organizations}

With the Fecovita experience as its template, Mendoza’s innovation would be a series of experiments with public-private institutions that aimed to incorporate diverse economic and political groups. The combination of multi-party participation and the principles of delegation and deliberation allowed these institutions to forge new ties among previously isolated, antagonistic groups and accelerate learning at both the public policy and firm levels. The major institutional experiments of the 1990s included those of both federal origin (INTA and INV) and provincial origin (ProMendoza, IDR, IDITS, Fondo Vitivinicola, and the Fondo para la Transformacion y Crecimiento). Despite their variation in function and origin, the common threads are: 1) governance, membership, and financing by relevant public and private organizations; 2) the use of overlapping ties and collective problem-solving for the creation and improvement of services provided by the institution; 3) the use of the institutions as forums of deliberation to identify new areas of collective action.

\textit{Overviews of governance, finances, and membership}

INTA (Instituto Nacional de Tecnología Agropecuaria) was created in 1956 and is part of the Secretary of Agriculture of the federal government. In 1991, INTA experienced two administrative shocks – its budget was reduced and its regional centers assumed greater
While a national Executive Council set broad policy and budget agendas, INTA was reorganized into 15 (and then ten) regional centers, one of which was for the Cuyo region. While this regional center has sometimes included the provinces of La Rioja and San Luis, it always included Mendoza and San Juan as the core. Each region acts as a semi-autonomous entity, governed by a council that is dominated by representatives of the given region’s provincial governments, major universities, branches of national associations and government agencies, and relevant sectoral associations. The regional centers often administer and plan regional development and technology R&D and oversee the budgets and activities (e.g., detailed technology and inputs testing, extension training, and consulting services) that are implemented in the sub-regional EEAs (Estaciones Experimentales Agropecuarias). The Centro Regional Cuyo has its head office in Mendoza and has five EEAs, four of which are in Mendoza and one in San Juan.

These reforms decentralized INTA significantly, and left the regional centers and EEAs dependent on embedding themselves in to the regions (Casaburi 1999). For instance, the central budget funds cover mainly the salaries (dictated by a national INTA job classification) and some facilities overhead for INTA Cuyo. Half of the budget of INTA Cuyo and its EEAs is covered by the sale of services, institutional alliances/programs in the region, and the NGOs (“cooperadoras”) that both the center and the EEAs establish to develop R&D and training projects with firms and other institutions. Moreover, advisory councils of each EEA and each cooperadora are composed of representatives of relevant government agencies (provincial and municipal), sectoral associations, firms, and educational institutions. For example, the council for the EEA Junin (in the Zona Este of Mendoza) has representatives from 25 entities, including the municipal governments, IDR and ISCAMEN (the provincial phytosanitary control agency), the provincial government, the sub-regional branch of IDR, and several producer and agroindustry associations.

The Fondo Vitivinicola was created in 1994 by a joint effort of sectoral (wine and grape producer) associations and the government of Mendoza in the wake of a destructively harsh winter that caused great volatility in grape prices and left thousands of SME producers devastated. As mentioned earlier, this effort was originally part of the agreement signed in 1993 by San Juan and Mendoza, with the former never implementing it. Creating the Fondo set up a new system to help stabilize the wine and grape market while also helping small farmers. By
law, any firm that uses at least 20% of its input grapes for most (the naturally juice sweetner) 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. It uses the money to promote the Argentine wine industry at home and abroad, including marketing campaigns and representing the sector institutionally around the world. The Fondo’s governing council includes representatives from the government of Mendoza and some of its related agencies, the INV, and the relevant sectoral associations.

In 1993-94 Mendoza started a series of policies to help reduce the risk of weather damage (i.e., sudden freezes, hail) and aid producers in converting vines to higher quality. The institutional core was the Fondo para la Transformacion y el Crecimiento (FTC), which was created in late 1993 by provincial law. The FTC is completely self-financing, with its initial capital coming from the privatization of some oil resources. The FTC subsidizes loans to mainly SMEs for the specific areas just mentioned. While the FTC is under the authority of the governor, it is an independent legal entity with several sub-regional advisory councils that are created by the municipalities and that monitor the use of funds and identify new problems.

In the mid-1990s the Mendozan government launched three key institutional initiatives, two sectoral research institutes (IDR for agriculture and IDITS for industry) and ProMendoza for export promotion. All three of these entities were created by law, are legally non-profits with close links to the government, and have mixed sources of financing: substantial provisions from the provincial budget, contributions from member associations, and fees from services. ProMendoza was founded by the government and the 3 broadest business associations of Mendoza (Union Comercial de Industrial de Mendoza, Bolsa de Comercio de Mendoza, and the Federacion Económica de Mendoza). Modeled after ProChile, it gathers information on relevant export markets for Mendozan industries, disseminates technical and market information to the government, public and firms, organizes trade delegations and trade fairs abroad, and runs seminars to train firms to improve their strategies in specific markets and sectors.

The Instituto Desarrollo Rural (IDR) has 36 founding member entities, including the government, the academic community, INTA Cuyo, and relevant agricultural and agroindustry associations. The founding members elect a 16 member board every two years. IDR was founded to improve technical data collection and dissemination in all areas of Mendozan agriculture.
Unique services and overlapping ties as sources of information and adjustment

By emerging from a multi-party effort to solve common problems or constraints, these institutions, first and foremost began to provide a scale and scope of resources and services that the individual or regional groups could not do alone and that other provinces lacked. For instance, INTA Cuyo pioneered a detailed mapping of all the micro-climates and locations of grapes/vines in the region. This allowed firms to better understand the rich variety of soil and climate potential. INTA and IDR (and to a certain degree IDITs) provide the R&D resources, knowledge bases, teams of well-trained experts, and training services that even the most elite wineries can hardly provide themselves. By the end of the 1990s, ProMendoza had representations via the Argentine embassies in the US, EU, and Brazil, had helped almost 1000 firms from various sectors participate in international trade fairs, and maintained an annual budget of about $2 million. While this figure may not seem relatively large, it demonstrated a commitment to export growth beyond that of any other government (provincial or federal) in Argentina – the federal agency for export promotion of all of Argentina (ExportAr) had a budget of only about $2.7 million. Moreover, in a country that did not even have an SME support agency until 1998 and historically very poor SME financing (McDermott 2000), the FTC provided enviable credit supports of over $50 million dollars for about 5000 firms by 2000 years.

The actual execution of the services, policies, and indeed the institutions and inter-firm networks did not happen overnight or by fiat. By virtue of the governance, membership, and organizational structures each institution became: a) more embedded in the constellation of firms and associations of Mendoza, b) increasingly tied directly and indirectly with one another, and c) increasingly central, connecting the public and private domains as well as previously weak linked or antagonistic groups. Figures 3a and 3b depict this process in a simplified form. Figure 3a shows how in the beginning of the 1990s firms and associations of different parts of the value chain and regions had few direct ties and lines of communication with one another and with the government. Figure 3b shows how by the end of the 1990s the new institutions were tie these different groups and government agencies increasingly together.

Figures 4a and 4b show the same story in more complex form, using membership and board data of relevant institutions and associations. Figure 4a shows the state of the Mendozan wine industry in 1989 – most associations are isolate and the few that are not are clumped together in isolated communities or ghettos. Moreover the government of Menodza (in this case
the Ministry of Economy, is itself isolated. Figure 4b shows how the public-private institutions constructed during the 1990s in Mendoza are the key bridges or “brokers” (Burst 1992) between the different professional and sectoral communities as well as help embed government agencies at the cross roads of knowledge communities. This multi-valent form of embeddedness via the collective problem solving missions would help improve the institutions as well as transform the actual participants.

Take for example the development of the INTA Cuyo. Its increased embeddedness has allowed it to standout among the INTA system and its Mendozan activities expanded substantively more in the 1990s than in San Juan. A key goal in INTA is not only to provide relevant services but also to build support networks among itself, other institutions, and firms, large and small. This occurs through network learning models (like the CREA method discussed above) as well as through alliances and joint-projects between the center, the EEAs, and their respective cooperadoras with local and provincial institutions, governments, firms and associations. There is no doubt that INTA Cuyo and the EEAs in Mendoza have been especially proactive. But their advances in all areas are also part of the vibrant response by public and private actors in Mendoza. First, by the end of the 1990s there were seven times more INTA employees working on viticulture issues full time in Mendoza than in San Juan, a figure disproportional to the relative differences in the size the sectors or the number of EEAs for each province.

Second, INTA in Mendoza has been able to overcome an especially serious historical criticism of the INTA system in general – that its bureaucratic lethargy made its knowledge and technology base too backward to be of use for the most advanced firms but also too advanced and unresponsive to the needs of the thousand of small, poorer producers (Casaburi 1999). By opening its councils to representatives of the most elite and most backward as well as adapting R&D and training services for each constituency, INTA in Mendoza has gradually amassed a set of human and knowledge resources known for both their depth and scope. Contracts for services or longer term projects in R&D and training can be bi-lateral (with one other firm or association) but more often they are multilateral in nature, such as the agreement with FECOVITA, IDR, and the Agronomy Faculty of the Universidad Nacional de Cuyo. They can do the most advanced testing of new varietal clones under multiple modes of growing in multiple micro-climates as
well as provide a comprehensive program to aid the most backward of producers in becoming suppliers of fine wine grapes.

For instance, although INTA’s national Cambio Rural Program (CR) met with varying success since its launch in 1993-94, CR in Mendoza had some of the best participation and cost-benefit rates in the country and far better than in San Juan. (Cheppi 2000; Lattuada 2000) CR was based on the CREA model but geared toward small, poorer producers as INTA subsidized the cost of the consultants and adapted the training toward upgrading more backward producers. A key factor for INTA Mendoza’s success with CR, especially toward grape growers, has been its ability to draw on the knowledge and resources of public and private partners. Technology, vineyard management practices, results from varietal and inputs testing, and market standards came from its own expertise as well as the data and experiences of the firms, institutions, and associations that were linked to INTA. Moreover, the government of Mendoza, through its own budget and through the FTC, contributed some initial financing and then covered the bulk of the costs in the late 1990s when the federal government decided not to renew the budget for CR nationwide. INTA Mendoza also took great efforts to improve the CR program over time, drawing on the response of actual participants and the feedback it received via its advisory councils and its own participation in other Mendozan institutions. It adapted the program to reach producers in regions with histories of lower quality grape production and methods by exposing farmers to new technologies and standards as well as promoting information exchange and joint growing projects among themselves and with more advanced wineries.

The example of INTA in Mendoza shows how network building and capabilities improvements are multi-valent and interactive through problem solving. INTA was an instigator in building new ties among firms, associations and institutions as well as providing a unique set of collective resources. At the same time, it was a recipient and vessel of knowledge and resources as it sought to improve its programs and expand its portfolio of joint projects. This pattern can be seen in other substantive areas of the wine sector as well.

ProMendoza and IDR have both made great use of their variety of ties to different producer groups and regions. On the one hand, they have been proactive in getting firms and associations to collaborate in new ways, such as using training methods that focus on joint projects of firms, requiring open sharing of information and benchmarking, and having members
and constituent groups define collective priorities periodically. On the other hand, ProMendoza and IDR have constantly adapted and expanded their research and services based on the input from its members and constituents. For instance, the Ministry of Economy opened up a network of regional offices in the late 1990s to house local operations for IDR, ProMendoza, ISCAMEN, the FTC, and the statistical department. IDR has gone from collecting basic producer and market data with institutions and associations like INV, INTA, and the Bolsa de Comercio to offering local firms and associations access to their data bases on best practices as well as more timely and specific analyses of comparative harvest results and sectoral value chains. ProMendoza has moved beyond providing a clearing house for information on relevant export markets. It expanded its training seminars and trade fair representations to include ever more firms from different regions and sectors; disseminates timely quality standards of foreign wine markets to all levels of producers and all relevant institutions; sponsors groups of foreign trade journalists for visits to different wine regions of Argentina; and to collaborates with Wines of Argentina (a export marketing initiative of elite wineries) to develop campaigns abroad that brand Argentine wine as a unique product.

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

The multi-valent structure and interactive process of the public-private institutions has, in turn, led to changes in other older, more archaic institutions and in government policy. Increased overlapping ties has spurred other major Mendozan universities, Universidad Nacional de Cuyo and Universidad Catolica de Lujan to begin to link directly its educational and research activities to the wine sector. By the late 1990s, the two had new or vastly expanded degree programs in enology, viticulture, or some combination thereof.22 By 2001, they were also participating in research and training programs directly with firms and associations as well as with INTA and IDR. A similar development has occurred in the areas of technical education and food safety controls.23 Moreover, by the end of the 1990s, representatives of the aforementioned institutions, the universities, and the government were increasingly participating in the different wine and label evaluation forums discussed above, opening up new lines of communication and comparison between the different regions. (Paladino and Jauregui 2001)

Deliberations in the various advisory councils have helped direct government resources to new or more refined programs as well as reform existing regulations. For instance, as a response to concerns of its various partners in the different institutions, the government initiated policy
trials, such as the expansion of FTC credit programs to include financial support for firms during
the grape harvest or greater government support for new hazard insurance for small producers,
new technologies in combating hail storms, or increased used of municipal councils for the
distribution of subsidized heaters used in vineyard and orchards during the worst parts of winter.
Indeed, the FTC programs have given substantial assistance in converting the vineyards of more
backward sub-regions, like the Zona Este (Salvarredi 2001). In the late 1990s, the government
modified laws to improve the protection of the contracting rights of wine and grape suppliers, to
help securitize the grape market, and alter the criteria under which wineries have to pay the
“mosto tax” to the Fondo Vitvinicola (IDR 2001). The general emphasis in all these cases has
been to balance the need for greater incentives and resources for fine wine exports, market
stability, and economic growth of small producers.

The deliberations can also help the constituents and government determine when to lobby
the federal government for priority concerns. For instance, while the INV (Instituto Nacional de
Vitivinicola) is the federal regulatory body certifying the validity of wine products and the
primary statistical agency for the wine industry, collective action on the part of Mendozan
producers and government has initiated important changes in the INV’s structure and substance.
The Mendozans led political negotiations in 1995-96 to create a new Interprovincial Consultative
Council that includes seven representatives of the wine and mosto value chain and effectively
decentralize its decision-making process (Azpiazu and 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 have been able to
secure improvements in the INV’s technical capabilities and even expand its mission to include
such issues as certifying DOC standards. Another key use of informed collective political capital
has been in export policy. Through ProMendoza and other channels the Mendozan government
has 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.

Perhaps the most significant microcosm of the workings of this institutionalized network
based on deliberation is the creation of the Ley Pevi and its governing body, COVIAR, which
was mentioned in the beginning of this article. The Ley Pevi effectively began in the late 1990s
in the advisory councils and various seminars of the aforementioned institutions. As these
institutions began to solve collective problems in training, quality, R&D, exports and market data and as Argentina gained a foothold in the key world wine markets, attention turned to concerns of how the firms would improve their competitive position.\textsuperscript{24} This demanded greater resources and institutional support to continually improve and expand the network of high quality grape producers, the R&D in new clones, technology and precision viticulture, and vastly augment collective and individual marketing and distribution capabilities in international markets. These discussions converged at a series of meetings of the advisory council of the EEA Mendoza that decided to initiate a plan to investigate, develop, and debate 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. The technical team performed a SWOT analysis of the Argentine wine industry, investigated the policies and institutions in such countries as Chile and Australia, and also benchmarked Argentina against the other major wine exporting nations. The executive team was charged with soliciting the funds needed for such an analysis and beginning a campaign to gain support for such a strategy and its eventually legal backing among political and industry leaders within and outside of Mendoza. Most of the funds came from the Fondo Vitivinicola. As the analysis and strategy was finalized, the teams organized a series of workshops over an 18 month period in the major wine making sub regions of Mendoza, San Juan, La Rioja, Salta, Neuquen and even in Buenos Aires. Participants included representatives of producers, winemakers, all levels of government, wine and grape consultants, and journalists. These forums had the dual role of gaining input from these various constituencies and of promoting/explaining the strategy and its eventual resource and political prerequisites. After the strategy was revised and a strong, broad coalition of public and private actors was formed, the strategy was converted into a legislation proposal by a working group of relevant policymakers and the aforementioned executive and technical teams.

The Ley Pevi had three fundamental provisions. First, it mapped out a national policy to promote the innovative capacities and export objectives via a stronger, better endowed institutions in Mendoza as well as in the other relevant provinces. In many ways, it was an expanded, improved model developed in Mendoza that focused on using overlapping ties among public and private institutions and organization to improve the capacity and strategic use of human, material, and knowledge resources. Second, in order to protect its autonomy, avoid the backlashes from other interest groups, and increase the incentives of stakeholders, it required that
The additional funding would come from a new tax on the sales of wine products. Federal agencies, including the INV, would monitor and collect the tax. Third, the Ley Pevi and all its components would be governed by a new entity, COVIAR, whose 12 member executive and advisory boards are composed, again in the Mendozan style, by representatives of the federal and relevant provincial governments as well as the leading winery 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 discount the individual explanatory power of such *a priori* structural factors as natural resource, knowledge, and economic endowments, social capital, and provincial electoral institutions. Rather, the article has argued that the relative success of Mendoza is due to a political approach to reform based on the development of public-private institutions guided by the principles of delegation and deliberation. I have called this approach “deliberative restructuring,” as it emphasizes the experimental process of constructing a new institutional and social fabric, and not simply the optimal rule, incentive or preexisting social capital.

As with many complex industries, the dual problem of creating the innovative capacities for the wine industry is breaking old practices as well as getting diverse, often conflicting groups in the value chain to collaborate in previously unimagined ways. Mendoza firms and their attendant business associations did recognize that upgrading cut across firm boundaries, and some 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 and “ghetto-ization” of an industry, especially when diversity is coupled with a history of distrust, false starts, regional biases as well as resource and skill inequality.

Mendoza appeared to overcome these barriers gradually from a political approach that aimed at both incorporating and empowering the diverse set of public and private actors in the construction of new policies and institutions. First, in the face of a crisis or constraint, the government engaged the relevant sectoral groups to solve the problem collectively via a new set
of joint institutional resources. Second, as the relevant public and private actors delegated resources and responsibilities to the new institution, the problem solving disciplines of the multi-party structures became a form of deliberative governance that informed both stakeholders and policy-makers.

There were several advantages of this approach to industrial policy and institution building. First, the multi-constituent nature of membership, service provision, and governance was able to convene previously antagonistic groups. Second, the focus on collective problem solving in governance and services through iterative deliberations about priorities and the evaluation of remedies allowed the participants to begin to share knowledge and resources and collaborate in new ways. Third, subsequently, 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.

Such a political constructionist analysis invites two key issues for further examination – the socio-political conditions that give rise to deliberative restructuring and that can sustain and expand this approach over time and place. As for the first issue, the comparison in this article discounts the determinism of inherited local social, political, and economic structures for institutional change. This claim is not new, as there is a growing set of research that views economic and institutional change (for better or worse) as the product policy choices. This research, like my own, attempts to capture continuity and change by opening the door for ongoing political struggles to impact the policy choices. In turn, the issue of initial conditions can be framed by identifying how the key broader struggles are shaping local decisions. The research on federalist politics and systemic vulnerabilities in developing countries can be helpful here. The literature on federalism has noted how attempts by central governments to implement national reforms and maintain political support create varying incentive structures and resources for sub-national actors. (Weingast 1995; Guinazu 2003; Falleti 2005; Montero and Samuels 2004). On the one hand, federalism allows local experiments as well as local caudillos or autocracies to thrive. On the other hand, federalist politics can block or support local changes in unexpected ways. Indeed, San Juan and Mendoza were on the opposite ends of the federalist political game promulgated by President Menem. San Juan’s choice to continue industrial development as part of the broader program of industrial promotion was in many ways shaped by Menem’s efforts to gain the support of smaller provinces via this and other similar programs. In
contrast, Bordon and his team came to power in 1987 as part of a group within the Peronist party that aimed to reform the party and its populist past. Although the reformists lost, with the rise of Menem to the presidency in 1989, Bordon would spearhead an intra-Peronist opposition movement against Menem’s efforts to change the constitution and allow for his re-election (Levitsky 2003). Menem effectively won this struggle again, with the governors of small provinces as a key base of support. Through the 1990s, the Mendozan governors, though Peronists, were politically isolated. In turn, Mendozan governors were politically constrained not only by local electoral laws, but also by the broader political struggles over the role of central government and control of the Peronist party. Such an interpretation coincides with the literature arguing that sustainable reforms emerge when governments face a combination of social, economic, and political constraints. Doner et al (2005)

This interpretation is not suggesting that only the presence of constraints leads directly to change and to reform approaches like deliberative restructuring. Rather, it suggests that researchers pay close attention to ways sub-national and national factors promote and inhibit the ability of governments to forge new public-private institutions with a variety of stakeholder groups. A similar suggestion can be made over the issues of sustainability and scaling or replication of a new institutional model for development. Typically, the expansion of any local institutional innovation faces two constraints – the roles of large MNCs and coordination with other government bodies (national and sub-national). (Ostrom 1999; Schmitz 2004) The evidence from recent research on both factors is not wholly positive. MNCs can bring know-how, standards, and technology, but also can limit the development more complex organizational capabilities of local firms and erode local value creating capabilities. At the same time, a history of a domineering central government and weak cooperation among sub-national governments can equally impede expansion of any local model. Indeed, Argentine politics of the past 15 years is often noted for the poor coordination among national level business association (Schneider 2004), for a party system that weakens the role of the congress (Jones et al. 2002), and for a national executive that plays provincial governments off one another to amass greater policy control. (Levitsky 2003)

At the risk of sounding naïve, the advances in Mendoza and creation of the Ley PEVI/COVIAR have the foundations of limiting, if not altering, these forces against sustainability and expansion. First, 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). Second, the combination of overlapping ties among the relevant institutions and associations and deliberative form of governance enhances the ability of both public and private actors to monitor one another. For instance, despite changes in directors, government administrations, and political coalitions, the Mendozan institutions continue to be stable and self-adapting, something rather unusual for Argentina (Levitsky and Murillo forthcoming). To the extent that COVIAR maintains these principles, one might well see a new politics of industrial development emerging out of the Argentine central government. We have already begun to witness the impact of the Mendoza approach and COVIAR in San Juan. Since 2002, the San Juan government and relevant associations have openly criticized the old approach of tax incentives and begun to form build new institutional resources for training, R&D, and export promotion. (Ministerio de Economia de San Juan 2003) Institutions like ProMendoza and INTA have lent a strong hand in these efforts. Moreover, in an effort to participate actively in COVIAR, some San Juan firms have broken away with the old guard and formed new sectoral associations.

In sum, as much as the principles of delegation and deliberation have been vital for the creation of public-private institutions for upgrading in Mendoza, they also should be viewed as central to any reforms at the federal level. Rather than searching the optimal market preserving and financial incentives, scholars of development may be better served by exploring the conditions under which different levels of government can learn to monitor one another while pursuing joint action.
Table 1: Argentina and its Major Competitors in the World Wine Market

<table>
<thead>
<tr>
<th>Country</th>
<th>Consumption</th>
<th>Production</th>
<th>Vine Surface Area</th>
<th>Exports</th>
<th>Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Liters/capita</td>
<td>Total hL (00's)</td>
<td>Total hL (000's)</td>
<td>Hctes (000's)</td>
<td>Total hL 000's</td>
</tr>
<tr>
<td>France</td>
<td>55</td>
<td>33,030</td>
<td>47,353</td>
<td>852</td>
<td>14,962</td>
</tr>
<tr>
<td>Italy</td>
<td>50</td>
<td>28,764</td>
<td>44,086</td>
<td>868</td>
<td>12,802</td>
</tr>
<tr>
<td>Spain</td>
<td>29.4</td>
<td>11,866</td>
<td>46,238</td>
<td>1,166</td>
<td>11,758</td>
</tr>
<tr>
<td>Australia</td>
<td>20.9</td>
<td>4,169</td>
<td>12,550</td>
<td>144</td>
<td>5,365</td>
</tr>
<tr>
<td>Chile</td>
<td>15.2</td>
<td>2,402</td>
<td>5,752*</td>
<td>168</td>
<td>4,029</td>
</tr>
<tr>
<td>USA</td>
<td>9.2</td>
<td>26,552</td>
<td>23,500</td>
<td>386</td>
<td>3,293</td>
</tr>
<tr>
<td>Germany</td>
<td>24.4</td>
<td>2,012</td>
<td>8,289</td>
<td>98</td>
<td>2,702</td>
</tr>
<tr>
<td>South Africa</td>
<td>9</td>
<td>4,188</td>
<td>7,610</td>
<td>107</td>
<td>2,329</td>
</tr>
<tr>
<td>Argentina</td>
<td>35.3</td>
<td>1,352</td>
<td>11,800</td>
<td>201</td>
<td>1,540</td>
</tr>
<tr>
<td>New Zealand</td>
<td>19.2</td>
<td>764</td>
<td>550</td>
<td>15</td>
<td>2,930*</td>
</tr>
<tr>
<td>WORLD</td>
<td>4</td>
<td>248,300</td>
<td>271,261</td>
<td>7,504</td>
<td>6,176</td>
</tr>
</tbody>
</table>

Sources: HBS (2001); Wittwer and Anderson (2004)
Figures 1a,b: The Growth of Argentine Wine Exports (by Volume and Value)

Source: INV.
Table 2a.  Scores for Argentine and Chilean Wines by *Wine Enthusiast*

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>85</td>
<td>84</td>
<td>83</td>
<td>85</td>
<td>85</td>
<td>85</td>
<td>85</td>
<td>85</td>
</tr>
<tr>
<td>Median</td>
<td>86</td>
<td>84</td>
<td>83</td>
<td>84</td>
<td>85</td>
<td>85</td>
<td>85</td>
<td>85</td>
</tr>
<tr>
<td>SD</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Observations</td>
<td>3</td>
<td>5</td>
<td>12</td>
<td>72</td>
<td>89</td>
<td>109</td>
<td>203</td>
<td>90</td>
</tr>
<tr>
<td>Minimum</td>
<td>83</td>
<td>82</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Maximum</td>
<td>87</td>
<td>87</td>
<td>86</td>
<td>92</td>
<td>93</td>
<td>92</td>
<td>93</td>
<td>92</td>
</tr>
</tbody>
</table>

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

Table 2b.  Scores for Argentine and Chilean Wines by *Wine Spectator*

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>81</td>
<td>81</td>
<td>82</td>
<td>81</td>
<td>81</td>
<td>79</td>
<td>84</td>
<td>84</td>
<td>84</td>
<td>85</td>
<td>84</td>
</tr>
<tr>
<td>Median</td>
<td>82</td>
<td>82</td>
<td>83</td>
<td>81</td>
<td>82</td>
<td>78.5</td>
<td>84</td>
<td>84</td>
<td>84</td>
<td>85</td>
<td>85</td>
</tr>
<tr>
<td>SD</td>
<td>4.4</td>
<td>4.4</td>
<td>3.9</td>
<td>4.3</td>
<td>4.6</td>
<td>4.7</td>
<td>4.2</td>
<td>4.3</td>
<td>4.5</td>
<td>4.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Observations</td>
<td>27</td>
<td>33</td>
<td>33</td>
<td>65</td>
<td>102</td>
<td>60</td>
<td>145</td>
<td>146</td>
<td>137</td>
<td>194</td>
<td>79</td>
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<tr>
<td>Minimum</td>
<td>73</td>
<td>73</td>
<td>74</td>
<td>71</td>
<td>61</td>
<td>64</td>
<td>73</td>
<td>72</td>
<td>71</td>
<td>70</td>
<td>75</td>
</tr>
<tr>
<td>Maximum</td>
<td>89</td>
<td>89</td>
<td>91</td>
<td>92</td>
<td>92</td>
<td>87</td>
<td>93</td>
<td>92</td>
<td>92</td>
<td>95</td>
<td>89</td>
</tr>
</tbody>
</table>

Note: Wines are rated on 100 point scale. Scores over 90 are considered excellent and over 85 very good.
Figures 2a & 2b. Weighted Scores for Argentine and Chilean Wines (Wine Enthusiast, 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.).
<table>
<thead>
<tr>
<th></th>
<th>Mendoza</th>
<th></th>
<th>San Juan</th>
<th></th>
<th>Argentina</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Vineyards</td>
<td>Surface Area ha</td>
<td>No. of Vineyards</td>
<td>Surface Area ha</td>
<td>No. of Vineyards</td>
<td>Surface Area ha</td>
</tr>
<tr>
<td>0-5 ha</td>
<td>9488.0</td>
<td>25116.0</td>
<td>3953.0</td>
<td>14848.7</td>
<td>16351.0</td>
<td>41275.7</td>
</tr>
<tr>
<td>% Total</td>
<td>58.582</td>
<td>17.335</td>
<td>64.952</td>
<td>28.431</td>
<td>63.739</td>
<td>19.425</td>
</tr>
<tr>
<td>5.001-10 ha</td>
<td>3333.0</td>
<td>24255.0</td>
<td>1035.0</td>
<td>7531.0</td>
<td>4548.0</td>
<td>33061.0</td>
</tr>
<tr>
<td>% Total</td>
<td>20.579</td>
<td>16.741</td>
<td>17.006</td>
<td>14.420</td>
<td>17.729</td>
<td>15.559</td>
</tr>
<tr>
<td>10.001-25 ha</td>
<td>2346.0</td>
<td>37629.1</td>
<td>732.0</td>
<td>11450.3</td>
<td>3216.0</td>
<td>53935.2</td>
</tr>
<tr>
<td>25.001-50 ha</td>
<td>671.0</td>
<td>23296.3</td>
<td>245.0</td>
<td>8501.0</td>
<td>1006.0</td>
<td>34952.9</td>
</tr>
<tr>
<td>50.001-100 ha</td>
<td>272.0</td>
<td>19013.7</td>
<td>101.0</td>
<td>6817.5</td>
<td>412.0</td>
<td>28378.4</td>
</tr>
<tr>
<td>% Total</td>
<td>1.679</td>
<td>13.123</td>
<td>1.660</td>
<td>13.054</td>
<td>1.606</td>
<td>13.355</td>
</tr>
<tr>
<td>&gt;100 ha</td>
<td>86.0</td>
<td>15576.4</td>
<td>20.0</td>
<td>3077.9</td>
<td>120.0</td>
<td>20885.9</td>
</tr>
<tr>
<td>% Total</td>
<td>0.531</td>
<td>10.751</td>
<td>0.329</td>
<td>5.893</td>
<td>0.468</td>
<td>9.829</td>
</tr>
<tr>
<td>Total</td>
<td>16196.0</td>
<td>144886.5</td>
<td>6086.0</td>
<td>52226.3</td>
<td>25563.0</td>
<td>212489.1</td>
</tr>
</tbody>
</table>
### Tables 4a & b. Comparing Mendoza and San Juan

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

<table>
<thead>
<tr>
<th></th>
<th>Mendoza</th>
<th>San Juan</th>
<th>Argentina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (2000)</td>
<td>1,607,618</td>
<td>578,504</td>
<td>37,074,032</td>
</tr>
<tr>
<td>GDP (Millions USD, 1993)</td>
<td>$6,925</td>
<td>$2,266</td>
<td>$236,505</td>
</tr>
<tr>
<td>GDP/Capita (1993)</td>
<td>$7,878</td>
<td>$4,571</td>
<td>$7,254</td>
</tr>
<tr>
<td>Growth of GDP (1993-00)</td>
<td>1.17%</td>
<td>1.04%</td>
<td></td>
</tr>
<tr>
<td>Gini Coeff (2000)</td>
<td>0.375</td>
<td>0.378</td>
<td>0.491</td>
</tr>
<tr>
<td>Human Development Index (2000)</td>
<td>0.747</td>
<td>0.736</td>
<td>0.854</td>
</tr>
<tr>
<td>Impact of Coparticipation (1997)</td>
<td>65.10%</td>
<td>56.50%</td>
<td></td>
</tr>
<tr>
<td>Deficit/GDP (1999)</td>
<td>3.40</td>
<td>2.30</td>
<td>1.89</td>
</tr>
<tr>
<td>Current Account Balance* (Ave. 1996-98)</td>
<td>-5%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Debt Service /Current Revenues (Ave. 1993-99)</td>
<td>14.54</td>
<td>7.27</td>
<td>20.21</td>
</tr>
<tr>
<td>Unemployment Rate (Ave. 1993-99)</td>
<td>5.90%</td>
<td>8.50%</td>
<td>13.93%</td>
</tr>
<tr>
<td>No. of 4 yr.Terms Governor Can Serve</td>
<td>One</td>
<td>Two</td>
<td>n/a</td>
</tr>
<tr>
<td>Electoral Competition Score (1995)</td>
<td>22.54</td>
<td>19.28</td>
<td>n/a</td>
</tr>
<tr>
<td>No. of NGOs/1000 inhabitants**</td>
<td>2.3</td>
<td>2.18</td>
<td>--</td>
</tr>
<tr>
<td>Crimes against property per 1000 inhabitants***</td>
<td>42.6</td>
<td>25.8</td>
<td>--</td>
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Figure 3a. Linkages Among Government and Associations in Mendoza Wine Sector, 1990

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 association or institution.
Figure 3b. Linkages Among Gov’t Agencies and Associations, Mendoza Wine Sector, 1999
Figure 4a. Isolated Communities in Mendoza Wine: Membership and Board Ties, 1989

Note that the hundreds of associations that are isolates are not shown here.
Figure 4b. Membership and Board Ties Among Mendozan Wine Institutions and Associations, 2000
References


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Guinazu, Maria Celia. 2003. The Subnational Politics of Structural Adjustment in Argentina: The Case of San Luis, Department of Political Science, Massachusetts Institute of Technology.


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ENDNOTES


2 This research was based on field work during 2003-2005 that utilized over 50 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.

3 See Walters (1999), Giuliani and Bell (2005), CEPAL and HBS. 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.

4 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).

5 I draw here on a few studies which attempt to clarify the terrain of the principal fine wine companies, using different sets of data (Cetrangolo et al. 2002, Blazquez 2001, Ruiz & Vila, Vila, Gob Mendoza).

6 Data on wine’s share of exports for each province.

7 According the the World Economic Forum’s competitiveness scores, Argentina ranks consistently low in the areas of rule of law and property rights protection. CITE-DATA

8 For instance, Mendoza ranks much higher than San Juan in the number of crimes against property in absolute and relative terms. (FIEL 2003)

9 Add cites on the the electoral laws and party systems etc.

10 This type of story was repeated to me on 10 different occasions.

11 One of the cues leading firms took was from ACREA (Asociacion de Consocios de Experimentacion Agropecuaria), a secondary agricultural association that had began decades earlier coordinating and promoting collective learning among farms in the Pampas regions – the regions of grain, cattle, and dairy. A Grupo CREA included 8-10 grape growers, each of whom paid a fee to cover the costs the work of outside enology and agronomy consultants. The aims of the CREA was to have the participating growers learn from one another with the guidance of the consultant and forge stronger ties to improve information sharing and further collaboration. The participants met about once a month at one of the member’s vineyards to address a common problem or strategic concern via the “live” example at the given vineyard. Through collective problem solving, members would share tacit information on production experience that could hopefully help one another move up the learning curve faster. 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.

12 Although delayed and slower to emerge, EVISAN grew from 50 samples by 14 participating wineries in 1997 to over 102 samples by 29 wineries in 2004.

13 See also Cetrangulo et al., Paladino and Jauregui, and Walters. Cites from other countries etc on similar things, like McDermott on SMEs, Yoguel, DIB, Clusters etc.

14 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 12 leased them in the beginning.

15 The PROINDER program is administered by the Secretary of Agriculture of the Argentine federal government. Each province had to submit documentation, following a standard format, during 2000-2003.

16 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 fitosanitary regulator.

17 Describe the UNDP DATA.
There is a similar pattern of public-private collaborating in the Mendozan cooperative sector. For instance, according to the UNDP/IDB project on civic associations in Argentine provinces, Mendozan cooperatives standout in the country as they depend on about 25-30% of funds from government programs. This source of funds helped support cooperative but also made them depend on developing other sources of revenues. Moreover, it revealed how that Mendoza was administering programs via the cooperative system. (UNDP XXX)

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.

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 of La Rioja and San Luis as well. Since 2005, the Center has returned to include on Mendoza and San Juan.

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. Nationally, most of this program was focused on grain, dairy, and cattle farmers and has received generally positive reviews. CR in Mendoza reached better than expected results, given the weak state of the region and dominant agriculture sectors like viticulture in the early 1990s. 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.

According to university data, between 1996 and 2001, these two universities and Don Bosco had almost doubled the number of students and graduates in agronomy and enology degree programs.

The ITU (Instituto Tecnologico Universitario) was created in 1993. It provides a three year technical degree in management and technology. It is a foundation, created by the Mendozan government, Universidad Nacional de Cuyo, UCIM, Universidad Tecnológica Nacional and the Federación Económica de Mendoza. In the 1990s, Menoza began a series of projects between ISCAMEN, SENASA, INTA, and IDR to improve the monitoring and training of firms in food safety.

This is based on interviews and documentation of the minutes of relevant meetings at INTA Cuyo.

On Russia, see Woodruff (2000) and Johnson (2001), on China, see Huang (XXX) and Oi (1992), On Brazil see Tendler (1997) and Montero (2002), on Germany see Herrigel (1996), and on Italy see Locke (1994) and Farrel and Knight (2003).

After Bordon left the Peronists in 1994, he joined forces with disenchanted Peronists and Radicals, who formed a new party, FREPASO. In 1995, Bordon was FREPASO’s presidential candidate and surprised many by coming in second to Menem with over 35% of the popular vote. His previous Ministers, XXX and Lavalle, would be the subsequent governors of Mendoza.