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How Communities Create Economic Advantage: Jewish Diamond Merchants in New York

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HOW COMMUNITY INSTITUTIONS CREATE ECONOMIC ADVANTAGE:
JEWISH DIAMOND MERCHANTS IN NEW YORK

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ABSTRACT

This paper argues that Jewish merchants have dominated the diamond industry because of their ability to enforce diamond credit sales. Diamonds are portable, easily concealable, and extremely valuable, thereby rendering courts powerless in policing diamond theft and credibly enforcing diamond credit sales. Since credit sales are highly preferable to simultaneous exchange, success in the industry requires an ability to enforce executory agreements that are beyond the reach of public courts.

Relying on a reputation mechanism that is supported by a distinctive set of industry, family, and community institutions, Jewish diamond merchants have been able to enforce such contracts and have thus maintained industry leadership for several centuries. An industry arbitration system publicizes instances where promises are not kept. Intergenerational legacies induce merchants to deal honestly through their very last transaction, so that their children may inherit valuable livelihoods. And ultra-Orthodox Jews, for whom participation in their communities is paramount, provide important value-added services to the industry without posing the threat of theft and flight.
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I. INTRODUCTION

Why are America’s diamond merchants primarily Jewish? Jewish predominance in the diamond trade spans several centuries and continents, and activity in the modern day industry is most concentrated in Jewish communities populated by the ultra-Orthodox. This paper argues that community institutions within the Orthodox Jewish community support diamond transactions and generate efficiencies that other economic organizations cannot achieve. These community institutions serve critical economic functions and, consequently, give Jewish merchants competitive advantages over rivals.

The Jewish community’s role in the diamond industry has helped sustain what appears to be an interesting paradox. On one hand, trade in diamonds invites extraordinarily lucrative opportunities for industry players to cheat, most notably the opportunity to steal another’s diamonds. Liquidity constraints and seasonal demand discourage simultaneous exchange, so most diamond transactions cause individual diamond dealers or brokers to possess hundreds of diamonds that they have not yet paid for. On the other hand, diamond traders have systematically rejected the courts and state-created law to enforce contracts and police behavior. Diamond merchants reliably fulfill contractual obligations without the threat of state intervention, and this reliability enables these merchants to credibly commit to fulfilling executory obligations.¹ This very paradox is what propels the Jewish community’s success: the ability to enforce contracts that public courts, and thus potential industry rivals, cannot.

¹ The important feature of executory contracts for this analysis is its arrangement of time-inconsistent exchange. Such exchange occurs when parties A and B contract to exchange items of value, but time elapses between the moment party A gives a good to B and the moment B gives a good or a payment to A, i.e. there is a separation between the “quid” and the “quo”. A paradigmatic example is the credit sale, where the buyer receives the goods and pays the seller at a later date.

It has been argued, by none less than Judge Richard Posner, that “the most important thing which [contract] law does is to facilitate exchanges that are not simultaneous by preventing either party from taking advantage of the vulnerabilities to which sequential performance may give rise.” Wisconsin Knife Works v. National Metal Crafters, 781 F.2d 1280, 1285 (7th Cir. 1986). Although it was not until the 1960s that modern economists finally came to appreciate the critical role that reliable contract enforcement plays in economic development, both Adam Smith and Montesquieu placed emphasis on legal structure as prerequisites to successful economies. See Adam Smith THE WEALTH OF NATIONS, Campbell, Skinner, & Todd, eds. (Clarendon Press, [1776] 1976), vol. II, p.910 (“Commerce and manufacturers can seldom flourish long in any state which does not enjoy a regular administration of justice, in which the people do not feel themselves secure in the possession of their property, in which the faith of contracts is not supported by law, and in which the authority of the state is not supposed to be regularly employed in
Section II begins with a fuller articulation of the historical puzzle presented by Jewish predominance in the diamond industry, and Section III describes with particularity the structure of the diamond trade, paying special attention to the unique difficulties, or contracting hazards, of typical diamond transactions. Section IV, which addresses the paper’s central question, then examines how diamond traders enforce executory agreements. It analyzes the economic players in the diamond industry, many of whom are Orthodox Jews, and explains how they are induced to cooperate with fellow diamond merchants and, despite profound attractions to cheat, comply with their contractual obligations. Section V briefly reviews how some similarly structured trading networks, including but not limited to those that dominate other diamond centers, manage contract enforcement to overcome the unavailability of state-sponsored courts. Section VI offers concluding remarks and offers some reflections on the future of the Jewish diamond merchant community.

II. AN HISTORICAL PUZZLE

Jewish merchants have long played an important role in the world’s diamond industry. In the 11th century, two Jewish brothers, living in Cairo as prominent bankers and diamond merchants, supplied the Fatimid Caliph Empire with precious stones. Throughout the Middle Ages, when India was the world’s leading source of raw diamonds, Jewish communities along the Indian Ocean trade routes, Egypt, Maghreb, and the shores of Southern Europe were home to diamond traders and cutters. Beginning in 1492, Sephardic Jews escaping the Inquisition in Spain and Portugal built the world’s then-largest diamond market in Holland and enjoyed a virtual monopoly for several centuries. In 17th and 18th century Germany, a sizable Jewish community in Hamburg monopolized the diamond trade to the courts of Europe. And when 18th century

enforcing the payment of debts from all those who are able to pay.”); see generally M. de Secondat Motesquieu THE SPIRIT OF LAWS, Carrithers, ed. (Univ. of California Press, [1748] 1977).

2 An additional, and critical, question in this analysis examines why (not just how) the diamond industry employs community institutions, rather than alternative enforcement mechanisms such as state courts or vertical integration, to enforce agreements. This issue is discussed separately in an accompanying article, Barak D. Richman, “Firms, Courts, and Reputation Mechanisms: Towards a Positive Theory of Private Ordering” 104 Colum. L. Rev. 2328 (December 2004) (explaining how private enforcement protects
England’s trade with India made London a lucrative diamond trade center, a majority of the East India Company’s diamond importers were Jewish. These high-level connections in the diamond world culminated with the Jewish family-controlled De Beers syndicate, which in the 1960s managed the production and marketing of close to 100% of the world’s uncut diamonds and today controls approximately 65%.

This predominance has lasted into the 21st century, as Jewish merchants remain disproportionately represented in the world’s diamond centers of Antwerp, Tel Aviv, and New York. Interestingly, the modern-day Jewish presence in these diamond centers reaches deeply and most categorically into the supporting occupations of diamond cutting and diamond brokering. Eighty percent of all of Amsterdam’s 10,000 cutters in the early 20th century were Jewish, and in Antwerp one third of all cutters and three fourths of all brokers were Jewish. Similar percentages have been maintained in current-day New York’s 10,000 diamond workers, Antwerp’s 10,000 workers, and, more obviously, Israel’s 7,000 cutters and 400 factories. In New York’s diamond industry, which is the focus of this paper, the Jewish presence is most profound at the ground level, as the industry’s brokers and cutters are disproportionately comprised of ultra-Orthodox Jews, an insular and highly ritualistic version of Jewish practice.

The New York Diamond Dealers Club (DDC), the home of industry’s trade association and the locus of the city’s diamond trade, reflects the pervasiveness of the Orthodox Jewish influence in the New York transactions that are beyond the reach of public courts while avoiding the bureaucratic costs of vertical integration.


4 De Beers’s control of the supply of rough diamonds has declined in recent years as some mines have begun selling directly to diamond merchants. See infra note 30.

5 Shainberg, supra note 3 at 301-311.

6 These figures reflect the number of diamond cutters in the early 1980s, but the current number is significantly lower. Beginning in the early 1980s, Indian merchants established low-cost cutting operations that have supplanted much of the polishing in New York, Antwerp, and Israel. See infra note 9. Nonetheless, while these cities have far fewer cutters than they did two decades ago, Jewish cutters remain predominant among those who remain.

York diamond world and illustrates how Orthodox Jews have crafted a distinctive flavor to New York’s industry. During any normal business day, the DDC’s main trading hall brings to life a snapshot from the past. Most traders are men with long untrimmed beards, speaking Yiddish, and are dressed in black suits, black overcoats, and a black hat or caftan. The Club serves only kosher food and has a Beit Midrash, where diamond brokers regularly attend daily worship services and study traditional Jewish texts. Were it not for the modern-day building environment and sophisticated security system, the Diamond Dealers Club could be mistaken for a meeting place in an Eastern European village (or shtetl) in the late 18th century. The New York Times called the DDC and New York’s diamond district, which spans only a single block on 47th Street, “an anachronism, a 17th-century industry smack in the middle of a 21st-century city.”

Jewish predominance in the industry is somewhat of a puzzle. One possible explanation invokes history. In pre-Enlightenment Europe, Jews were prohibited from owning land, ousted from merchant guilds, and excluded from traditional brands of handicrafts; they thus were forced into becoming suppliers of finished goods and  

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8 Ultra-Orthodox Jews also play central roles in Antwerp’s diamond industry and are important to Israel’s and London’s markets as well. See Section V, infra, for some discussion of these other markets. The focus of this paper, however, is the New York market.
9 There is a very small, but growing, non-Jewish component of the DDC’s 1,800 members. Approximately 10% (up from two percent ten years ago) of current DDC members are Indian and have connections to India’s prosperous diamond trade. Robin Pogrebin “Struggling to Bring Back the Glitter” NEW YORK TIMES August 23, 1998, section 14, pg. 1. The Indian community’s role in the diamond industry is discussed infra in Section V, but it is worth noting here that the Indian merchants come disproportionately from a single insular sect, the Palanpuri Jain, who claim strong ethnic ties and have a tradition of family-based businesses. The mechanisms that enforce agreements between Jewish merchants may have parallel mechanisms in the Indian community.
10 The Jewish presence in the DDC goes far beyond appearance. DDC transactions are consummated with the Hebrew words “mazel u’vracha” (luck and blessing), and Jewish law plays an important role in arbitration hearings (see DDC By-Laws, Article XVIII Section 1.). Moreover, the Jewish community’s history of marginalization in Europe remains central in merchants’ self-perception. Writing in the 1982 Jewish Almanac, the then-Executive Director of the DDC (who was more prominent as a diamond merchant than as a historian) wrote:

“Charting the history of Jews in the diamond industry is similar to recounting our persecuted past and our reactions as a people. Jews in general have crowded into certain trades due to reasons closely related to being Jewish. Many countries have kept us as socio-economically backward as possible due to their jealousies, fears, and outright hatreds. These national biases have forced Jewish people to stay within their own districts for purposes of residence and livelihood.”
Shainberg, supra note 3 at 302.
11 Lauren Weber “The Diamond Game” NEW YORK TIMES April 8, 2001, Section 3, pg. 1.
extenders of credit.\textsuperscript{12} Jewish communities also suffered a history of expulsions and forced emigrations from Christian rulers, so they were drawn to professions with easily portable inventories.\textsuperscript{13} Jews were similarly marginalized in many middle-eastern and North African countries, so Jewish merchants in those areas also searched for professions that required small fixed investments.\textsuperscript{14} The diamond trade met these conditions and thus became attractive to early Jewish merchants.\textsuperscript{15} However, while these observations explain why Jewish merchants were drawn to the diamond industry, and why Jews distanced themselves from occupations that involved non-portable fixed assets, they do not explain Jewish success over non-Jewish competitors. Early predominance suggests that Jewish merchants enjoyed a competitive advantage, not just that the diamond industry was a last resort.\textsuperscript{16}

A related explanation relies on path dependence, suggesting that today’s prevalence of Jewish diamond merchants is merely a product of historical momentum.\textsuperscript{17}

\textsuperscript{12} Several prominent Jewish historians explain Jewish occupational selection according to the multitude of state restrictions on Jewish economic activity. See Cecil Roth THE JEWISH CONTRIBUTION TO CIVILIZATION at 228 (1938) (“The Jew was driven by the unfortunate circumstances of his history to be predominantly a townsman. He had to seek an outlet, despairingly, in every branch of urban economy.”); Israel Abrahams, JEWISH LIFE IN THE MIDDLE AGES (1896) at 249 (“[W]hen the medieval Jews devoted themselves largely to commerce and moneylending, they were not obeying a natural taste nor a special instinct, but were led to these pursuits by the force of the circumstances, by exclusive laws, and by the express desire of kings and people.”); see also “The Economic History of the Jews” ECONOMIC HISTORY REVIEW, vol. 14, issue 1 (1961).


\textsuperscript{15} The historical explanation also comports with how many Jewish merchants explain their success, see Shainberg, supra note 3.

\textsuperscript{16} But see Maristella Botticini & Zvi Eckstein, “Jewish Occupational Selection: Education, Restrictions, or Minorities?” J. ECON. HISTORY (forthcoming 2005) (attributing Jewish competitive advantage in urban occupations to the community’s widespread literacy, which resulted from an emphasis on religious text-based education).

\textsuperscript{17} Path dependency is a popular theory in political science literature, popularized in the seminal article Alexander Gerschenkron “Economic Backwardness in Historical Perspective” in ECONOMIC BACKWARDNESS IN HISTORICAL PERSPECTIVE (Harvard University Press, 1962). A good modern example is John Zysman “How Institutions Create Historically Rooted Trajectories of Growth” INDUSTRIAL AND CORPORATE CHANGE vol. 3, no. 1 (1994).
This approach – which is intuitive given the numerous factors that induced Jewish merchants to pursue the diamonds trade centuries ago – suggests that Jewish merchants seized industry leadership during a seminal period, perhaps through some advantage or historical accident, and that past leadership positioned them favorably compared to subsequent challengers. However, path dependence can explain current as well as past Jewish dominance only if the diamond trade is characterized by internal economies of scale, significant barriers to entry, or some other mechanism that allows one generation of Jewish merchants to bequeath their competitive advantages to their community successors. But there are no significant internal scale economies or technological competencies that sustain leadership, and entry is not impossible since the industry has witnessed several entries by important new players. More important, a community’s ability to maintain and bequeath industry leadership is severely limited because, unlike corporations or political institutions, individual merchants have limited life spans.

Another explanation could rest on a theory of human capital. Such a theory suggests that Jewish families or institutions have developed know-how that only their descendants and their community members are able to acquire. Some activities in the diamond industry, chiefly diamond cutting and polishing, do involve the acquisition of specialized training that only experts can impart, and there consequently are some geographic localities that are home to concentrated centers of diamond cutting expertise. But the bulk of wealth from the diamond industry comes from sales – the

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18 See supra, note 9; infra Section V.
19 Samuel Huntington noted, “Keynes’ percipient remark that ‘In the long run we are all dead’ applies to individuals, not institutions.” POLITICAL ORDER IN CHANGING SOCIETIES (Yale Univ. Press, 1968). Moreover, given the industry’s consistently lucrative opportunities, on one hand, and dramatic changes in global demand and technological innovation over the course of centuries, on the other, mere historical momentum can hardly be enough to sustain industry leadership for nearly a millennium. Such an explanation pays little respect to market forces, entrepreneurialism, or individual ingenuity. The remark accredited to businessman Rudolf Spreckels comes to mind: “Whenever I see something badly done, or not done at all, I see an opportunity to make a fortune.” Oliver E. Williamson, “Strategy Research: Governance and Competence Perspectives,” 20 Strat. Mgmt. J. 1087, 1089 (1999).
20 For an overview of one prominent version of human capital theory, see Gary S. Becker, HUMAN CAPITAL (3rd ed.) (1993). Botticini & Eckstein, supra note 15, advance a human capital theory that explains Jewish predominance in medieval merchant industries, but their theory cannot explain Jewish diamond industry leadership in the 20th century.
21 One center for diamond cutting is Idar-Oberstein, a provincial town in the picturesque Hunsrück Mountains in Germany’s Rhineland, which “turns out stone-cutters the way Frankfurt does bankers.” Michael Clerizo, “‘The Stone’s Happy. I am Happy Too,’” FINANCIAL TIMES Jan. 24, 2004, at 15. Nor-Hajen, Armenia is another source of skilled “master cutters.” Sandra Rubin, “Diamonds in the Rough,” FINANCIAL POST, Feb. 3, 2001, at D1. Some diamond mines, such as Canada’s Yellowknife, have
process of importing diamonds from international suppliers, matching particular stones to meet specialized commercial demand, and selling these stones internationally wherever jewelry manufacturers or high-paying consumers reside. The diamond dealers who buy and sell diamonds dominate the industry far more than the cutters with specialized knowledge. And while the entrepreneurial dealers certainly possess a sophisticated understanding of the industry’s science, the business skills they exhibit are no different from that of other entrepreneurs. Furthermore, the unifying commonality among Jewish merchants is their religious ethnicity, not their education or geography (since Jewish merchants come from all over the world and from different Jewish communities and sects), and basing a human capital argument on ethnic ties alone is antithetical to human capital models that rest on investments in formal education and job training.

A fourth possible explanation for Jewish predominance relies on an “ethnic cartel” model. In this model, merchants in an insular community pledge to charge competitive prices only to its own community members and to sell goods only at oligopoly prices to non-members. As a result, entry into the market is tilted towards community members, causing the industry to eventually become dominated by the ethnic community. The community as a whole, in turn, enjoys oligopoly rents. Though recruited master cutters to train local workers to be skilled gemstone cutters, a process that generally takes at least three years. In an effort to promote local employment, the South African government founded the Harry Oppenheimer Diamond Training School in Johannesburg to promote diamond cutting as a local cottage industry. In sum, skilled diamond cutting centers grow much like other cottage industries of skilled labor or specialized technology. See generally, Michael Porter, COMPETITIVE ADVANTAGE: CREATING AND SUSTAINING SUPERIOR PERFORMANCE (1985) at chap. 9 (describing the how geographic proximity sustains interrelationships among business units that generate competitive advantage).

22 See Becker, supra note 20 at Part One. This last point reveals a rather unattractive element to the human capital explanation for Jewish industry dominance. To illustrate, a broader argument to explain Jewish economic success – in multiple industries – was made by Werner Sombart (1863-1941) in Jews and Modern Capitalism. Sombart, attempting to refute Weber’s Protestant Ethic and the Spirit of Capitalism, argues that a Jewish ethos is the foundation for capitalism rather than Calvinism or Puritanism. Sombart attributed Jewish commercial success to a “Jewish genius” whose roots lie in the “rational approach of Judaism towards economic problems,” such as Jewish law permitting usury for non-Jews and requiring just prices. While Jewish law may have a role in aiding the community’s diamond trade (a topic discussed infra), Sombart’s argument, at least as Sombart presented it, is reflective of the eugenics movement that was attractive during his time of writing. Sombart reveals this bias when he pledged his support for the Nazi regime in 1934.

community merchants would be tempted to deal more favorably with outsiders, since they could easily undercut fellow merchants who abide by their pledge to offer inflated prices, those who offer discounts to outsiders are denied future business by fellow community members who dominate the industry.

The biggest problem with the ethnic cartel model, particularly as it is applied to the centuries-old diamond industry, is that it presumes that a cartel has the ability to outlast market forces. Cartels restrict entry and output while inflating prices and thus are vulnerable both to efficient entrants and to defection by members. Modern antitrust scholars are largely skeptical of most cartels’ ability to police its own members and prolong supercompetitive prices because, to sustain collusion, an industry must exhibit a significant degree of product homogeneity, predictable demand, and technological stability.\(^{25}\) In contrast, the diamond industry’s seemingly anachronistic distribution system has weathered over 500 years of technology changes, continental wars, and transglobal migration while marketing highly differentiable goods and witnessing substantial demand shocks. Current oligopoly theory is hard-pressed to explain how a cartel could survive such economic turbulence relying on collusion alone.

Moreover, certain empirical observations of the diamond industry contradict ethnic cartel predictions. First, though entry has been limited, history has shown that the profile of the diamond industry can change over time even as Jewish predominance has remained.\(^{26}\) Second, the ethnic cartel model predicts that insiders will restrict output to outside merchants, but in fact we see diamond merchants engaging in the active and competitive marketing of wholesale diamonds to buyers from different ethnic communities. This suggests that ethnic predominance is explained not by cartel behavior, but rather by a certain competitive advantage that community members enjoy.

This paper follows an approach that rests on an efficiency analysis. It argues that today’s Jewish merchants owe their success in the diamond trade not to historical accidents, institutional inertia, or anticompetitive collusion, but rather, to a competitive advantage that enables them to organize diamond transactions more efficiently than

potential rivals. The greatest competitive advantage that Jewish merchants enjoy is the ability to credibly commit to pay for the diamonds they purchase on credit. Jewish merchants owe this advantage to complementarities between the demands for governing diamond transactions and the traditional structure of Jewish communities. In short, Jewish community institutions can enforce executory contracts that are beyond the reach of public courts, and thus beyond non-community members as well. The next section

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26 See supra note 9; See also infra Section V. The proper inquiry, then, is what do these entrants have in common with those who dominate the industry? This paper argues that the answer is successful entrants enjoy similar supporting community institutions.

27 To be sure, the diamond industry is already the beneficiary of several valuable economic examinations, but previous scholarship placed its emphasis elsewhere. The early works focused on De Beers’ restrictive sales policy, which bundles many heterogeneous diamonds together and charges the approximate average price. Yoram Barzel first explained that this unusual practice prevented buyers from engaging in costly efforts to examine and appraise individual diamonds before their making a purchase, thus permitting De Beers to recoup some of those savings by charging a higher price. Yoram Barzel, “Some Fallacies in the Interpretation of Information Costs” 20 J. L. & Econ. 291, 304-05 (October 1977) (“Had the contents of a particular bag been available for appraisal by all buyers, each probably would have spent resources to determine the properties of the diamonds. … The incentive for De Beers to engage in this peculiar form of trade seems to be that buyers are now in a position to spend on the actual purchase of the diamonds the amount they otherwise might have spent on collecting information.”); see also Yoram Barzel, “Measurement Cost and the Organization of Markets” 25 J. L. Econ. 27, 32 (April 1982) (“A consumer who is convinced that he received a random selection from an optimally measured commodity will not use additional resources for measuring. … De Beers’s diamond ‘sights’ seem a case in point.”). Roy Kenney and Benjamin Klein articulated a similar argument in their famous paper examining of “block booking,” Roy W. Kenney & Benjamin Klein, “The Economics of Block Booking” 26 J. L. & Econ. 497 (October 1983).

The most thorough, and perhaps most famous, economic examination of the diamond industry was Lisa Bernstein’s seminal article, Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry, 11 J. Legal Stud. 115 (1992). Bernstein’s article discusses the central role of Jewish merchants in the industry, but it argued that “[t]he original reasons for [Jewish] involvement in the diamond trade were largely fortuitous.” Id. at note 54, page 140. Consequently, the Bernstein approach, in stark contrast to the one employed here, does not deem community institutions to be essential in supporting the diamond industry.


This paper moves beyond Landa’s work in two respects: first, it examines role of community enforcement in a contractual setting where the public courts are readily available, suggesting that the diamond industry reveals an instance of court failure. And second, enforcement mechanisms are described here with significant specificity, whereas Landa’s work – and related scholarship – relies on more amorphous terms such as “trust,” “losing face,” and “social capital.” See also, Robert Putnam MAKING DEMOCRACY WORK: CIVIC TRADITIONS IN MODERN ITALY (Princeton University Press, 1993); Clifford Geertz “The Rotating Credit Association: A ‘Middle Rung’ in Development” ECONOMIC
describes the unusual challenges that diamond credit sales present and explains why public courts cannot enforce executory contracts. Section IV then explains in detail how Jewish community institutions serve as unusually effective enforcement mechanisms and thus create a competitive advantage for Jewish merchants. Since the traditional social structure that pervaded Jewish communities throughout the world before the Enlightenment remains intact in New York’s ultra-Orthodox communities, an understanding of what generates current Jewish competitive advantage can also explain Jewish merchants’ historical predominance in the diamond industry.

III. DIAMOND TRANSACTIONS

A Diamond’s Path & Time-Inconsistent Exchange

In the $60 billion diamond jewelry industry, a diamond’s path from the mine to the consumer goes through several intermediaries.29 The journey for most stones begins in African, Australian, and Canadian mines, and approximately 65% then go to the De Beers-controlled Central Selling Organization (CSO) in London.30 The CSO distributes its supply of rough diamonds through four brokers, who sell presorted boxes of diamonds to 125 specific merchants, known as “sightholders,” during individual “sights,” or

29 Global retail sales of diamond jewelry have been estimated at $58.7 billion for 2003. Mining Review Africa, Issue 4/2004, available at: http://www.miningreview.com/archive/mra_4_2004/24_1_2.php. In 2002, when global retail sales were $56.9 billion, the sale of rough diamonds from mines was $8.35 billion and the value of diamond content in global retail jewelry sales totaled $14.5 billion. See Chaim Even-Zohar, The 2002 Diamond Pipeline, available at: http://www.tacyltd.com/Research_Materials_Full.asp?id=52395. Thus the total mark-up from rough diamonds to polished wholesale prices is about 75%.

30 The De Beers cartel owns the mines of approximately 50% of the world’s diamonds, with the additional 15% entering its control through exclusive purchase agreements. As recently as the 1990, De Beers controlled 80% of the world’s diamonds and controlled 100% in the 1960s. The recent decline in market share resulted from mines in Russia, Australia, and Canada electing to market their diamonds directly in Antwerp instead of participating in the CSO cartel. These developments, plus advances in laser technologies for cutting and polishing diamonds, see infra Section V, have prompted De Beers to change its business strategy away from market control and towards marketing a brand name. See Weber, supra note 11; Emma Muller “De Beers Leads the Diamond Trade Downstream” FINANCIAL TIMES February 1, 2001, pg. 40.
viewing sessions, in London. These bundles are sold at a non-negotiable price, and if the sightholder refuses to purchase at the set price, he will not be invited to future sightings. Accordingly, sightholders rarely refuse CSO terms since they reap substantial rents from their valuable position atop the distribution chain.

Sightholders then sell these rough diamonds to a network of individual dealers, and approximately 80% of these initial sales occur in Antwerp’s four diamond bourses. Then the process of cutting and sorting begins, where Antwerp merchants either arrange for polishing the stones themselves or sell rough diamonds to other dealers who arrange for cutting in India, China, Israel, New York, and other locations. Dealers continue to resell the rough and polished diamonds, in increasingly smaller bundles, until they reach a jewelry manufacturer for commercial sale. Many dealers also use brokers, who work on small commissions, to assist these sales and find the best price for a given stone.

The reliance on the numerous intermediaries is necessitated by widely divergent valuations for individual stones. Different end consumers place very different values on a given stone (depending both on an intended use for a diamond and on subjective judgments), so finding the optimal buyer for a specific stone is a highly profitable enterprise. However, determining a diamond’s qualities and ultimate value is extremely difficult to do without conducting a personal inspection, and the process of sorting and evaluating diamonds is time-consuming and effort-intensive. Consequently, the industry is home to many middlemen who create value and earn substantial profits by ascertaining the particular demands of individual end-users and learning how much buyers will pay, evaluating the qualities of individual stones, and then matching certain types of stones with particular buyers. The matching process through intermediaries continues even after stones reach New York. In one day, a diamond can move from one

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31 De Beers has reduced the number of sightholders over the past few years. In 1983, Kenny & Klein, supra note 27, spoke of approximately 300 sightholders. Bernstein in 1992, supra note 27, wrote about 150-200 sightholders. Recent reports now list 125 sightholders, and some indications suggest that De Beers plans to further reduce that number to as little as 60. This is part of De Beers’ recent effort to consolidate the industry. See Muller, ibid.

32 For a discussion of the efficiency implications of this distribution method, see Kenny & Klein, supra note 27.

33 See Kenny & Klein, supra note 27; see also Barzel, supra note 27.
end of New York’s 47th Street diamond center to the other, doubling in value after passing through seven or eight hands.\textsuperscript{34}

Accordingly, a typical diamond will pass through many transactions before it reaches a consumer. This frequent trade and barter is typical of the diamond industry, particularly in bourses that are designed to house these transactions. In addition, diamond merchants display a unique zeal for these diamond trades. One insider shared the following parable:

One diamond dealer said to another, “The most magnificent diamond has come into my hands – you simply have to buy it.” The other inspects the diamond, agrees that it is exceptional, and the two negotiate a price. A few days later the first dealer finds the second and says, “Do you still have that diamond? I’ve never seen such beauty, and I hope you’ll let me buy it back from you.” They agree on a price 15\% above the original purchase price. More days pass, and the second dealer approaches the first and says “You know, I’ve done nothing but think about that diamond, and I simply must repurchase it.” They agree on a price with another 15\% mark-up. One more time the first dealer finds the second and says, “That diamond was so perfect – I would love to buy again.” The second apologizes and informs the first that he sold it to a jewelry manufacturer, to which the first responds, “But why? We were doing such wonderful business!”\textsuperscript{35}

This passion is matched by fervor and intensity that swirl around the trading floors. Price, payment schedule, method of payment, and credit security are all variables that affect a deal.\textsuperscript{36} Different proposals shoot back and forth, and often both negotiating parties speak simultaneously on cell phones to consult with the dealers they represent. Some liken the intense negotiations to heated Talmudic debates that are typical in Yeshivas (traditional houses of learning) and study sessions in the DDC’s Beit Midrash.

Despite the steady stream of diamond transactions, neither the flow of diamond supply nor the flow of demand is constant. On the supply end, there are ten CSO sights each year, one held approximately every five weeks. The sightholders are required to pay the CSO in full within seven days of the sight, but it can take as long as four months for a manufacturer to sort, polish, and sell all of the diamonds in the bundle. Similarly, dealers who are not sightholders purchase their supply of diamonds on a cycle that shadows

\textsuperscript{34} See Weber, supra note 11.
\textsuperscript{35} Interview with the author, August 2000.
\textsuperscript{36} In one visit to the DDC, the author overheard a vigorous debate over how a buyer would pay for a diamond consignment. The final phase of the debate – long after the price and payment schedule were agreed – had the buyer offering to pay with a certified check while the seller demanded a bank check (this was an instance where the transactors did not know each other and agreed to a simultaneous exchange, which is a less common but not unusual arrangement). For both simultaneous and time-inconsistent transactions, considerable care is invested in even the small details of such sales.
schedule of sights. On the demand side, retail demand for diamonds is highly seasonal, as 30-40 percent of all U.S. sales occur in November and December. Meanwhile, the pace of manufacturing, particularly diamond cutting and polishing, is constant since the cutting process involves one cutter and one stone at a time. Therefore, efficient utilization of diamond cutters requires polishing stones throughout the year, despite the irregularity of supply and demand.

Consequently, selling diamonds on credit is far more preferable than simultaneous exchange. Credit sales allow merchants to adjust their inventories and manufacturing schedules to the ebbs and flows of supply and demand. Moreover, liquidity constraints are very tight for merchants since most merchants are self-employed or work for small family businesses, not for heavily capitalized corporations, and many dealers are simply unable to pay upfront for substantial purchases (dealers generally concede that they can get a significantly better price for a stone if they extend credit to their buyers). Accordingly, most dealers match payments for credit purchases with the anticipated revenue from downstream sales, and the predominant diamond transaction is the executory contract that features a time-inconsistent exchange and a separation of the quid from the quo. The role of credit in diamond transactions is so central that the market for diamonds has been called “an implicit capital market.”

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37 In fact, cutting technology for large stones has changed very little over the past centuries. Cutters hold a diamond firmly in a metal grip and deliberately place it at a desired angle against a rotating grinding wheel. In earlier generations, the grinding wheel was rotated mechanically by hand cranks or foot pedals, whereas modern grinding wheels are electric and use more sophisticated grips, but the underlying process is essentially the same. The 1982 Jewish Directory and Almanac contains a dramatic illustration of this technological constancy: a 1850 original engraving of a diamond cutter, a 1912 picture of diamond cutters in an Antwerp attic, and a picture of a large warehouse for diamond cutting in the early 20th century all show diamond cutters sitting before a grinding wheel. One would see a similar sight in several small offices along 47th street in Manhattan. (Some mechanical and high-volume processes, however, have been developed for smaller, less valuable stones; these processes are much more common to cutting centers in India and China than in Antwerp and New York).

38 Historically, diamond merchants have always had to balance capacity constraints in manufacturing and polishing with waves of supply and demand. For example, an economic boom in 1820 Amsterdam led to the emergence of many new factories, but work was never constant and cutters were only hired temporarily. When sailing ships came into port from Brazil with rough diamonds, the factories bustled to cut and polish the new shipment. And when the consignment was polished and the dealers scurried to sell the polished stones throughout the Royal Courts of Western Europe, work for diamond cutters ceased.

39 An alternative to selling diamonds on credit is for a diamond merchant to seek credit elsewhere. However, as Bernstein, supra note 27, explains, diamond merchants can obtain credit from each other at a lower cost than they could elsewhere. First, they save the additional set of transaction costs that accompany a third party, such as a bank or other provider of credit. Second, if diamond merchants transact
The Challenge – Enforcing Diamond Executory Contracts

Given the importance of credit sales, the diamond industry depends overwhelmingly on the reliable enforcement of executory contracts. However, while most industries can employ state-sponsored courts to enforce payment after the delivery of goods, public courts are toothless to enforce credit sales for diamonds. Diamonds are easily portable and command extreme value throughout the world. A diamond thief encounters little difficulty in hiding unpaid-for or stolen diamonds from law enforcement officials, fleeing American jurisdiction, and selling the valuable diamonds to black market buyers.\footnote{\textsuperscript{41}} The courts’ failure to prevent flight amounts to a failure to enforce the executory contract.

The failure of public courts requires diamond merchants to rely on trust-based exchange.\footnote{\textsuperscript{42}} Mutual trust among merchants – which the New York Times has called “the real treasure of 47\textsuperscript{th} street” – assures dealers that maintaining a trustworthy reputation will secure for them the opportunity to engage in future lucrative transactions, and through this mutual trust, dealers comfortably engage in executory contracts despite the unreliability of state courts.\footnote{\textsuperscript{43}}

\begin{itemize}
  \item with each other regularly, they have more information about the buyer’s creditworthiness than would a bank, thus reducing adverse selection costs.
  \item \footnote{\textsuperscript{40}} Bernstein, supra note 27.
  \item \footnote{\textsuperscript{41}} Diamond theft continues to be a severe problem for the industry despite technological advances in security. Recently, rough diamonds worth approximately $100,000,000 were stolen from Antwerp vaults, see \url{http://www.cnn.com/2003/WORLD/europe/02/27/belgium.diamonds.ap/}, and petty thieves stole more than $300,000 worth of Elvis Presley’s jewelry from the Elvis-A-Rama museum, including the King’s ruby diamond ring and his diamond pendant and chain; see \url{http://www.fbi.gov/hq/cid/arttheft/northamerica/us/jewelry/elvis/elvis.htm}.
  \item Relatedly, fugitives continue to transfer their assets into diamonds before escaping law enforcement. A recent example is Martin Frankel, the troubled fugitive financier whose collapsed financial schemes prompted federal prosecution. During his attempted escape from US authorities, he arranged a shadowy purchase of several million dollars of diamonds before his flight from the United States. See Ellen Joan Pollack THE PRETENDER (The Free Press, 2002).
  \item \footnote{\textsuperscript{42}} The undesirability of alternative institutions to secure diamond transactions, such as vertical integration, is discussed in Richman, supra note 2.
  \item \footnote{\textsuperscript{43}} Roger Starr, “The Real Treasure of 47\textsuperscript{th} Street” NEW YORK TIMES, sec. A, p.18, March 26, 1984. The Times continues:
    \begin{quote}
      [O]nce gems leave the vault-like workshops, they do so in folded sheets of tissue paper, in the pockets of messengers, dealers and traders. They are not logged in and out like documents or securities, or marked to prevent substitution. They are protected from embezzling only by the character of those who transport. … On that slender record, gems worth thousands of dollars traverse the street, and are distributed among buyers from Bombay and Buenos Aries, Pawtucket and Dubuque.
    \end{quote}
\end{itemize}
But trust-based exchange presents its own challenges. According to simple game theory, parties to a transaction will not trust their counterpart unless both parties know that the present value of profits from future exchange will exceed the one-time gain from cheating – this, of course, is a simple version of the iterated Prisoner’s Dilemma. The Prisoner’s Dilemma for the diamond transaction presents a particularly difficult hurdle for cooperation because cheating (e.g. running off with unpaid diamonds) produces a tremendous gain whereas cooperating sometimes yields only minimal profits. Many credit sales involve large quantities of diamonds and brokers regularly have many diamonds in their possession that they do not own, so the opportunity to steal another’s diamonds is both readily available and tremendously valuable. In contrast,

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45 See generally, Robert Axelrod, THE EVOLUTION OF COOPERATION (1984). A simultaneous game where a party decides either to cooperate or to defect qualifies as a Prisoner’s Dilemma game if (1) each individual gains more from cheating regardless of the other party’s actions, (2) the outcome from both parties cooperating is a Pareto improvement over the outcome when both parties cheat, and (3) if the result from either party defecting is socially inferior to an outcome with mutual cooperation. Mathematically, if parties receive a pay-off of (1, 1) if both cooperate, (0, 0) if both cheat, and (α, – β) if one cooperates and the other defects, the definitional conditions are α > 1 and α – β < 2. The result from playing the game only once is that both parties will defect, a Pareto-inferior outcome. In a “Grim Strategy,” cooperation is sustained until one party cheats, after which the cheated party (and thus the cheating party as well) will continually defect.

46 The Prisoner’s Dilemma for the diamond transaction is slightly unique from the standard formulation because the one-time benefit from cheating is far above the minimal profits from cooperation. In other words, using the notation in the previous note, α >>> 1. Long-term cooperation is sustained, given discount rate δ (where 0 < δ < 1), only if 1/(1-δ) > α. Accordingly, if α >>> 1, parties achieve an equilibrium of cooperation only if δ is high and if the players are certain they will benefit from many future transactions.

47 Cheating in the paradigmatic sense is refusing to pay for diamonds received from another merchant, but cheating opportunities are by no means limited to theft. Other ways that merchants can cheat – and issues that cause serious concern among diamond merchants – include submitting payment late and lying about a diamond’s quality or origin. Note that both sellers and buyers confront these lucrative opportunities to cheat. See supra note 85.
the industry’s competitiveness makes profit margins very thin – especially for brokers, whose commissions are as low as 1-2% of a sale. Moreover, multilateral cooperation throughout a market is significantly more difficult to explain than bilateral cooperation between two players, since players in a multilateral game do not know with whom they will transact in the future and may not know the past actions of their current business partners.

Despite these features of the diamond transaction – the extremely valuable opportunities to cheat, the relatively low payoffs from dealing honestly, the unavailability of public courts, and the absolute need to know that your business partners are trustworthy – the diamond industry is able to sustain widespread multilateral cooperation. Several unique industry and community institutions play critical roles in sustaining trust-based exchange, but the most important source of the industry’s success lies in the identities and unique preferences of the individuals involved in diamond transactions.

IV. ENFORCING EXECUTORY CONTRACTS

Sustaining reputation-based exchange relies on mechanisms that inform all parties of the reputations, or past behavior, of potential business partners. This section first describes how the New York Diamond Dealers’ Club, the diamond district’s bourse and the industry’s epicenter, serves the critical role of disseminating reputation information and enabling trust-based exchange to occur between two individuals who do not intimately know each other. Still, the lucrative opportunities to cheat suggest that cooperation, even under full information, should be unsustainable; thus, the remainder of this section describes how intergenerational family businesses and tightly knit ethnic communities sustain cooperation.

48 Profit margins tend to vary according to a merchant’s location on the distribution chain. Merchants who are perched atop the distribution chain, in particular De Beers sightholders, likely benefit from some oligopoly rents and do enjoy lucrative businesses. The paradigmatic challenge remains, however, particularly as an end-game problem.
The New York Diamond Dealers Club

Sustained cooperation in New York’s diamond industry supports a tremendous amount of commerce. Nearly half of the world’s $60 billion diamond jewelry sales are in the United States, and 47th Street merchants handle over 95% of the diamonds imported into the U.S. Manhattan’s crowded diamond district and the DDC serve as the gateway to the lucrative American market.

In addition to providing a high-security trading hall that is safe for diamond inspection and sales, the DDC also serves as the industry’s trade association and provides structure to diamond transactions. Comprised of 1,800 members, the DDC issues trading rules to govern diamond sales and provides a mandatory private arbitration system to resolve all disputes between merchants. This private system replaces any opportunity to seek redress from a state court, and any member that does attempt to adjudicate in state courts will be fined or suspended from the club. DDC members are elected to serve as arbitrators, and only members held in the highest esteem win election. The arbitration panels deliberate in secret, pass down rulings without written justifications or creating case law, and all arbitration rulings are final. The private arbitration system has been hailed as an efficient and highly effective enforcement mechanism.

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49 The New York Diamond Dealers Club was founded in 1931 with 12 founding incorporators and 50 original members. Modeled after the diamond bourses that served Europe’s older and larger diamond industries, its membership grew substantially in 1944-45 when many European dealers were able to immigrate to the United States. See generally, Albert J. Lubin, DIAMOND DEALERS CLUB: A FIFTY-YEAR HISTORY (1982). Many European diamond dealers fleeing Europe before the Nazi invasions of Holland and Belgium sought temporary refuge in Cuba, Mexico, and Brazil before returning to Europe or immigrating to the United States. David Federman, “Diamonds and the Holocaust,” MODERN JEWELER (May 1985).


52 DDC By-laws, Art. XXII, § 1a.

53 Because DDC arbitrators are highly familiar with the diamond industry and archetypal diamond transactions, their expertise yields certain sizable administrative savings. Arbitrators are familiar with the process of identifying diamonds (remarkably, diamond dealers can recognize specific diamonds, so when a dealer lends one of his diamonds to another for temporary inspection, he is able to confirm that the diamond that was returned was the correct one), so the evidentiary process of recognizing stolen goods is less costly. Plus, DDC arbitration procedures are tailored for typical disputes, so litigation costs are much lower as well. Moreover, arbitration rulings are swift, reflect the accuracy of experts, and assess appropriate remedies. For a full discussion of the administrative efficiencies of the DDC’s private arbitration system, see Bernstein, supra note 27, at 135-8, 148-151.
However, the DDC’s private arbitration system, like state courts, is wholly incapable of enforcing agreements on its own and is toothless in punishing diamond theft. The DDC’s arbitration board can issue fines or revoke an individual’s Club membership, but these sanctions are only effective if the party intends to continue transacting in diamonds and are meaningless if that party decides never to transact again. While decisions by the DDC’s arbitration committee are enforceable in New York’s state courts, such appeals very rarely occur since state courts also cannot prevent a thief from escaping to a hidden location and disposing of stolen diamonds. In any event, many dealers, particularly middleman brokers, are essentially judgment proof, so remedies from both public courts and private arbitration panels will be unable to recover adequate damages from a person who has squandered another’s diamonds and subsequently becomes unable to pay. Illustrating the limitations of both public and private enforcement mechanisms is the following admission by one diamond dealer: “the truth is that if someone owes you money, there’s no real way to get it from him if he doesn’t want to pay you.”

54 A party can appeal an arbitration board decision to New York state court only if there is a procedural irregularity. The board’s substantive decisions are not reviewed. See Rabinowitz v. Olewski, 100 A.D. 2d 539; 473 N.Y. 2d 232; see also Goldfinger v. Lisker, 508 N.Y.S. 2d 159.

55 Concerns about payment are contractual hazards that place a risk on the seller. A second category of contractual hazards involves risks assumed by the buyer. While nearly all diamond purchasers are able to roughly assess the value of a diamond along the Gemological Institute of America’s dimensions (the 4Cs – carat, cut, clarity, and color), there are certain risks that they cannot confirm. For example, diamonds can receive laser treatments that improve the stone’s color, but a treated diamond is less valuable than an untreated diamond of equal color. Since only a complex laser examination can detect whether a diamond is treated, a buyer often makes a purchase based on a seller’s representation.

Similarly, a diamond’s origins cannot be verified upon inspection. This has become increasingly relevant with the rise of “conflict diamonds,” diamonds mined in some African nations (particularly Angola, Sierra Leone, and Congo) by political-military organizations determined to overthrow a recognized government. Since the conflict diamond sales fund some of the most brutal military campaigns, many consumers refuse to purchase them and many jewelers refuse to use them (note: none of the diamonds sold by the Central Selling Organization are conflict diamonds). They nonetheless make their way through an elaborate global network from the African mines to Antwerp for sale. De Beers estimates that conflict diamonds constitute 4% of the world’s market, though the US and UK governments suspect that the figure is significantly higher. See David Buchan, et al., “The Deadly Scramble for Diamonds in Africa” FINANCIAL TIMES July 10, 2000, pg. 6; Alex Duval Smith “The Gem Trail” THE INDEPENDENT February 13, 1999, pg. 18; Nicky Oppenheimer “Diamonds and Dictators” WASHINGTON POST December 29, 1999, op-ed, pg. 27. Some mines have tried to resolve this hazard by using a laser to inscribe a trademark on their rough diamonds. See, e.g., James Brooke “Canada Tries to Make Clear Its Diamonds Are Different” NEW YORK TIMES August 12, 2000, Section A, pg. 1. For most diamonds, however, this is a contractual hazard that places risks on the buyer.

56 Interview with the author, March 2001.
Consequently, the reach of the DDC arbitration board is limited only to cooperating parties, as it has no inherent power to force any individual to pay an arbitration award. Merchants cooperate with the DDC arbitration board, and cooperate with each other, only to preserve good reputations and protect the opportunity to engage in future diamond transactions. Accordingly, the true power of the DDC’s dispute resolution system rests on the degree to which it supports trust-based exchange and can foreclose future transactions to uncooperative merchants. The DDC fulfills this role by facilitating information exchange and publicizing individual reputations.\(^{57}\)

Historically, the foremost function of all diamond bourses and their less established predecessors has always been to facilitate a flow of information about market participants and business opportunities.\(^{58}\) The Jewish Directory and Almanac notes:

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\text{Diamond clubs sprang from café meeting places where dealers congregated to exchange information and create business. The cafes lead to private houses, used as places for the conducting of business in a private and safe setting. The origin of the word Bourse (trading exchange) can be traced back to the city of Bruges, Belgium in the 15th century where international diamond dealers met in the house of a nobleman named Van der Beurse.}\(^{59}\)
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Thus, like their informal predecessors, today’s bourses provide an infrastructure that organizes a network of dealers. Bourses now serve as vital fountains of information and enable merchants to become familiar with potential business partners.

The DDC supports information exchange with several mechanisms. First, the floor of the trading hall is bustling with information about parties and market conditions, and some traders spend time on the trading floor just to keep abreast of available information. Traders on the floor will ask others about potential business partners and

\(^{57}\) Milgrom, North, and Weingast similarly characterize the role of private judges in supporting trade between 16th century’s Law Merchants in the Champagne Fairs. The judges’ power did not arise from an inherent power to enforce agreements but, rather, from the ability to disseminate information and support a reputation mechanism. See Paul Milgrom, Douglass C. North, & Barry R. Weingast “The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges, and the Champagne Fairs” ECONOMICS AND POLITICS vol. 2, no. 1 (March 1990) (“[T]he role of judges in the system, far from being substitutes for the reputation mechanism, is to make the reputation system, more effective as a means of promoting honest trade.”).

\(^{58}\) Bernstein, supra note 27, writes, “The bourse is an information exchange as much as it is a commodities exchange. As one member put it, ‘the bourse grapevine is the best in the world. It has been going for years and moves with the efficiency of a satellite communications network … Bourses are the fountainhead of this information and from them it is passed out along the tentacles that stretch around the world.’”

\(^{59}\) Shainberg, supra note 3, pg. 308
get references, and supplementary credit reports about diamond buyers float throughout the trading community.\textsuperscript{60} Thus, the Club creates both a physical and a relational infrastructure that facilitates information sharing between members.

A second mechanism is the wall of the trading floor. The wall posts the pictures, background, and references of any visitor to the Club, providing easy referral for potential business dealings (most visitors are required to be sponsored by a member, who is cited as a reference along with the visitor’s picture). The wall also announces the nomination of potential new members and invites current members to comment on the candidate’s reputation. Most importantly, the wall publicizes the judgments from recent disputes before the arbitration board and posts the picture – not unlike a “Wanted” poster – of any party who is responsible for an outstanding debt. This information is shared with all of the world’s bourses, so pictures of delinquent debtors from across the world are prominently broadcasted in the DDC trading hall. Conversely, maintaining good standing as a DDC member – and preventing your picture from ever reaching the wall – also becomes well known and functions as an important information signal.

The DDC’s system of arbitration and information exchange thus sets the stage for other family- and community-based institutions to enforce the industry’s executory contracts; if the DDC announces the verdict, then these complimentary institutions are the sheriffs that enforce it. The DDC is able to rely on community institutions because individuals who share intimate family and community ties dominate its membership.\textsuperscript{61}

\textsuperscript{60} The \textit{Rapaport Diamond Report} collects information about all participating diamond purchasers, particularly jewelry manufacturers, and assigns each a credit rating. It is the Moody’s of the diamond industry. Though diamond dealers are very hesitant to sell to a buyer who does not have a credit rating, such credit ratings are often necessary but not sufficient to convince a seller to sell on credit, as most also demand a personal reference.

The \textit{Rapaport Diamond Report} also reports market prices for diamonds of various sizes and cuts, and interestingly, the DDC board initially opposed Rapaport’s reporting of market prices, arguing that it disclosed the Club’s private information. The DDC tried to expel Rapaport from the DDC and Jewish religious courts initiated excommunication proceedings against him. But Rapaport and the board later reconciled, and Rapaport now enjoys wide support as his newsletter flourishes. His reinstatement perhaps reveals the DDC’s ultimate attraction to efficient information systems.

\textsuperscript{61} The DDC currently has approximately 1,800 members, and in most years there is a waiting list for membership. Dealers petitioning for membership must survive a rigorous informational review, with more lenient requirements governing the admission of immediate family members. See DDC By-laws, Art. 3, Sect. 8., regarding entry requirements (Applicants must (1) have worked in the industry for at least two years, (2) comply with the board of directors’ requests for information, and (3) have his picture posted on the trading floor wall for ten days so members have an opportunity to comment). See DDC By-laws, Art.3, Sect. 3b regarding membership requirements for immediate relatives of current DDC members in good standing.
As was noted above, nearly 85-90% of DDC members are Jewish, and a visitor is struck by a pervasive presence of Ultra-Orthodox Jewry in the Club. Since Orthodox Jews tend to live in discrete insular communities, familiar business relationships are also familiar community relationships, and the members’ ties to each other do not end at the Club’s door. Moreover, family ties also connect Club members, as many members gain entry through the sponsorship of close relatives. In short, extended family and community networks cement the Club’s larger community and reinforce the intimate familiarity and interdependence that Club members have with each other.

The Parties

The driving force behind diamond merchants’ ability to participate in trust-based exchange is their membership to unique socio-demographic groups. This is a system that bases the credibility of one’s commitments on his identity, and a merchant’s membership to these intimate groups is what enables him to make contractual promises that fellow merchants find reliable. This ability to make trustworthy promises – to commit credibly to a contractual obligation that state courts cannot enforce – is what gives New York’s diamond merchants competitive advantages over outsiders. They can purchase goods on credit and gain valuable market information from an insular network.

The identity of each diamond merchant can be placed in one of two distinct categories. In one category fall the “long-term players.” These merchants enjoy family connections to the industry and usually have a proprietary stake in a family-run business. These merchants gain entry into the industry through the sponsorship of a family elder, and later they employ younger family members and eventually bequeath to them the family business. Thus, they are inducted into intergenerational family businesses, work

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62 The other significant contingent of the DDC’s membership is Indian, who comprise approximately 10% of all members, see supra note 9. The entry of Indian merchants into New York’s diamond industry and their substantial presence in the DDC reveals that prospective members do not need to belong to a particular family or ethnic group. However, the DDC’s Indian merchants and Indian diamond business networks are also family and clan-based, and business dealings are deeply intertwined with private community affairs. Thus, Indian family and community institutions serve the same roles in enforcing contracts as their Jewish counterparts.

63 While diamonds pose significant credibility challenges for credit sales, one author has argued that they served to solve a credibility problem of another sort. See Margaret F. Brinig, “Rings and Promises,” 6 J. LAW ECON. & ORG. 203, 213 (1990) (arguing that “engagement rings were part of an extralegal contract
in the family business for their entire careers, and then pass on the same business to their descendents. The second group consists of religious community members, and most workers in this category belong to ultra-Orthodox Jewish communities. These workers are committed to the austere lifestyles of ultra-Orthodoxy, yet they frequently are in possession of enormously valuable cashes of diamonds. The pervasiveness of this second group, the industry’s “diamond-studded paupers,” is a truly striking feature of the diamond trade. When they fill the DDC trading halls, they transact as their ancestors did in Europe’s bazaar markets, though instead of trinkets or small crafts, these paupers peddle cashes of precious diamonds.

Interestingly, a merchant’s identity tends to predict his role in the distribution network: long-term players are primarily dealers or buyers (including jewelry manufacturers), and religious paupers serve chiefly as contractors, such as brokers or cutters. The contrasting roles of dealers and contractors are illustrated by the different transactions in which each participates. “Vertical transactions,” which occur between a diamond seller and a diamond buyer, lead diamonds down the supply chain and primarily take the form of a credit sale. “Horizontal transactions” occur between a diamond owner and a hired party who provides a service. Hired, or contracted, parties include brokers, who search for a buyer and retain a small sales commission, and diamond cutters, who cut or polish a diamond for a fixed fee. Both brokers and cutters assume possession of the diamond but never own it, and they do not give a payment or security to the diamond guarantee” that bound parties to their promise to marry and replaced the old cause of action for a breach of a marriage promise).

After nearly 50 interviews, the author has met only one diamond dealer who did not inherit a place in the industry from a relative, and this individual stressed that he is a very rare exception. Other interviewees agree that diamond dealers can only enter the business with family introductions and sponsorship. Daily buses carry scores of workers directly from Boro Park, Monsey, and Williamsburg – all homes to concentrated ultra-Orthodox Jewish communities – to the diamond district on 47th street.

These categories are not perfect, as there is some overlap. Some brokers maintain an inventory of diamonds and sell for capital gains rather than commissions, and some dealers carry another’s diamonds for consignment. Similarly, some merchants with family connections are also deeply embedded within the Orthodox community and are motivated by the same community institutions that constrain brokers. However, brokers, or those without a stake in a family business, are overwhelmingly from the ultra-Orthodox community, as every merchant is constrained either through intergenerational incentives or through community institutions.

For a brokered sale, a diamond goes from a seller to a broker to a buyer. The first transfer is the horizontal transaction, but it is entrenched within a vertical sale where the buyer will pay the seller on credit.
owner when they take possession. Figure 1 diagrams the diamonds path into these vertical and horizontal transactions.

[Insert Figure 1 Here]

Stark differences separate the two categories of merchants – the long-term players from the religious paupers, the dealers from the contractors. Most but not all the long-term players are Jewish, whereas the paupers are ultra-Orthodox Jews. And unlike the long-term players, the contractors find their way into the industry through community connections. These contractors generally are not connected to family businesses and do not build up a business that they hope to bequeath to a child. In fact, these ultra-Orthodox prefer that their sons commit their lives to Torah study and find financial support without having to work regularly. Whereas the long-term players desire to build up profitable businesses that they can bequeath to their descendants, the contractors hope to accumulate sufficient resources for themselves only so they can leave the business and devote their time to religious study.68

The important observation is that members from these very different groups are motivated and constrained by different forces. Note that all parties – in both vertical and horizontal transactions – engage in a type of time-inconsistent exchange where delivery of the diamond precedes any payment. But since the parties are from two very different groups, they are connected to different community institutions, are constrained by different individuals or institutions, have different business incentives, and have different preferences. Consequently, distinct mechanisms are required to induce the two types of parties to comply with their contractual obligations. What induces one group to cooperate cannot explain the behavior of the other.

68 See Eli Berman, “Sect, Subsidy, and Sacrifice: An Economist’s View of ultra-Orthodox Jews” QUARTERLY JOURNAL OF ECONOMICS (August 2000). Berman describes a process where one generation accumulates capital specifically so their children can engage in full-time religious study well into their productive adult years.
Long Term Players

Though dealers and buyers rely on different industry skills and occupy different locations in the distribution system, a key commonality they share is that both are long-term players in the industry. Sellers have a steady supply of diamonds that they will need to sell, and buyers, most of whom are jewelry manufacturers, rely on being able to purchase precious stones to keep up with demand. Following the Prisoner’s Dilemma paradigm, this long-term market participation allows the prospect of future sales to induce cooperation for current sales.

As was discussed above, the diamond industry introduces two important complications to the simple Prisoner’s Dilemma. First, the industry involves many players who do not necessarily know with whom they will transact in the future, so the prospects of future dealings with a current business partner are not sufficiently certain to induce multilateral cooperation. The second is that the extreme value of diamonds may require an unusually credible mechanism to assure endless exchange (a solution to the end-game problem) and a very high discount rate to support cooperation. These complications are addressed in turn.

Sustaining Multilateral Cooperation.

For cooperation to be sustained when there are many industry players, each player must always be induced by the prospect of future business with other players. In other words, when a player transacts with business partner (B) in time period (t=0), he must be induced by the prospect of future transactions with partners (≠B) in periods (t>0). This is accomplished by a reputation mechanism. If a player’s past dealings are known and all potential business partners know whether a certain merchant has cheated in the past, and all merchants refuse to transact with an individual who has cheated, then players will be sufficiently induced to cooperate with a business partner even if the two will never do business together again.69

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69 The basis for this model is found in Milgrom, North, & Weingast (1990), supra note 57. For another important model, which rests on similar logic but emphasizes bilateral rather than multilateral repeat interactions, see David Kreps, “Corporate Culture and Economic Theory,” in James Alt & Kenneth Shepsle, eds., PERSPECTIVES ON POSITIVE POLITICAL ECONOMY (1990). For an historical example involving cross-continental medieval trade, see Avner Greif “Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders” JOURNAL OF ECONOMIC HISTORY vol. XLIX,
Illustrating how a reputation mechanism can induce cooperation under these conditions does not require a complex mathematical proof. Individual players will cooperate so long as the system promises that their long-run returns will exceed the potential profits from cheating. The burdensome features of the proof are its very demanding conditions: widespread information, accurate information, and coordinated punishment. These conditions are necessary for a reputation mechanism to support multilateral exchange.

The diamond industry has all three. The DDC educates dealers about potential business partners by supporting information networks in which dealers share valuable information with each other, and the Club’s arbitration committee disseminates its decisions and publicizes who it has determined has not complied with their obligations. As a result of these information mechanisms, any member can research into the past of a potential business partner and can learn whether he was non-compliant in a previous transaction.

The reliability of reputation information is crucial to ensure proper incentives to cooperate, yet the availability of such information does not guarantee its accuracy. One source of guaranteeing accuracy is the DDC’s arbitration board. The arbitration board is comprised of insiders who are extremely familiar with the nature of the industry and the difficulties involved in entering diamond contracts. Their expertise helps arbitrators understand the context within which disputes arise, distinguish meritorious from non-meritorious claims, verify the veracity of proffered evidence, and, when appropriate, estimate the appropriate damages. Additionally, the board may respond to misinformation and punish any party responsible for spreading inaccurate information about another’s reputation. In one case, a dealer falsely accused another of stealing his stone. He later realized that he actually misplaced the stone and apologized to the dealer, but the accusation had already become common knowledge. The second dealer then

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70 Given these demanding conditions, some scholars are more skeptical than others over the viability of reputation-based systems of private ordering. Compare Kreps, supra note 69 (presenting a model for reputation mechanisms) with Oliver E. Williamson, Economic Institutions: Spontaneous and Intentional Governance, 7 J.L. Econ. & Org. 159, 167–69 (1991) (detailing the rigorous requirements to support trust-based exchange and the many factors that could disrupt such exchange systems).

71 See supra notes 54-62 and accompanying text.
brought the first before the arbitration committee for impugning his reputation, and the board ordered the false accuser to make a public apology and donate fifty thousand dollars to a Jewish charity.\textsuperscript{72} In sum, DDC by-laws enable the board to utilize its expertise to ensure the accuracy of reputation information.

Another source of information accuracy is a social norm that finds its roots in Jewish law. Consider the following tale imparted by the prominent 19\textsuperscript{th} Century Rabbinic scholar, the Chafetz Chaim:

A man goes before his Rabbi and admits to having spread harmful information about his neighbor. He asks the Rabbi what he should do to repent. The Rabbi says “You need to do the following: go home, find a feather pillow, and release the feathers into the wind.” The man follows the Rabbi’s instructions and returns the next day. The Rabbi then says, “Now, to gain forgiveness, you must go back to your home and retrieve all of the feathers.” “But Rabbi,” the man exclaims, “The feathers by now have scattered throughout the village!” “Precisely!” the Rabbi says. “And so too has the damage you have caused to your neighbor’s reputation.”\textsuperscript{73}

The Talmudic parable encapsulates an aversion to gossip, or La’shon Ha’rah, an emblematic feature of Jewish teachings. As a complement to a system that relies on information about individuals, this community norm serves as a filter for misinformation and unnecessary information. Interviews with diamond merchants confirm this norm. Those dealers who do grant interviews are extremely careful not to share concrete information about specific individuals and share insights only at an extremely high level of generality. Other interviews reveal a serious deliberateness in exchanging information. One dealer asked another about an unfamiliar buyer that was on the DDC trading hall. The second replied, “I hear he is good. I hear he is very good. But don’t take my word. Be sure to ask for his references and talk to members who have dealt with him in the past.”\textsuperscript{74} Another dealer, after sharing in an interview that he had some real difficulty securing payment from a certain merchant (while not naming the merchant), admitted:

That frustrating experience – that is the kind of information I would share with my close colleagues and relatives. If they asked me about what kind of businessman this individual is, I’d tell them that he has given me some trouble. But truthfully, I would only share the information if I were asked – I wouldn’t spread it around on my own initiative. Also, I think I’d only share the information with people I knew well. If a colleague that I don’t know so well asked me about this person, I’d probably just say that I don’t know anything.\textsuperscript{75}

\textsuperscript{72} Bernstein, supra note 27, pg. 127.
\textsuperscript{73} See Chafetz Chaim, SEFER CHAFETZ CHAIM (1873), Chapter 1, Paragraph 10.
\textsuperscript{74} Interview with the author, August 2000.
\textsuperscript{75} Interview with the author, July 2001.
Accordingly, reliable information is available upon request from colleagues, but it does not float around without purpose. This point should not be overstated – teachings that discourage gossip are unlikely to overcome the common frailties of insular communities, and they certainly will not prevent merchants from sharing valuable and accurate information that the system needs to enforce its reputation mechanism. The prohibitions do, however, serve as useful information filters that deter unconstructive and inaccurate communication while enabling the flow of functional information from reliable sources. It also shifts primary responsibility for disseminating information to the arbitration panels, who have carefully examined an allegation before making information public. In a world where good reputations are so critical to commercial success, and where gossip can be so damaging, these filters are necessary to discourage aimless information of questionable veracity.

The third necessary condition for an effective reputation mechanism is coordinated punishment. An individual will be deterred from cheating only if he knows that none of the diamond merchants will transact with him after he cheats. Conceivably, after an individual cheats and thus acquires a bad reputation, he may convince another merchant to do business with him if he sufficiently lowers his prices (the losses from selling at discounted prices could be less than the one-time gain from cheating). But this does not happen. Merchants, exercising appropriate risk aversion, do not assume the clear danger of extending credit to individuals who they know have failed previously to comply with payment obligations. Moreover, their own reputation may suffer if they are known to transact with previous cheaters.

The blockade of a merchant who has previously cheated is not necessarily a categorical rule. There are instances where an individual fails to comply with a commitment he made, and after suffering harm to his reputation, an elder merchant – motivated as much by compassion as by profit – will agree to a deal with him. One dealer described the process as follows:

There are a lot of pressures in the trade. A dealer often has many transactions he has to be aware of, and sometimes he just doesn’t make the right calculation and he is left short of cash when a payment is due. These actions are not condonable – all of us need to keep track of our finances –
but they are understandable. And when it happens to someone you think is basically a good person, sometimes one of the senior Club members will try to help him out and let him recover.76

The elder enters into an agreement with the fallen dealer as a way to allow him to recover and rebuild a reputation. While reputations are fragile and extremely difficult to recover once damaged, rehabilitation is sometimes possible and is substantially aided if a well-respected industry member offers assistance.77 These generosities are most likely to be effective if they are undertaken by a senior leader who commands respect from other dealers. Otherwise, the action would not be a sufficient signal to convince others that the recovering dealer is worth a second chance. This sort of story adds a human dimension to the otherwise strict rules that reputation games require. It reflects the balance between the serious need to deter cheating with the compassionate recognition that individuals have human frailties. The critical challenge is to distinguish between individuals who are either untrustworthy or unreliable from those who made a mistake they are unlikely to repeat.78 The reputation system seems to follow the individuals who have the most information about the individual in question and who have the most experience in judging character.

Note that in this discussion of punishing individuals who do not cooperate, there is no discussion of the arbitration board that assesses damages. Consistent with the discussion about the DDC, the arbitration system alone cannot force compliance and thus cannot explain consistent contractual performance. Nonetheless, the arbitration board wields real power. Its muscle lies in accurately publicizing individuals who fail to cooperate. This leads to a very interesting conclusion. The purpose of the DDC’s arbitration board is not to enforce contracts; it is to maintain the accuracy of reputations.

76 Interview with the author, March 2001.
77 This is consistent with models of cooperation in which entry costs, or gift giving, are required before entering into a trust-based network of exchange. See H. Lorne Carmichael & W. Bentley MacLeod, Gift Giving & the Evolution of Cooperation, 38 INT’L ECON. REV. 485 (1997) (presenting an evolutionary model in which gift giving sustains cooperative exchange because it elevates the cost of reentering exchange networks after cheating). The same result follows a system that imposes significant exit costs; see W. Bentley MacLeod, Equity, Efficiency, & Incentives in Cooperative Teams, 3 ADVANCES IN THE ECON. ANALYSIS OF PARTICIPATORY & LABOR MANAGED FIRMS 5 (1988) (explaining that cooperative networks survive in socialist nations because exiting such networks is very costly)
78 This is best described as an equilibrium condition. If there are enough people who would transact with someone who cheated (or simply was not sufficiently dedicated to complying with contractual obligations), then the effective deterrence from breaching agreements is too dilute to induce compliance. In short, cheating and the resulting loss of trust must be accompanied by a penalty that deters cheating – a nontrivial exit cost – even if reentry into a trusting network is possible. See MacLeod, supra note 77.
Individuals only comply with the board’s rulings so they can continue to transact in the DDC. The board’s decisions have no inherent power.\textsuperscript{79} \textsuperscript{80}

**Securing an Infinite Time Horizon and a High Discount Rate**

If cheating brings extreme one-time rewards, even the threat of banning an individual from all future diamond transactions may not be enough to force compliance. Moreover, individuals present an end-game problem if their participation in the trade reaches an inevitable end. Cooperation is sustained only if parties have an endless future of exchanges and an unlikely low discount rate.\textsuperscript{81} The diamond industry’s consistent presence of family-based firms accomplishes both of these. The intergenerational nature of the family firms extends the time horizon for cooperation beyond the limited lifespan of an individual dealer. So long as a diamond dealer is concerned about his family’s reputation and not just his own, he will continue to have incentives to cooperate even if he plans to retire soon. Parties would only cheat if they knew there were a finite number of future transactions.

For this mechanism to work, reputation information has to be family-specific, not just individual-specific. This is, in fact, how reputation operates in the diamond trade.

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\textsuperscript{79} Milgrom, North, & Weingast (1990) reach a similar conclusion about the system of private judges in the Champagne Fairs, see supra note 57.

\textsuperscript{80} An alternative model that can explain sustained cooperation is if there are two (or more) groups with easily identifiable individuals. If an individual from group A cheats an individual from group B, then all the members of group B will never do business again with the members of group A. Consequently, the prospects of the whole group losing significant future business induces each group to police its own members and to expel any individual who behaves dishonestly. See, e.g., Avner Greif, “Institutions and Impersonal Exchange: The European Experience.” Stanford Department of Economics Working Paper No. 04-009 (2004), available at: http://www-econ.stanford.edu/faculty/workp/swp04009.pdf.

\textsuperscript{81} Some diamond dealers enjoy sizable incomes (De Beers would want to maintain stable downstream distributors and thus is likely to share some of its monopoly rents with dealers), suggesting that the threat of individual sanctions may be sufficient to induce cooperation. A precise comparison between the benefits of cooperation versus the profits from cheating is very difficult. Nonetheless, the end-game problem – presented as each long-term merchant approaches the end of his career – forces the diamond industry to develop a creative solution to the Prisoner’s Dilemma paradigm.
While an individual is trusted and receives business based on his reputation, a young dealer inherits the reputation of his family mentor. Part of this is because the elder sponsors the young relative during his early dealings (by explicitly promising to cover any losses anyone incurs by dealing with the young relative), but an individual’s family connections and associations are very important in attracting business trust even when that sponsorship ends. The DDC by-laws also reflect how extended family relationships extend trustworthiness. Article 3, which governs the process for gaining membership, imposes easier membership requirements for spouses, widows, sons, daughters, and sons-in-law.

Reputation capital can also extend beyond the immediate family, as cousins, nieces, and nephews of respected dealers enjoy some initial trust when they enter the industry.

The value of a family’s reputation has three important economic implications. First, if an individual entering the trade is supported by a family reputation, then he has an important advantage over an identical entrepreneur who has no family connection. The result is a powerful barrier to entry. Observations from interviews support this conclusion. Dealers repeatedly note that one way they feel they can trust an individual is if they know his family, and several stated that the only way an individual can enter the industry is if they have a relative who brings them into the family business.

In fact, the presumption of a family connection to the industry – and the desire to interact only with individuals who have this family connection – caused some dealers to grant an interview only if the author had a family member who was a familiar diamond merchant.

Second, and most obviously, the family-based nature of businesses secures future riches for relatives who currently hold entry-level positions. Young relative employees who handle their elder’s diamonds have the very reasonable expectation that they will inherit the business. This is enough to make their individual time horizons very long and induce them to cooperate.

The third economic consequence to family reputations, and the one most critical to sustaining cooperation for multiple generations, is that reputation can be both bequeathed and leveraged. If a leader of a family business has a good reputation, he can

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82 DDC by-laws, Art. 3 Sections 2a and 3b.
bequeath the reputation to several descendants. Accordingly, the elder merchant is motivated by the prospect of a larger number of future transactions than just the number he would execute if he lived forever. So an individual’s imminent retirement is no cause for an end-game problem. In fact, the opposite may be true – when a dealer nears the end of his career, he knows that his reputation will influence the transactions of several relatives. Mathematically, this causes the dealers’ discount rate (δ in footnote 46) to be very high. Conceivably, an individual who has many descendants could actually have a discount rate that is greater than 1. This premium on future transactions is critical to sustain cooperation in the face of large returns from one-time defections.

Note that in this discussion of long-term players, the role of Jewish community institutions is mostly secondary to the importance of family connections and industry rules. This section argues that Jewish norms and the intimacy of the Jewish community play valuable functions in spreading information among industry players and in coordinating punishment, but the Jewish community is not alone in its ability to spread accurate information. The only irreplaceable aspect of the long-term players is their predominant tendency to be connected to intergenerational family businesses, and that feature is by no means exclusive to the Jewish community. The value of family here is paramount, and the value of the ultra-Orthodox participation is necessary only in the short-term players in the following section.

“Diamond Studded Paupers”

The ultra-Orthodox brokers and cutters, who constitute the second category of diamond merchants, provide important value-added services and are critical in making the diamond industry profitable. However, since they are much less likely to bring their descendants into the diamond trade, the prospects of future exchange is insufficient to induce them to cooperate. In fact, because of their commitment to ultra-Orthodox Judaism and love for traditional religious learning, they would like nothing more than to stop working and engage in full-time study. Their incentives to cooperate must take effect within a much shorter time period.

83 See supra note 64. There are some exceptions to this rule, but very few, and even the exceptions describe themselves as very unusual anomalies.
These individuals pose another interesting challenge to basic, profit-maximizing economic theory. Unlike many successful dealers and jewelry manufacturers, they are not wealthy people. This is striking given the industry in which they work – they have lots of diamonds, but no money. Brokers do not have any real human capital, allowing free entry into their profession, and all but the most master cutters have skills that are learned fairly easily. Thus, the labor markets for brokers and cutters are very competitive and their incomes are very low. The consequence is an observation that is striking to the observer: scores of diamonds fall from the fingertips of these workers, yet the rest of their bodies are covered with tattered clothes.85

These workers also operate with a tremendous degree of informality. At their level of transactions, contracts are the least formal and many operate essentially paperless businesses. A diamond cutter, for example, will have piles of diamonds before him, each wrapped with a small piece of paper and placed in an envelope. Clients will drop off such envelopes, with the owner’s name written on the cover and some cutting instructions inside, and then leave without asking for a receipt. Accordingly, clients have no verifiable record that their valuable cache of diamonds are in the possession of a cutter or broker, thus there is no legal recourse that prevents a broker from stealing a valuable cache and leaving the country.86

A simple profit maximization model simply cannot explain sustained cooperation of this degree, and a more complicated utility model is required. One useful model that can explain seemingly non-economic behavior, and one that has been employed by

84 See infra Section V (discussing intergenerational Belgian and Indian family firms).
85 There should be no doubt that these workers have extreme value in their possession. Several interviews proceeded as follows:
   Author: “So let me get this straight, brokers carry around thousands of dollars worth of diamonds…”
   Interviewee (with a laugh): “Thousands???”
   Author: “OK, tens of thousands of…”
   Interviewee: “Tens of thousands??” (another laugh) “Do you know how much diamonds are worth?”
86 One diamond cutter was discussing his trade with the author while continuing to polish the diamonds. Then, after he opened a small envelope with his next diamond to polish, he stopped mid-sentence. The stone was flawless and the size of a grape. He cradled it in the back of his hand, admiring its beauty before proceeding with the grinding wheel. The conversation concerning the giant diamond followed other conversations about dollar amounts in the industry (see previous note):
   Author: “Wow! How many thousands of dollars do you think that is worth?”
   Interviewee (with a laugh): “Thousands???”
Interview with the author, August 2000.
scholars of religious sects, is a “club good” model. In clubs, members have preferences both for standard consumption goods and also for excludable club-specific goods. Only club members can enjoy these club goods, and each member of the club experiences externalities from every other member’s behavior. Consequently, the club will manipulate consumption of club goods in order to induce behavior that is desirable to the community.

Following models in Iannaccone (1992) and Berman (2000), the club good can explain the sustained cooperation of ultra-orthodox Jewish workers in the diamond industry. The model represents a club member’s utility as a joint function of consumption of normal secular goods, $S$, and participation in club-specific religious goods or activities, $R$. Members also derive utility from the “quality” of the group’s collective religious activities, $Q$, which is an externality and rises with the number and average participation of the other members. Formally, a club member’s utility is:

$$U_i = U(S_i, R_i, Q) \text{ for } i = 1 \text{ to } N \text{ members, where } Q = \Sigma_{i \neq j} R_j/(N-1)$$

and

$$\partial U_i/\partial S_i, \partial U_i/\partial R_i, \partial U_i/\partial Q > 0$$

and

$$U(0, \bullet, \bullet) = U(\bullet, 0, \bullet) = U(\bullet, \bullet, 0) = 0$$

Only the broad themes of this model are necessary to explain the cooperation of the Orthodox brokers and cutters, and the most important lessons are embedded within the elementary assumption that $U(0, \bullet, \bullet) = U(\bullet, 0, \bullet) = U(\bullet, \bullet, 0) = 0$. $U(0, \bullet, \bullet) = 0$ means that an individual cannot survive without material goods or money, which claims no more than any standard utility function. $U(\bullet, 0, \bullet) = 0$ means that an individual has zero utility if he receives no club goods from the community. Consequently, a member will avoid excommunication from his community at all costs, and more usefully, he will get zero utility if he steals millions of diamonds if it means that he will have to live away from his

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87 See, e.g., Berman, supra note 68 (describing several seemingly uneconomic practices in the ultra-Orthodox community, including the expenditure of significant family resources and time to practice religious rituals). See also Richard Cornes and Todd Sandler THE THEORY OF EXTERNALITIES, PUBLIC GOODS, AND CLUB GOODS (Cambridge University Press, 1986) for a good theoretical overview of club goods.

88 Laurence R. Iannaccone “Sacrifice and Stigma: Reducing Free-Riding in Cults, Communes, and Other Collectives” JOURNAL OF POLITICAL ECONOMY vol. 100, no. 2 (1992); Berman, supra note 68.
fellow Orthodox Jews. $U(\bullet, \bullet, 0) = 0$ has essentially the same meaning; an individual gets zero utility if he is without his community.

The assumption $U(\bullet, 0, \bullet) = 0$ answers the core of the puzzle. Ultra-Orthodox cutters and brokers will not steal diamonds because they either will have to flee the community to escape prosecution or the community will punish a thief by withholding community goods and, in the most severe circumstances, will excommunicate the thief. Any of these outcomes will lead $R_i = 0$ for the guilty community member, $i$. The variable $Q$ gives the entire ultra-Orthodox community the required incentives to punish unethical behavior since such behavior reduces each member’s utility. As a consequence, the community will establish certain norms and institutions that will induce ethical behavior and punish transgressions.

As with the long-term players, proving that this hypothetical model can induce idealized cutters and brokers to comply with their contractual obligations does not require a rigorous mathematical proof. The more difficult task is to find evidence of the assumptions underlying the model and proof that the model accurately reflects the ultra-Orthodox community. The required evidence requires demonstrating that ultra-Orthodox individuals are motivated by non-standard religious goods (i.e. that $R_i$ belongs in the joint utility function), consider contractual compliance to be a religious act (i.e. that breaching a contract lowers $R_i$ thus, via the variable $Q$, reduces the utility of all members), and have norms and community institutions that motivate coordinated punishments for unethical behavior (i.e. the community acts to ensure that $Q$ remains high).

**Religious Goods**

Proving that the ultra-Orthodox have preferences for goods beyond standard consumption goods is the easiest of these three tasks. Berman (2000) illustrates how preferences for religious club goods result in outcomes that appear truly perverse to standard price theory, and casual observations reveal that the ultra-Orthodox have intense preferences for activities that are unique to their sect. One interesting feature is that the ultra-Orthodox preference for religious goods fits very comfortably into the notion of a
utility function. They gain true enjoyment – the definition of utility – by participating in religious activities such as attending synagogue, studying religious texts, and performing holiday or life-cycle rituals. Moreover, many of these activities require the participation of fellow community members, thus one member’s enjoyment from these activities is partly dependent on the behavior of his colleagues.

The important feature of the club good utility function that compels Orthodox Jews to remain in their community, the $U(\bullet, 0, \bullet) = 0$ condition, also enjoys broad support from casual observation. In interviews, ultra-Orthodox brokers and cutters thought it was absurd when asked what prevents them from stealing the diamonds. Never was the answer that they would get caught, which they might, but that was not the primary deterrent. Most conversations proceeded as follows:

Author: So none of these diamonds before you belong to you?
Cutter: That’s right. I polish them and then I return them to the owner.
Author: Why don’t you just take them?
Cutter: What?
Author: These are worth a tremendous amount of money. They could support you and your family probably forever. Why don’t you just take them?
Cutter: (smiling) Where would I go?

The cutter asked the last line rhetorically and with some bewilderment at the question. This sort of conversation is hard to translate into statistical certainties, but it conveys the pervasive and unmistakable sentiment that the ultra-Orthodox are deeply tied to their community. There is no other place that this interviewee would want to go and raise his family. Stealing the diamonds would certainly prevent him from returning to the community, and the rest of the world has no adequate substitute. Accordingly, any increase in secular goods, $S$, that results from a theft are more than offset by the loss of

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89 The $U(\cdot, 0, \cdot)$ condition is the required condition to overcome the significant temptation of cheating, where in the Prisoner’s Dilemma game, $\alpha >>> 1$, see supra note 46. Similarly, it is another way to model the high exit costs that are necessary to sustain cooperation, see MacLeod, supra note 77.

90 Interview with the author, August 2000.

91 It is worth noting that there are many different ultra-Orthodox sects, each with its own fairly self-contained community. One distinction that separates ultra-Orthodox communities is the division between the Hasidim (literally, “pious ones”), who emphasize a spiritual and pietistic observance, and the Misnagdim (literally, “opponents” [of Hasidim]), who emphasize a stricter legal and academic observance. Other subdivisions further distinguish communities from each other, including the Lubavitch, Satmar, and Belzer sects of Hasidism. While these divisions among the ultra-Orthodox have been diluted as the common threats of secularism and less observant movements of Judaism gained popularity, these distinctions continue to thrive. See generally, Samuel Heilman, supra note 7, at chapter 2. Consequently, though the world is home to many ultra-Orthodox communities, the heterogeneity compels community members to remain in their original sects.
all religious goods, \( R \), that the thief suffers from leaving his community. Such location-specific preferences serve as credible assurances against flight.

**Contractual Compliance as a Religious Act**

Ancient and medieval Jewish scholarship is surprisingly lacking of works in economics. While Hellenistic and early Muslim scholars made progress in the early study of positive economics, Jewish teachers focused on legal and philosophical studies. Consequently, “the emphasis upon ethics and psychology far outweighed a realistic conceptualism” and we are left with only normative examinations of economic life.\(^{92}\)

Even Maimonides, the Jewish twelfth-century rational philosopher who codified the modern sciences for Jewish scholars, neglected the studies of economics, writing:

> On all these matters philosophers have written books which have been translated into Arabic, and perhaps those that have not even translated are even more numerous. But nowadays we no longer require all this, namely the statutes and laws, since man’s conduct is [determined] by the divine regulations.\(^{93}\)

Just as Maimonides viewed individuals’ economic behavior as a function of divine law, so do the ultra-Orthodox view their economic behavior as reflections of the divine. Complying with contractual obligations thus take on a divine quality. Fulfilling one’s contractual obligations is an act that is commanded by the religious law, and thus complying with contractual obligations to another human is also complying with a divinely inspired commandment. Accordingly, fulfilling contractual obligations increase an individual’s \( R_i \), and individuals who violate these ethical precepts reduce the value of \( Q \) for the entire community.\(^{94}\)

Jewish legal commandments for ethical behavior in commerce extend beyond contract compliance. The doctrine of the “just price” and the theory of “misrepresentation,” which prohibit fraud and thus support efficient exchange, also rest on similarly religious language and divine incentives. The just price doctrine led to strict

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\(^{92}\) Baron, supra note 3, p. 78.

\(^{93}\) Moses Maimonides TREATISE ON LOGIC (*Millot ha-Higgayon*). Translation by Israel Efros. 18f. It is worth noting that Maimonides remains an important ingredient of ultra-Orthodox study, and his twelfth-century texts continue to play an important role in traditional religious education.

\(^{94}\) Jewish law requires other economic behaviors, such as the protection of private ownership and mandated crop rotation, that have clearly efficient consequences but nonetheless rested on purely ethical and religious justifications, not economic reasoning. See Baron, supra note 3, p. 49-54.
rules for accurate weights and measures, leading Maimonides to abandon certain sensitivities and warn:

The punishment for [incorrect] measures is more drastic than the sanction on incest, because the latter is an offense against God, while the former affects a fellow human. He who denies the law concerning measures is like one who denies the Exodus from Egypt which was the beginning of this commandment.  

Similarly, the theory of misrepresentation prohibited a merchant from overcharging or even undercharging for a certain good. Jewish law carved out certain exceptions, particularly for items that were hard to value, but the sanction allowed the injured party to nullify any sale.  

These additional Jewish legal principles further illustrate how Jewish law infuses commercial dealings with ethical precepts. Merchants are not permitted to exploit or mislead their business partners, and a businessman who achieves success by honest dealings enjoys both monetary and divine rewards.

These ethical principles are very much alive in today’s ultra-Orthodox community, as brokers and cutters draw a direct relationship between contractual performance and ethical behavior. The most common instance occurs when one is asked with whom they do business. The answer goes beyond whether the individual is considered reliable and always assumes an undertone of moral judgment, such as:

Who do I do business with? Well, who do I trust? Is the person a good, reliable, trustworthy individual? Is he an honest and decent human being? Does he come from a good family and a good community? These things are important.

Similarly, ultra-Orthodox merchants view their commercial actions as a part of moral example they assume as observant Jews and as providers for their families. Another

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95 Moses Maimonides, Yad, Genevah 7, 1-3, 12; 8, 1, 20, with reference to BB89b.

96 As a general matter, Jewish law adapts functionally to economic and social demands. Salo Baron writes: [The Rabbinic Tradition] made it possible for scholars to read into the established texts of Bible and Talmudic provisions, as well as limitations, to suit the changing needs of Jewish society. In this way the people’s intellectual leaders were able to preserve a measure of continuity within a bewildering array of diverse customs and usages. [In] many cases the communal leaders, rabbinic and lay, often personally immersed in a variety of economic enterprises and this acquiring much practical experience, consciously made interpretive alterations to reflect genuine social needs. … They thus lent Jewish economic rationales the same kind of unity within diversity that permeated the entire Jewish socioreligious outlook on life. Baron, supra note 3, p. 54.

97 Religious Jewish texts are replete with additional passages that affirm the sanctity of verbal promises. See, e.g., Proverbs 6:1-2 (“My son, if you have stood surety for your fellow, Given your hand for another, You have been trapped by the words of your mouth, Snared by the words of your mouth.”) (Jewish Publication Society translation, 1985 ed.).

98 Interview with the author, October 2001.
common response when asked why merchants do not pursue obvious wealth by shirking contractual duties is, “that’s not what I want to teach my kids.”

Though rare, ultra-Orthodox communities do occasionally watch some members leave for less observant communities or other ultra-Orthodox sects, and such defections from the community can dilute the effectiveness of community enforcement. Thus, membership in the ultra-Orthodox community may be a necessary but not a sufficient condition to induce sufficient confidence that a given community member is trustworthy with another’s diamonds. Accordingly, diamond merchants will look for other assurances that suggest that a diamond contractor is committed to the community and thus committed to cooperation. Similar to the requested references diamond merchants will ask from a long-term player, community members will look to family signals or neighborhood references that indicate a merchant is fully embedded within the community. Interestingly, ultra-Orthodox community institutions do much of this filtering themselves. For example, males generally remain full-time students of religious studies for several years after getting married and beginning families. By the time a male completes full-time study and is ready to assume economic responsibilities, he already has a spouse and children entrenched within the community and is far less likely to depart. Such entwinement within the community serves as an additional commitment device.

This use of moral language to characterize business acumen is more than metaphoric. For the equilibrium to support exchange, the moral rhetoric must do more than serve as efficient communication; it must also have a direct impact on a merchant’s utility function. The following model illustrates this. One could imagine an equilibrium where contract breach is very rare, and members of the community are inclined to forgive

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99 The harsh language used by Maimonides and other commentators to prohibit unethical behavior in the marketplace may also contribute to the Orthodox’s meticulousness in preserving a good reputation. Such meticulousness, of course, translates into economic benefits in the diamond trade, and merchants accordingly zealously protect the quality of their reputations. For example, the DDC arbitration board allows a member to accuse another for smearing his reputation and recover damages, even if the two never engaged in a transaction.

100 Berman, supra note 68, discusses the conflicting pressures to commit many years to study while fulfilling the biblical commandment to “be fruitful and multiply” by marrying young and having many children. A young couple frequently will live with their in-laws for several years or will receive community stipends until the male completes his religious study, often continues until he is 40 years old. Several similar commitment devices signal to community leaders who is worthy of economic support.
a transgressor when a breach occurs since the community knows that he is unlikely to transgress again. While this would dilute deterrence, it would be an efficient outcome if members’ utilities were functions only of secular wealth and religious participation (excluding the religious utility from contract performance) since a punishment of withholding religious goods is a loss to everyone. However, contractual performance itself affects an individual’s utility, and thus every community member’s utility, then there is an additional incentive to deter contract breach. The equilibrium outcome would provide better deterrence against contract breach, and the community’s hostility towards contractual breach (and punishment thereof) would be a wealth-increasing norm.\textsuperscript{101}

Community Institutions as Enforcement Mechanisms

While violating a contractual obligation reduces an individual’s $R_i$ and thus reduces his utility, breaching his contract could still bring an overall gain in utility if the monetary gains, from a larger $S_i$, outweigh the loss from the reduction in $R_i$. Consequently, the community cannot rely on individuals to police themselves. They must resort to community institutions to supplement enforcement.\textsuperscript{102}

\textsuperscript{101} A similar outcome could be achieved even if there are not any negative externalities from an individual’s contract breach. If an individual gained a small positive utility from every contract he fulfills, then the costs of losing future sales from a one-time breach are far greater than merely lost profits. This additional loss in utility may be sufficient to induce an individual to cooperate, and the effect of externalities may not be necessary.

\textsuperscript{102} This discussion is an effort to articulate specific mechanisms of how community institutions and social structures help support economic exchange. Though there is a debate over the degree to which economic behavior in social relations is a product of social structure versus a product of economic maximizing, compare David Kreps, supra note 44 (explaining cooperation between economic actors as a calculative game) and Oliver Williamson, MARKETS AND HIERARCHIES (1975) (explaining the boundaries of firms as an effort to minimize transaction costs) with Mark Granovetter, supra note 44 (arguing that much modern economic behavior is explained by embedded social structures), this discussion finds support from both sides of that debate. While the structure of the ultra-Orthodox community undoubtedly plays an important economic role, and while that economic role may help sustain the community in its current form, the roots of the community’s structure is found far outside the lucrative diamond industry.

Interestingly, the community features described here are not limited to inducing ethical economic behavior, and the ultra-Orthodox community uses coordinated sanctions and the denial of community goods to force other behavior that state courts cannot induce. One prominent and controversial example is the plight of the Agunah, or “chained wife”, the woman who is separated from her husband but has not yet secured a divorce. According to Jewish law, wives cannot unilaterally divorce their husbands, and previously married women cannot remarry unless their husbands grant them a religious divorce. Many husbands refuse to grant the religious divorce either to extort concessions from their wives or simply to spitefully exercise control over their wives’ personal lives. Consequently, some communities mobilize to compel husbands to grant their wives divorces. Such compulsions include the denial of community honors or synagogue participation, and more draconian compulsions include physical force and threats of violence. These are the same enforcement mechanisms that assume economic importance in the diamond industry.
One blunt enforcement instrument is to use rabbinical courts to excommunicate an offender, and though excommunication proceedings are not unprecedented, it is an extremely severe and rare sanction.\textsuperscript{103} Rabbinical courts are more likely to impose less severe measures, such as stripping an individual of a community honor or an order to compel an individual to make a charitable contribution to a community charity. Nonetheless, the mere power to excommunicate, even if it is rarely invoked, is probably the most effective instrument the rabbinical courts have to induce cooperation. The DDC arbitration committee itself can initiate a proceeding in a rabbinical court, and the close connection between the two forums illustrates the diamond industry’s reliance on community institutions to help enforce contracts.

Less formal institutions also play a role in enforcing contractual compliance. When the community is familiar with a member’s failure to comply with contractual obligations, a withholding of excludable community goods, R, often occurs. Excludable religious goods include participation roles in daily prayer, honors in life-cycle ceremonies, and access to classes or teachers that are in limited supply or enrollment in particularly select educational institutions. Hovering throughout these specific goods is community respect, which certainly brings an individual direct utility but also is expressed through the assorted community events listed here. One outstanding expression of community respect pertains to how easily – and with how prominent a family – parents can arrange their children to marriage. Arranged marriage is the norm in many ultra-Orthodox communities, and a family’s community status is both a leading factor and a direct reflection of with whom they arrange their children to marry.\textsuperscript{104}

\begin{footnotesize}
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\item For an overview of the Jewish legal issues concerning the Agunah, see Bernard S. Jackson “Agunah and the Problem of Authority”, lecture delivered on March 13\textsuperscript{th}, 2001 under the auspices of the Institute of Advanced Legal Studies. \href{http://www.mucis.org/2001jlpf.pdf}{http://www.mucis.org/2001jlpf.pdf}. For a personal perspective of the plight of the Agunah and resources for Agunot, see \href{http://www.agunot-campaign.org}{http://www.agunot-campaign.org}.
\item Bernstein, supra note 27, reports that the DDC arbitration board initiated an excommunication proceeding against Martin Rapaport, the diamond dealer who began the Rapaport Diamond Report, see supra note 60.
\item Heilman, supra note 7, writes about the role shadchanim, or matchmakers, play in arranging marriages in some communities: In the haredi (ultra-Orthodox) community, the shadchan is like the college or army recruiter. He or she comes near graduation time and knows exactly where and when to find prospects.” The central challenge of a shadchan is to find a young boy and girl who enjoy (or suffer from) a comparable social status, based on their families’ histories, their families’ wealth, the boy’s academic background and prowess, and to a small degree, their relative attractiveness. Shadchanim make offers and counteroffers to the children’s parents until both sets of parents agree
\end{itemize}
\end{footnotesize}
Importantly, Orthodox Judaism is replete with concrete, identifiable community goods that have subtle hierarchies. Small distinctions can translate into either valued honors or disappointing slights, and the large number of religious goods offers community leaders a broad menu of punishment options with an assortment of severity, including distinctions that would go unnoticed or unappreciated by an outsider. Consider the one diamond merchant’s remarks:

> It really doesn’t happen very often, but sometimes an individual has poor judgment and is unable to deliver on a business promise. Usually his business partners and he are able to renegotiate something fair and little damage is done, or maybe someone else comes to his aid and, for a small price, helps him out. But there’s no avoiding that we knew he made a mistake and that we are disappointed. We don’t try to punish him – you have to understand the financial pressures that come with the business and with the burdens of raising a large family. But we remember. So he probably doesn’t get shishi.105

*Shishi*, which means ‘sixth’ in Hebrew, refers to the sixth *Aliyah*, or Torah reading, during the Sabbath services. Every Saturday morning, seven portions are read from the Torah, and seven individuals from the community are asked to read the blessings that come before and after each reading. Being asked to say the blessings for any *Aliyah* is an honor – certainly not the community’s greatest honor, but an honor nonetheless. Some ultra-Orthodox communities consider the sixth *Aliyah* to bestow the greatest honor of all since human beings (Adam and Eve) were created on the sixth day. Accordingly, the community can make deliberate distinctions that give honor to respected individuals while withholding respect from others. Such distinctions do not expend community resources, but they decrease the utility of the breaching individual. By tailoring the punishments to match the severity of the harm done, these distinctions have an appropriately substantial deterrent effect.106

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105 Interview with the author, March 2001.

106 The “spotlight effect” also probably plays a role in deterring a merchant from contract breach. While a withholding of a community honor may not seem significant to a third party, its effect is more acute to the targeted individual. This mismatch between the perceptions of the target individual versus bystanders allows a community to effect measurable deterrence with little effort or attention. See Gilovich, T., Medvec, V.H., & Savitsky, K. “The Spotlight Effect in Social Judgment: An Egocentric Bias in Estimates to a match. “The marriage is kind of a *contractual* arrangement, a deal, with the couple having the right of refusal but little else. But more than that, it is also a *social* arrangement, a way to locate the couple in the community, a way of institutionalizing their passage into the next phases of their lives so that they may stay in that community. (emphasis in original) pp. 277-286. Heilman adds that ultra-Orthodox communities vary in the degree of autonomy they grant the children in selecting their mates. But a young man will always consult with his parents, his community, and his religious teachers before making any decision. Powerful forces combine to correlate a family’s community status with the quality of their children’s mates.
The passage illustrates another nice feature of this form of community disciplining: it’s done with compassion. Interviews reveal that there are inevitable interconnections between an individual’s commercial behavior and the community respect he subsequently receives, but the community always responds with a forgiving overtone. Community members understand the temptations of ambitious deals, the difficulties of managing liquidity constraints, and the costs of inexperience. Punishments, when invoked, are accompanied with sympathy and, when necessary, some financial assistance. The only requirement to accomplish the necessary deterrence is that the loss in utility from a withholding of religious goods, R, be at least as great as the corresponding gain in utility from the additional secular goods, S. This is accomplished easily as long as a one-time cheat results in a reduction of R for many subsequent time periods. A breach in trust, whether due to calculativeness or carelessness, remains in community members’ memories, and so the punishment for such a breach is certain to be long-lasting, even while it is neither draconian nor debilitating.

The remarkable features of these community enforcement mechanisms is not that they work perfectly – no enforcement system is perfect, and the Orthodox community experiences theft like all others – but that they are intimately intertwined with the natural community fabric. Ethical business behavior is, simply, ethical behavior, and an honorable businessman is an honorable community member. There appears to be nothing inherently Jewish about these values, but Jewish law and the community’s system of disbursing excludable community religious goods has become intimately enmeshed with the enforcement needs of the business world. Such a combination of institutional complementarities has created a remarkably effective system. While all of those interviewed noted that there have been and will continue to be merchants who cheat, make mistakes, or somehow deviate from their contractual obligations, these occurrences are extremely infrequent given the quantity of transactions and the amount of credit in which merchants engage. The ultra-Orthodox have managed to institute a remarkably effective system without measurably adulterating their religious community.

Conclusions and Implications

To summarize, New York’s diamond merchants can be divided into two groups of players. Long-term players enter the industry through family connections and are induced to cooperate because maintaining a good reputation invites the promise of inheriting the family business and later bequeathing it to their descendants. Independent contractors who do not have the prospects of family legacies come overwhelmingly from the ultra-Orthodox community. They comply with their contractual obligations because failing to do so would prompt the denial of excludable community goods. This combination of family-based reputation mechanisms and community-based enforcement institutions allows New York’s diamond merchants to organize reliable time-inconsistent exchange.

The implications of this two-pronged system of enforcement is that all players who are trusted with another’s diamonds must belong to one of the two categories and be subject to its respective punishment devices. The system embodies what Yoram Ben-Porath called “the F-Connection,” where trade networks organized around families and friends (i.e. community members) can execute implicit contracts that enjoy efficiencies unavailable to formal, arms-length transactions. However, there is nothing inherently Jewish about the F-connection, and nothing precludes successful enforcement of relational contracts between non-Jews and non-Orthodox Jews so long as either family or community connections assure cooperation. Moreover, as the following Section illustrates, some non-Jewish communities have shown to privately enforce diamond contracts and have thus entered into the diamond industry. Though this section explains how Jewish merchants have succeeded in the diamond industry, it does not explain why (nor does it argue that) only Jewish merchants have succeeded.

Why then is there Jewish predominance in the industry? Only speculative answers are available. Perhaps while Jewish family or community connections may not be necessary, core features of Jewish history and the traditional organization of the Jewish community can explain why Jewish merchants were more likely than other ethnic groups to dominate the diamond trade. Section II discussed why medieval Jewish

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merchants were attracted to trades with portable commodities, and the benefits of intergenerational family businesses tended to keep certain families and ethnicities within the industry while leaving others out. While Section II notes that a path dependency argument does not appreciate how the industry’s organization economizes on transaction costs and enjoys efficiencies from time-inconsistent exchange, intergenerational connections do impose significant entry barriers that create a trajectory in which today’s industry players are the descendants of past leaders. Furthermore, this Section discusses features within the ultra-Orthodox that create incentives to identify uncooperative businessmen and provide a capacity to issue coordinated punishments. Religion-based norms facilitate the sharing of accurate reputation information and establish a critical link between merchants’ business reputations and their community standing. Jewish law further espouses values that easily support reputation-based systems of exchange, and the insularity of the community establishes clear demarcations that distinguish trustworthy insiders from unfamiliar outsiders. Frequent participation in religious activities creates a widespread demand among the ultra-Orthodox for excludable religious goods, the ritualistic nature of ultra-Orthodox religious practice makes these religious goods easily identifiable and discernable, and the structure of religious life provides concrete systems that disburse – and importantly, withhold – these excludable club goods. Finally, the paramount personal importance of religious life in an irreplaceable community and the thorough entanglement of community members with community institutions virtually preclude the risk of flight. Other communities may house similar mechanisms, but these community features reach a complexity and precision that are difficult to replicate, suggesting that the traditional Jewish community is particularly situated to support the enforcement of informal contracts.

In sum, Jewish history illustrates why Jewish merchants were attracted to the diamond trade, Jewish community institutions help explain why Jewish communities were particularly able to enforce informal contracts, and the advantages of intergenerational firms sustained early Jewish industry leadership. The traditional Jewish community does not enjoy a monopoly over these traits, but the combination of these factors offer a plausible explanation as to why Jewish merchants usurped and maintain industry leadership. Since the diamond trade is also home to many non-Jewish
merchants, they too must be subject to either family or community enforcement mechanisms. The following section tests these implications in other settings that confront the same contractual hazards.

V. RELATED INSTANCES OF PRIVATE ENFORCEMENT

The success of the ultra-Orthodox in enforcing informal contracts mirrors the success of other ethnically homogeneous communities who have built prosperous networks of commerce. One prominent and well-studied example is Chinese family businesses in Southeast Asia.\footnote{See, e.g., Alice G. Dewey PEASANT MARKETING IN JAVA (1962); Cyril S. Belshaw TRADITIONAL EXCHANGE AND MODERN MARKETS (1965); Murray Wiedenbaum & Samuel Hughes THE BAMBOO NETWORK: HOW EXPATRIATE CHINESE ENTREPRENEURS ARE CREATING A NEW ECONOMIC SUPERPOWER IN ASIA (New York: Martin Kessler Books, 1996).} In both Jewish and Chinese networks, community members serve as brokers between merchants and enforce executory contracts without relying on formal court ordering. Some have generalized to construct a comprehensive theory on the “Ethnically Homogeneous Middleman Group” (EHMG),\footnote{Landa, supra note 28.} but this overarching theory does not presuppose that these extremely different communities employ similar tactics to discipline members. While New York’s ultra-Orthodox and Java’s Chinese may have similarly insular communities and closely knit families, it is hard to imagine that communities with such different cultures and ethnic heritages employ the same enforcement mechanisms.

Nonetheless, diamond transactions present the same contracting challenges regardless of the identity of the transacting parties, and the presence of non-Jewish diamond merchants, even if they do not control a market share as large as their Jewish counterparts, present a test to the implications from Section IV. If either a family or a community connection were required to support time-inconsistent exchange, then the same institutional conditions would be present in other diamond centers populated by different ethnic and national groups. Examining these and other instances where informal contracts are an efficient method of economic organization can serve as a quasi-empirical test to the Section IV argument.
Antwerp

Belgium’s diamond trade traces its roots to the port city of Bruges, where merchants began importing diamonds from India in the Middle Ages. Shipping traffic shifted to nearby Antwerp in the late 14th century, and with Vasco da Gama’s discovery in 1498 of a direct sea route to India, the Lisbon-Antwerp route to India gained popularity. Antwerp’s leadership in diamonds came in the 15th and 16th century when Jewish cutters were expelled from Spain and Portugal and fled to Antwerp and Amsterdam. Antwerp yielded global leadership to Amsterdam when Spanish attacks in 1585 drove away many merchants. However, Antwerp’s trade revitalized when diamonds were discovered in South Africa in 1870, and a dispute between diamond merchants and the Dutch government further caused the trade to move back to Antwerp. While Antwerp Jewry was largely decimated in World War II, 500 dealers transferred the city’s diamonds to London during the German occupation and enabled the city’s industry revival after the War.

Of all the world’s diamond centers, Antwerp most closely resembles New York. The city’s diamond trade is dominated by 1,600 family-based companies whose members largely belong to three distinct ethnic groups: native Belgian, Jewish, and Indian. While the Indian traders are relatively recent arrivals, as they are in New York, the Jewish and Belgian family businesses have long histories in the country, and many of the Belgian families trace their roots to the original traders in Bruges. The family businesses are concentrated around four interconnected bourses that, like the New York DDC, have arbitration systems and serve primarily as a central meeting place. In short, Antwerp’s industry rests on long-term players in intergenerational family businesses and institutions to share information and support reputation mechanisms.

Also like New York’s trade, Antwerp’s brokers and cutters have been predominantly Orthodox Jews. In the beginning of the 20th century, Jews constituted three quarters of the city’s diamond brokers and an even higher percentage of the factory owners, and the city’s large ultra-Orthodox Jewish population led Antwerp to be known as the “Jerusalem of the West.” Today, cutting factories in India, enjoying cheaper labor costs, have supplanted most of the cutting in Antwerp, and the city has seen its peak

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of 30,000 workers fall to less than 3,000. Nonetheless, the ultra-Orthodox presence remains strong in Antwerp and continue to serve as brokers to the Jewish family businesses.\footnote{For a nice, and not entirely obsolete, discussion of Antwerp’s Jewish community, and its involvement with the diamond industry, see Jacques Gutwirth “Antwerp Jewry Today” JEWISH JOURNAL OF SOCIOLOGY vol.10, pp.121-37 (1968).}

Antwerp’s trade fits neatly into the model described by New York’s trade. Diamond merchants belong to family-based companies who have been involved in the trade for centuries, and Orthodox Jews predominantly serve as the city’s cutters and brokers.

\textit{Mumbai}

For nearly two and one half millennia, from the first diamond discoveries in 800 B.C. to the diamond finds in Brazil in 1844, the Indian subcontinent was the world’s only source of diamonds. Thus began a remarkable history in diamonds and gemstones. Indian mines have produced some of the world’s most famous diamonds, including the Koh-i-Nur, which was the object of tribal battles from 1304 through 1850, at which time the East India Company presented it to Queen Victoria (it later adorned the crown worn by Queens Alexandria, Mary, and Elizabeth), and the Hope Diamond, which was purchased by King Louis XIV, stolen in the French Revolution, and eventually repurchased by Harry Winston who later donated it to the Smithsonian.

Despite this illustrious history, however, Indian diamond merchants did not have a major impact on the global market until the mid-1970s. Only then did Indian diamond merchants translate their diamond expertise into major cutting operations that, one decade later, developed into lucrative global trading networks. Bharat Shah, founder and chairman of India’s largest private empire, boasted “We went to the bottom end of the market, buying and cutting diamonds which the Jews had rejected” and set up large cutting operations specializing in small stones.\footnote{Gita Piramal BUSINESS MAHARAJAS (Penguin Books, 1996).} Now, Mumbai is home to an active bourse, and thousands of cutting factories populate nearby Gujarat province. Over
700,000 Indians work as diamond cutters\textsuperscript{113} polishing nine out of every ten stones sold in the global market.\textsuperscript{114}

Like their Jewish counterparts, Indian diamond merchants rely on both family and community connections to support their trading networks.\textsuperscript{115} Family connections are evident in each Indian company, regardless of its location. Basant Johari, Chairman of the Indian Diamond and Colorstones Association (a New York trade group), reported, “My father was in the diamond and gemstone business, and his father was too, as was his father and his father before him…. The business goes back in my family generation after generation for centuries. All of today’s merchants have the same family story.”\textsuperscript{116} In addition to having vertical roots, current family networks reach horizontally by positioning relatives in all the important diamond centers. Gita Piramal, an Indian business historian, describes one such network:

Buying roughs in London, an Indian sends them to his brother in Bombay who after polishing them, forwards them to another brother in Antwerp, who in turn instructs cousins in New York and Hong Kong to sell them to jewelry manufacturers.\textsuperscript{117}

The diamond connections also rest on community and tribal foundations, as a small ethnic minority has dominated India’s diamond industry. For centuries, the Jains of Palanpur, a religious minority (Jainism, an offshoot of Buddhism, accounts for 0.5% of all Indians) from a parched, dusty village in northern Gujarat, have served as India’s diamantaires. Like the ultra-Orthodox, the Palanpuris are a very tightly knit community and have developed active community associations in the diamond centers where they reside.\textsuperscript{118} Palanpuris entered the trade as diamond cutters, and before India’s diamond boom, Palanpuri cutters owned and operated their own small units while cutters in Israel

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\item Nicky Oppenheimer, supra note 55.
\item Manjeet Kripalani “Polishing India’s Diamond Business” BUSINESS WEEK September 11, 2000, pg. 126, E8. Note that this statistic reflects the number of stones cut, not the market share value they represent (which is substantially less than 90%). Also, this figure further overstates the role of India’s cutting since some stones are polished several times.
\item For a discussion of the role of ethnic and family ties in Indian diamond networks in central Africa, see Floyd Dotson & Lillian O. Dotson THE INDIAN MINORITY OF ZAMBIA, RHODESIA, AND MALAWI (Yale University Press, 1968).
\item Interview with the author, February 2002.
\item Gita Piramal “Sparkle on Indian Diamond Market Dims” FINANCIAL TIMES June 19, 1990, pg. 8. One diamond merchant lamented to Paramal, “This business demands personal attention and trust. Only your family can give both. I have remained a small diamond exporter because I do not have a brother whom I can send to live in Antwerp.” ibid.
\item Piramal, supra note 112; Piramal, supra note 117;
\end{enumerate}
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and Antwerp dominated the cutting market.\textsuperscript{119} Then entrepreneurial Palanpuris harnessed their community’s cutting expertise and turned the master craftsmen in their home villages to guide their growing cutting operations. While many of today’s cutting operations are large factories that utilize non-trust mechanisms to monitor non-Palanpuri employees, they are predominantly owned by Palanpuris and rely on Palanpuri cutting expertise. Over 95\% of the 2,400 members of India’s Gem and Jewelry Export Promotion Council and the leaders of all seven of the nation’s largest companies, which control 25\% of the country’s diamond exports, are Palanpuri Jain.

Interestingly, another ethnic sect is active in the diamond industry. Angadias, which in Gujarati means “one who carries valuables” or “trustworthy person,” serve the important role of transporting diamonds from the Mumbai to Gujarat for cutting. Angadias are recruited only from the Patel community in Gujarat’s Mehsana district and have traveled the Mumbai-Gujarat route for more than 125 years, beginning with camel caravans and now traveling third-class on express trains. A typical troupe of 30 Angadias – plainly dressed, unarmed, and carrying unmarked canvas sacks – will transport $4 million in diamonds each day while earning salaries of less than $50 a month. Like the ultra-Orthodox, the Angadias are secretive and insular, with one noting, “Angadias like me will bring only persons that we know into the business because our personal honor and career is at stake.”\textsuperscript{120}

The central role of community connections in India’s diamond industry is consistent with the model developed for the ultra-Orthodox merchants. The industry’s middlemen and cutters pose the same end-game problem presented by New York’s diamond brokers, and the community connection that enforced contracts in New York have a counterpart in the Indian hinterland. That does not suggest, however, that either Patel Angadias or the Palanpuri diamond cutters use the same enforcement mechanisms found in New York’s ultra-Orthodox communities. Speculation suggests that those communities distribute an excludable community club good in a way that the ultra-

\textsuperscript{119} Compare this to the similar role of the ultra-Orthodox Jewish merchants, who also enjoy particular dominance in the value-added services. The model developed in Section IV does not necessarily suggest that community connections govern value-added services and family connections govern trading and dealing, but this seems to be the global pattern.
Orthodox dole out community religious goods, but how those communities police behavior and appropriately punish uncooperative individuals deserves its own investigation.

More generally, the structure of the Indian diamond networks provides particularly strong evidence for the Section IV hypotheses that articulate how Jewish diamond merchants enforce their informal contracts. Both Indian and Jewish merchants have achieved prominence but through independent historical paths. The similarities of the two ethnic-based diamond networks illustrate that each group has developed near-identical responses to the difficulties of transacting diamonds. Family and community institutions are efficient responses to the hazards implicit in diamond contracts.

**Hong Kong/China**

East Asians are relative newcomers to the world of diamonds. First, only recently did East Asian societies become sufficiently affluent to serve as significant consumers of luxury goods such as diamonds. Now, merchants from all of the world’s diamond centers come to East Asian markets, particularly to Hong Kong’s bourse, to sell their finished goods (as one traveling salesman emphasized, “People think we come to Asia to buy diamonds. No no. We come here to sell diamonds.”). Many Indian and Jewish family businesses have relatives living in Hong Kong, selling the stones their relatives send from Antwerp, Israel, and elsewhere.

East Asia also has recently assumed a second role as a cutting center. Many Israeli and Indian companies have set up operations in Thailand, China, and other nearby countries, taking advantage of low labor costs and trying to recreate the success of Indian cutting factories. Rough diamonds are brought to Hong Kong, sold to a local concern, and then brought to a cutting factory in Mainland China. Like much other commerce in China and Southeast Asia, the East Asian companies that deal in diamonds and organize cutting enterprises are family-based networks. Complicated joint ventures between non-Chinese investors and Chinese businessmen provide for the introduction of Indian

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120 Kriplani, supra note 114; Sanjoy Hazarika “India’s Flourishing Couriers” NEW YORK TIMES September 23, 1985, Section D, pg. 10; Jonathan Karp “Call Them the Icemen: India’s Angadis Tote Diamonds in the Rough” WALL STREET JOURNAL March 9, 1999, pg. A1.

121 Interview with the author, October 1996.
and Israeli cutting technology to these factories, but the family networks assume the
difficult tasks of transporting the diamonds to the factories in China and supervising the
workers.

The central role of family businesses in Hong Kong’s diamond trade, though
consistent with the pattern in other diamond centers, is not a remarkable feature for
Chinese commerce. One interesting addition that Hong Kong’s trade makes to this
discussion is in its handling of disputes. Like other diamond centers, Hong Kong has a
bourse with an arbitration board, procedures for dispute resolution, and trading rules that
structure exchange. These rules allow merchants from other centers to trade with
Chinese merchants and with each other within a system of exchange that resolves
disputes and enforces reputation mechanisms like those in other bourses. However, according to interviews with longtime diamond merchants in Hong Kong, the bourse’s arbitration system has not been used to resolve disputes between two Chinese businessmen. Evidently, Chinese networks resolve their disputes through different mechanisms. Since the arbitration system is central for the New York trade for spreading information, this also means that the networks employ different mechanisms to spread information about individuals’ actions.

In sum, Hong Kong’s diamond trade provides further support to the centrality of
family businesses in trading diamonds. But the real lesson the city offers is that New
York’s system of private ordering is not the only available mechanism. The Chinese
networks somehow disseminate information and enforce informal contracts without
relying on the bourse’s arbitration system. The overlying structure may be the same, but
the details are strikingly different.

122 See, e.g., Wiedenbaum & Hughes, supra note 108.
123 These rules and arbitration system are also in place so the Hong Kong bourse can conform to the
standards set by the World Federation of Diamond Bourses.
124 Interview with the author, July 2001. A Jewish merchant and an Indian merchant, both having lived as
diamond merchants in Hong Kong for decades, independently made this observation. The author could not
secure an interview with a Chinese merchant.
125 Note that Chinese networks need not rely on reputation mechanisms to support exchange. Other
methods of private ordering – including violence – can adequately police behavior and punish non-
cooperation. Nonetheless, any enforcement mechanism must have access to sufficient and reliable
information about individuals’ actions.
Israel/Palestine

Immigrants from Amsterdam and Antwerp first brought the diamond trade to Palestine in the 1920s and 1930s, but Palestine’s cottage industry did not experience significant growth until after World War II began. Palestine became a refuge for Jewish diamond merchants during the German occupation of the Netherlands and Belgium and quickly became a major diamond center. Palestine’s diamond industry suffered briefly during the years leading up to Israel’s War of Independence in 1948 (which, in part, helped Antwerp regain its prominence after World War II) but again experienced rapid growth in the 1950s and became the world’s largest exporter in the early 1980s.

Israel’s current diamond industry has many of the same features present in the other diamond centers, particularly New York. Diamond companies are family-based companies, and Israel’s diamond bourse, the Israel Diamond Exchange, will now only admit new members who are relatives of current members. Also like New York, many ultra-Orthodox occupy the Diamond Exchange serving as brokers for large diamond merchants, and between 30-40% of all Exchange members are ultra-Orthodox. Family relationships and the ultra-Orthodox community are both important components in operating the industry.

The development of Israel’s diamond cutting industry, however, reveals a slightly different institutional picture than those in other centers. During the industry’s growth in the 1950s and 1960s, there were more opportunities for entry than there were in other cities. This appears to be a small exception to the requirement of a family or community connection. Many of Israel’s early diamond merchants have stories similar to the path that brought Moti Owenstein’s father into the industry. Moti tells his story:

My father was 19 when he came to Israel as a refugee from Europe. When he came, he had no family and no profession, but he came upon a diamond merchant who gave him an entry-level job as a polisher. Slowly he learned the trade, and eventually he acquired an inventory of his own, opened up his own factory, and became a successful dealer.126

The possibility of a New York or Antwerp diamond merchant hiring an unknown individual who is not in his intimate religious circle is nearly unthinkable, and it is very unlikely in modern-day Israel as well. Nonetheless, Israel’s early industry grew on these kinds of stories. Refugees and recent arrivals obtained jobs in small cutting facilities that

126 Interview with the author, February 2002.
employed no more than 10-15 people. After acquiring industry knowledge and skills, they, perhaps with a partner or two, opened their own small operations with 10-15 workers. Accordingly, the industry grew rapidly and incorporated more and more new workers.

Today, such free entry is unavailable at least partly because Israel’s cutting industry has, like Antwerp’s, gone overseas to where labor is less expensive. While Israel still has a large cutting industry, most of Israel’s new activity in diamond cutting involves the export of cutting technology to factories in Southeast Asia and India. Much of this international activity is conducted by family businesses that send relatives to remote sites across the globe. The industry was open to outsiders only during its rapid expansion, and the second generation of diamond merchants, who are less in need of new workers than their forefathers, have not opened the industry to outsiders.

It is tempting to discount the brief period of entry to extenuating circumstances. During the 1950s, Israel’s industry was growing rapidly and was in desperate need for new labor to support a promising industry in an otherwise struggling economy. Also, Israel was home to thousands of World War II refugees who were desperate for work, and several Israeli government agencies were actively searching for new sources of diamonds as a way to buttress the emerging polishing trade. These explanations, however, discount the contracting challenges and the threat of theft.

A better explanation probably lies in a strong, pan-national connection that Israelis shared in the aftermath of the Holocaust, where fervent national ties simulated intimate ethnic relations. Even so, the leap from family and community relationships to broader national connections is a difficult one to make, but perhaps the enforcement mechanisms that govern the ultra-Orthodox have an analog for countrymen in a small and intimate nation. To be sure, the early days of the State of Israel were unique, and the nation’s diamond industry during those years appears to be a narrow exception to the family-community hypothesis.

*Jewish Merchants and Other Trades with Informal Contracts*

The previous discussions in this section illustrate that diamond merchants outside of New York also rely on similar family and community ties to govern diamond
exchange. A further implication of the model described in Section IV is that if Jewish diamond networks indeed were structured to enforce informal contracts, then those same networks should manage commerce in other goods that similarly rely on private ordering for executory contracts. Consequently, one would expect to see Jewish merchants, using the same family and community relationships, transacting in commodities that present difficult contracting hazards for time-inconsistent exchange.

One obvious modern-day example of commodities that rely on extra-legal enforcement is illegal goods. Sales contracts for illegally traded goods are not enforceable by public courts, so any time-inconsistent exchange would rely on private ordering. Consistent with this implication, several Jewish diamond merchants have been associated with such illegal activity. In 1999, Russian authorities apprehended several ultra-Orthodox Jews for illegally smuggling assorted goods from the country, including diamonds and antique Hebrew books. More dramatic, The New York Daily News reported that Israeli drug dealers harnessed Jewish diamond networks to smuggle Ecstasy into New York, where ultra-Orthodox couriers typically transported 30,000 to 45,000 pills and as much as $500,000 in drug proceeds.

History contains more examples of Jewish activity in commerce involving difficult to contract time-inconsistent exchange. Goods, like diamonds, that were small, portable, and valuable commodities all created contracting difficulties before there was reliable enforcement of contract law. Jewish merchants transacted in many of these trades. In the Middle Ages, Jews became prominent in the trade for expensive dye-stuffs, as Jewish merchants based in Egypt and Tunisia managed the distribution of reseda from India and exported saffron and indigo from Tunisia and Egypt to Southern Europe. They remained active in the trade through the reign of the Ottoman Empire. Jewish craftsmen in the Middle Ages also found lucrative careers working in fine metals, as many of 12th century’s goldsmiths in Egypt, Iraq, Persia, Yemen, and Maghreb were Jewish. Jews also were prominent goldsmiths in 15th century Spain and Portugal (where some even transgressed Jewish law to manufacture Christian religious artifacts) and in

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central Europe in the 17\textsuperscript{th} and 18\textsuperscript{th} centuries.\textsuperscript{130} Since the social structure of the Jewish community before the Enlightenment in the eighteenth century was insular, intimate, and fostered interdependency – very similar to today’s ultra-Orthodox community – it is likely that community institutions and norms were critical in governing these trades.

Above all other commercial activity, pre-Enlightenment Jewish businessmen engaged in banking and money lending, a trade that relies on time-inconsistent exchange.\textsuperscript{131} Jewish historian Cecil Roth writes, “The Jew was the classic money-lender of the Middle Ages, and the classic profession of the medieval Jew was money-lending.”\textsuperscript{132} Jewish bankers emerged in Baghdad in the ninth century, engaging in what their Caliphite and Fatimid rulers called \textit{Jahbadhiyya}, a form of banking that rested upon the savings of the whole Jewish merchant class (as opposed to the savings of a few rich individuals, which was a far more common means to accumulate and dispense capital). Europe saw its first Jewish bankers within the administration of the Merovingian Kings in 481. With the rise of the First Crusade in the 11\textsuperscript{th} century and rising repression throughout the 12\textsuperscript{th}-15\textsuperscript{th} centuries, when Jewish merchants were precluded from most crafts and endangered when traveling for commerce, Jews turned chiefly to loan-banking for sustenance.\textsuperscript{133}

\textsuperscript{129} Baron, supra note 3, pp. 162-3.
\textsuperscript{130} ibid, supra note 164-5. Baron, et al., also note, “That this was a widespread Jewish occupation in Muslim countries may be explained by the contempt in which artisans were held by the Arabs.”
\textsuperscript{131} When Jews lent money to non-Jews, they tended to secure their loans through rent charges on fixed property, i.e. they secured the right to receive for a limited time revenues flowing from a building or farm (they generally were not permitted to own property outright, or they feared expropriation). Other securities included a diverse assortment of pledges, including the armor of impoverished knights to the books of university students. These securities translated a loan and repayments into a sort of simultaneous exchange. See Arkin, supra note 13, p. 67.
\textsuperscript{133} A typical story occurred in the southern French town of Perpignan. As the city experienced rapid economic growth in the 13th century, local artisans experienced a shortage of capital and saw a high interest rate. In response, a notable influx of Jews settled in the town, and eventually 80 percent of the sizable Jewish community engaged in money lending to their Christian neighbors. When the local economy slowed, Jewish merchants either turned to less lucrative roles as pawnbrokers or sought opportunity elsewhere. Such economic cycles provided sufficient demand for Jewish capital throughout the Middle Ages, and Jewish activity in European banking circles lasted through the 19th and into the 20th century. R. W. Emery THE JEWS OF PERPIGNAN IN THE THIRTEENTH CENTURY: AN ECONOMIC STUDY BASED ON NOTARIAL RECORDS (Columbia Univ. Press: New York, 1959); see also Roth, ibid, and Arkin, supra note 13, pp. 57-63, 211-225.
Jewish economic history reveals that Jewish merchants excelled in trades that relied on time-inconsistent exchange of valuable and portable goods. The history certainly reveals that oppression from European and Arab rulers steered Jewish merchants into these trades, either because they were excluded from other professions or because they preferred trades that did not require fixed investments vulnerable to state confiscation. Nonetheless, Jewish merchants would not have found success in these professions had they been unable to enforce executory contracts. The sources of success for modern day Jewish diamond traders mirror the sources of success for other Jewish merchants throughout history.

VI. CONCLUSION

Jewish predominance in the diamond industry is explained by the community’s ability to enforce contracts that few others can, and this paper illustrates specifically how such enforcement occurs. Intergenerational family firms enable reputation mechanisms to enforce cooperation among long-term dealers, and intimate community institutions police the behavior of short-term, independent players. The result is a system of reliable contractual enforcement that permits sales on credit and a rejection of public courts. Community institutions are central in explaining both the industry’s infrastructure and the industry’s leaders.

The particularly interesting feature of this system is the economic role of ultra-Orthodox Jews. The ultra-Orthodox provide critical value-added services that add significant efficiency to the system of exchange. They work as skilled diamond cutters whose polishing increases the sale prices of stones, and they play the essential role of middlemen brokers who match certain stones with the buyers who most value them. Their ability to assure compliance of informal contracts makes their valuable participation difficult to replace and provides the Jewish merchants with a competitive advantage over rival merchant groups without such community foundations. This paper makes the empirical contribution of articulating specifically how these community institutions serve important economic functions. Where the literature connecting social structure with economic performance frequently rests on generalities, this paper provides a detailed description of how a community induces cooperation from its members. It also
identifies limitations to public contract enforcement that persist even in developed economies and comparatively well-functioning court systems. When courts fail, community institutions can arise to fill their place.¹³⁴

However, the end of the ultra-Orthodox’s role in the diamond trade may be at hand, as two recent developments may irreversibly change the diamond industry and obviate the contributions the ultra-Orthodox make. The first, mentioned periodically in Section IV, is the utilization of low-cost labor to cut and polish diamonds. Previous to the explosion of Indian cutting factories, diamonds were chiefly polished in Antwerp, New York, and Israel by family businesses and independent cutters. Now, while cutters in those diamond centers still polish most of the largest and most valuable stones, small stones, which comprise a vast majority of cutting activity, are polished in large factories in India and Southeast Asia. Antwerp’s and Israel’s cutters are now a fraction of their former glory – over the last two decades, Antwerp has lost nearly 90% of its cutting jobs and Israel approximately 70%. Indian and Chinese laborers are assuming the positions long-held by the ultra-Orthodox, and technological innovations, mostly in the form of cutting machinery that replaces skilled labor, will accelerate that trend.

A second development is De Beers’ new marketing strategy. In July 2000, De Beers, facing a decline in its market share and a corresponding dilution of its monopoly rents, announced plans to brand its diamonds and market them directly to consumers with a promise that each diamond has identical qualities. A cornerstone of the company’s plan was forming a joint venture in early 2001 with LVMH Moet Hennessy Louis Vuitton, a French luxury goods conglomerate, to market “designer diamonds” that exhibit unusual shapes and designs. In addition, De Beers is requiring its sightholders to devise similar strategic plans to market brand diamonds to high-end consumers.¹³⁵ If these marketing strategies work, then consumers will be able to purchase a diamond like any other commodity and will bypass the entire search process in which brokers match buyers with specific stones. Similar strategies are being pursued by some Internet diamond brokerages. Web sites list an inventory of diamonds with GIA-certified features and a

¹³⁴ For a more formal model predicting when the limitations of public courts will induce merchants to pursue private ordering, see Richman, supra note 2.
¹³⁵ See Weber, supra note 11. Some designer diamonds have already emerged, such as the Escada Diamond with 97 facets (the traditional diamond has only 58) or the patented Leo Diamond with 66 facets.
high-resolution picture, and interested buyers negotiate directly with owners without intervening middlemen. By one statistic, Internet sales comprise 15% of all sales in the US, even as many merchants remain skeptical that a picture and GIA categories can relay sufficient information about a stone.\footnote{Sharon Berger “Diamonds in the Rough” THE JERUSALEM POST April 6, 2001, pg. 4B. Internet sales continue to grow, and Internet and other distribution systems continue to take business away from the traditional channels dominated by family merchants. See Tracie Rozhon, “Competition is Forever,” NY TIMES, Feb.9, 2005.}

The diamond industry is now changing rapidly, and the ultimate success of new cutting ventures and marketing strategies – and with them, the eventual fate of the ultra-Orthodox – may be known soon. The next decade could mark an important turning point in the 1,000 year history of Jews in the diamond trade.
Figure 1: Overview of Diamond Transactions