Rare Coin Grading: A Case of Market-Based Regulation

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This article draws on and expands my earlier empirical study of the rare coin grading industry (Cobin 1997). Major additional contributions are to (1) show the significant and important changes in the market during the last two decades (different firms, improved services, and greater competition); (2) add important and essential information that was missing or unknown due to innovations that have occurred in a now much more mature market; (3) vastly improve the tables with more data and comparative statistics that support the case for market regulation; and (4) provide details of the historical development of the industry. This updated study confirms that the industry provides high-quality, market-based regulation at low cost for the multibillion-dollar rare coin marketplace. Ease of entry has have permitted dozens of firms to compete, forcing the current 13 survivors to improve quality. Prices for the best firms' services remain low even though higher than in 1994 because of quality improvements. As a result, a strong case can be made for replacing government "public interest" regulation with more efficient market-based regulation, which emerges spontaneously to satisfy consumer demand.

Government versus Market Regulation

Many studies have appeared in the last few decades that suggest that government-enforced codes and regulations often fail to improve

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safety and quality. Without a market test, there can be no assurance that the benefits of regulation exceed its costs. Government regulators face different incentives than private ones, which actually impel them to be inclined to overlook infractions. Public choice problems relating to inefficient institutions, rent seeking, regulatory capture, and perverse incentives—as well as the knowledge problem—preclude government regulation from being effective in producing higher levels of safety and quality (Holcombe 1995).

Politicians and bureaucrats who implement public goods programs are always constrained by such public choice impediments. When government fails—that is, provides less net welfare (considering the cost of taxes and public inconvenience) than what can be obtained through market forces—there is no longer any justification to continue its regulatory activities. However, when private interests can be served indirectly through a regulatory apparatus to reduce competition, damage competitors, and force consumers to buy their products, an incentive is created to find some public interest purpose that can provide the needed justification (Cobin 2014: 190–92). If, at the same time, politicians and especially bureaucrats can benefit from such disguised private interest regulation—through larger status-enhancing budgets, greater job security, more power, and indirect perks—they will have an even stronger incentive to regulate (Niskanen 1971, 1994; Simmons 2011). In the last several decades, the economics literature has called into question the notion that bureaucrats will work to serve the public interest. As Nobel laureate James M. Buchanan (1991: 37) stated, "The mythology of the faceless bureaucrat following orders from above, executing but not making policy choices, and motivated only to forward the 'public interest,' was not able to survive the logical onslaught" from public choice theory.

In an attempt to find a remedy for government failure, at least in the arena of regulation and planning, a literature has evolved that promotes the idea of market-based regulation (e.g., Alger and Toman 1990; Blundell and Robinson 2000; Cobin 1997, 2013a, 2013b, 2013c; O'Driscoll and Hoskins 2006; Poole 1982; Benson 1989). This article provides a case study of grading and evaluating in the rare coin industry that tests the hypothesis of this literature: When competition and concern for reputation are present, markets will spontaneously emerge to efficiently regulate the quality of goods and provide consumers with essential information (De Alessi and Staaf 1994, Klein 1997, Komhauser 1983, Shapiro 1983).

Under normal circumstances, there is no reason to believe that market provision will fail. Certain services might be under-supplied if people who do not pay for them can benefit from them. However, the existence of positive externalities does not necessarily preclude market provision. This article builds on the evidence from my study of the rare coin industry and helps determine whether quality assurance is a public good that should be provided by government or merely a private good that can be provided by the market.

Savas (1982) has argued that government is wasteful and substantial privatization is in order. Likewise, Schmidtz (1991) has made the case that private enforcement mechanisms like "the assurance contract" or other voluntary solutions might be used to replace government's role in public goods production, because the free-rider problem cannot justify coercion. In his view, "government is itself an imposer of negative externalities" (Schmidtz 1991: 89). Foldvary (1993) points out that (1) the nonprovision of a public good becomes a public bad, (2) determining the optimal provision of a public good is a highly problematic process, and (3) governments are unlikely to relinquish power voluntarily.

There is theoretical support for the privatization of public services. Government enterprises have higher costs of production (Lindsay 1976); private airlines are more efficient and productive than their public counterparts (Davies 1971); and inefficient state-owned copper mines do far worse than privately owned mines (Villagrán and Vermeo 2013). Surely, the last 50 years is replete with examples of public enterprises that are less efficient than private ones. If decision-makers have neither an ownership interest in their organization nor direct accountability to the owners, then both the organization and decisions will be subject to perverse incentives and distorted resource allocation.

Market failures are cited as the main justification for government intervention. However, the articles in Cowen's (1988) compendium, *The Theory of Market Failure*, strongly suggest that the theory of market failure has theoretical and empirical shortcomings. Externality and free-rider theory is particularly questionable (see e.g., the essays by Brubaker, Buchanan and Dahlman, Demsetz, Goldin, and Tiebout in Cowen 1988). Indeed, many important case studies that provide empirical critiques of market failure theory show that alleged cases of public goods can be provided by markets. These include Coase (1974) and Mixon (1992) on lighthouses, Cheung

(1988) on the interaction between bees and apple blossoms in honey production, Poole (1982, 1988) and Cobin (1997, 2013a, 2013b, 2013c) on fire safety, and High and Ellig (1988) on the provision of education in the United States and Great Britain. Therefore, many of the goods and services often considered to have a public nature may be provided by markets. As de Jasay (1989) notes, it is also possible that the incidence of public goods in modem economies has been exaggerated, leaving room for efficiency improvements by policies that commend market alternatives. He argues that voluntary participation in collective action often is consistent with self-interest.

Holcombe (1995) and Sowell (1996) extend Austrian economic insights by Mises and Hayek about knowledge to show that government provision of collective or public goods will not be efficient. If planners were omniscient, then they might be able to plan effectively. However, they are not omniscient (even as a committee) and are thus wholly incapable of planning either effectively or efficiently—no matter how altruistic they might be. Moreover, it may not simply be assumed that regulations actually accomplish what they are intended to do because of public choice problems, including agencies having a natural inclination to favor the industries they regulate. The problems of inadequate knowledge, perverse incentives, and inefficient institutions must be taken seriously when evaluating public provision of private goods.

The studies already noted have shown that consumers can be protected without government regulation. O'Driscoll and Hoskins (2006) provide additional cases of private regulatory alternatives that work well: free banking (without a central bank or its regulation), currency emission, arbitration and customary law, brand name generation, approval seals like Good Housekeeping, and quality certifiers like Dun & Bradstreet and Underwriters Laboratories. More of such institutions would exist, except that the government crowds them out. As Holcombe (1995: 103–4) writes, "With this illusion of a government umbrella protecting everyone from harm, there is relatively little public demand for private regulation."

It is evident that consumers are not entirely satisfied with governmental information generating services. The existence of institutions like the Underwriters Laboratories, founded in 1894 by insurers to provide risk data, and the Hearst Empire's Good Housekeeping seal of approval, a magazine marketing approach used from 1910 to the present day, are market mechanisms that

augment the standard-setting and regulatory infrastructure. However, the former has a tacit connection with government through its entwinement with the state's regulatory apparatus and by potentially providing assistance for manufacturers that seek government privileges, while the latter is more of a marketing technique than a serious quality-certifying firm—making both of them poor examples of market-based regulation. Alternatively, the sports card (Dobrow 2014) and gemstone (Cobin 1997: 105–6) grading and certification services are good examples of market-based regulation. However, they are not as impressive or mature as the rare coin industry, which provides the best case to date of pure market-based regulation.

Consumers want to know more than just basic characteristics about an expensive product or service. They want to know something about comparative and prevailing quality (and thus value), given the large capital outlay involved. In spite of the fact that much may be gleaned from considering Good Housekeeping and Underwriters Laboratories from the standpoint of certification, neither of them are *grading* firms. In addition, it is not clear that they are suitable examples of certification services that would develop without government regulation of safety or quality. It is possible that, because of its privileged position, Underwriters Laboratories is not being continually honed by the competition that would exist without government regulation of building quality. Moreover, because of the nature of government regulation, it is not clear that they efficiently transmit the lowest cost to consumers. Without rigorous competition, which is also rivalry for reputation, there can be no certainty that standards will be set optimally, that is, without serving private interests of a single firm or industry that is resting on political privilege.

Quality Grading Services in the Rare Coin Industry: A Clear Case of Market Regulation

Because a market framework with wholly market-based institutions is vastly different from a government-regulated one, it is appropriate to consider only the most market-based institutions that have emerged to alleviate imperfect information, in this case those in the rare coin industry. Given the absence of government regulation and the demand for grading and certification services for rare coins, markets have spontaneously generated institutions to meet consumer

needs. The rare coin industry is a lucid example of a market-regulatory institution. It serves a vibrant and large market (Milburn 2013), where a single coin can sell for several million dollars, and has generated many billions of dollars in annual sales (excluding unreported transactions), with trading in hundreds of mintages.

Rare coins have become a strong investment alternative, partly because of their precious metal content ("realness"). According to Allard (1990: 279), returns on rare coin investments exceeded 15 percent annually on average from 1970–90, and rare coin sales skyrocketed to nearly $1 billion annually by the late 1980s. Today sales exceed $10 billion, according to CoinTrackers website. Although rare coin prices do not always rise, they always warrant quality certification because the price differentials between grades are so large. Indeed, at the "proof" level, even a slightly different grade can double a coin's price, or more than double it in the case of the highest grades. The bottom line is that the rare coin market is fluid, dynamic, often pricey, and a single step in grade can make a big difference in price. Quality grading is of paramount importance to both the seller and especially the buyer.

Rare coin grading and certification requires great skill and knowledge, and specialists can expect to earn salaries in excess of $200,000 per year (Cobin 1997: 96). Moreover, just as information leading to building grading and certification services can be viewed as a public good, rare coin grading and authenticating could be considered as providing a public benefit. Potentially, the information might be considered a public good because consumption is nonrival and excluding those who do not pay for the services would be difficult. Rare coin shops face this reality because anyone walking by can see the grade of the coin; online auction services face it as well.

The potential free-rider problem in rare coin grading and certifying arises since someone is receiving an external benefit without paying for it. That is, many shoppers benefit from better information being displayed by graded and certified rare coins, but the only one who actually pays for it is the buyer, not the shoppers.

In fact, markets for private grading and certification (information) services help circumvent the free-rider problem because graded and certified coins command a premium, allowing rare coin dealers to capture the benefits through giving information to *every* potential buyer. Moreover, since each rare coin is unique, it is possible to grade one without grading them all, making the grading and certification of

a particular rare coin an excludable service. Hence, rare coin owners and sellers have an incentive to give away grade and certification information, much like advertising.

The Rare Coin Certification Industry

Governments are not the only institutions that provide certification and grading services. The market has also met demand for such services in many industries, including the rare coin industry. It is clear enough, on account of the existence of private inspectors and certification firms which are employed by lenders, insurance companies, and consumers, that private industry could provide market regulatory alternatives that alleviate negative externalities and improve knowledge (although they are ancillary to the government regulatory process). The ensuing subsections demonstrate that even without having a government grading service in place, the market for rare coins has generated an alternative to government quality certification that alleviates both imperfect information and externality problems. It shows that when consumers demand such services, the market is able to provide them.

Coin Grading Schemes, Certification Firms, and Reputation

The U. S. government has minted coins since 1793, using various metals and sundry denominations (Cook, Cribb, and Carradice 1990). Collecting American coins has evolved from a hobbyist's fascination to a lucrative investment activity. Indeed, rare coins have been one of the top-performing investments in the last several decades, with some Wall Street firms even developing limited partnership interests in rare coin portfolios and a rare coin index to track the market (Allard 1990, Milburn 2013).

Since 1986, the industry has generally accepted a system in which uncirculated coins are graded by one of many independent organizations that assign numerical standards based on appearance. The U.S. system established by the American Numismatic Association, as described in Table 1, is the most widely used.

The rare coin industry provides a lucid example of how the free market handles the demand for grading services. Prior to the 20th century, all coins were simply graded as either "new" or "used" (Ruddy 1995: 5). Today, rare coins are valued according to both their rarity and their grade. "Proof" (PR or PF) refers to the method of

TABLE 1
American Numismatic Association (ANA) Coin Grading Scheme

Coin Condition/Grade	Ordinal Grade	Grades Used in the Market
Poor (P)	P-1	1
About Good (AG)	F-2	2
Very Fair (VF)	AG-3 and AG-3.5	AG, AG3, AG3.5
Good (G)	G-4 to G-7	G or G4 and G6 or G+
Very Good (VG)	VG-8 to VG-11	VG or VG8 and VG10 or VG+
Fine (F)	F-12 to F-19	F or F12 and F15 or F+
Very Fine (VF)	VF-20 to VF-29	VF, VF20 and VF25
Choice Very Fine (CVF)	VF-30 to VF-39	VF+, VF-30, VF35 or CVF
Extremely or Extra Fine (EF)	EF-40 to EF-44	EF40 or EF
Choice Extremely Fine (CEF)	EF-45 to EF-49	EF45 or CEF
About Uncirculated (AU)	AU-50 to AU-54	AU or AU50
Choice About Uncirculated (CAU)	AU-55	AU55 or CAU
Borderline/Brilliant Uncirculated (BU)	AU-56 to AU-59	BU, AU-58 or CAU
Mint State (MS)	MS-60 to MS-64	MS60, MS61, MS62, MS63, MS64
Choice Uncirculated	MS-65	MS65
Gem Uncirculated	MS-66 to MS-69	MS66, MS67, MS68, MS69
Perfect Uncirculated	MS-70	MS70

Sources: Ruddy (1972), Yeoman (1994).

manufacture and the condition is usually perfect uncirculated. Uncirculated levels above "borderline or brilliant uncirculated" (BU) are also referred to as "mint states" (MS). A corresponding numerical ranking system now predominates, with the lower grades of coins being assigned numbers from 1 to 49, and "about uncirculated" (AU), BU, and MS grades of coins receiving numbers from 50 to 70 (Yeoman 1994: 5).[1] The technique for grading coins was standardized by the end of the 20th century (Halperin 1990), which has provided a means for markets to identify the rarest and most valuable coins. According to the Professional Coin Grading Services (PCGS) website, there are 15 very rare, graded U.S. coins worth between $4.5 million and $15 million each.

Grades of 60 to 70 are reserved for a "perfectly preserved coin" (Allard 1990: 279). In general, other than perhaps a handful of exceptionally rare coins, only coins with grades of BU or MS-60 to MS-67 are actively traded as investments. Sometimes a + symbol will be added to the grade to indicate that it is close to another level. Higher grades from MS-68 to MS-70 are extremely rare or do not exist for most collectible, nonbullion coins.

Coins with AU grades are often purchased as substitutes for gold or silver, not having a significant premium over the value of their metal content. Nonetheless, they do have some collectable value and provide insurance against confiscation by government because they are a coin rather than just hunks of gold or silver (holding gold was declared illegal by President Franklin D. Roosevelt in 1933 for all but jewelers, dentists, collectors, and miners).

A coin's grade is affected by authenticity, luster, strike, color, toning, friction, coin or die flaws, and obverse/reverse grade consolidation (Martin 2008). Rare coins are slabbed—that is, encapsulated by grading firms into acrylic holders to protect the coins—and their grade is certified in the encasement. Typically, the encasement also indicates the name of the grading firm and the type of coin encapsulated. The grade is invalidated if the encasement is tampered with. Daily market quotations are available for slabbed coins. Thus, dealers of rare coins are enabled to trade more productively with the increased knowledge, as well as reliability and verifiability, generated by this market process (Allard 1990: 279).

[1]There is also the Sheldon numerical system of grading, from which poor, very fair, BU and Gem classes are derived (Ruddy 1995: 112).

Dealers and consumers benefit from the existence of numerous newsletters, reports, catalogs, and pricing guides, which provide contributive analyses and recommendations (Allard 1990: 284–85). These publications include the *Coin Street Journal*, *Coinage*, *COINfidential Report*, *Coins*, *ANS Newsletter*, *The Numismatist*, *Numismatic News*, *Coin World*, *COINage* Magazine, and *World Coin News*. Services provided by rare coin grading and certification firms include grading, authentication, photo certification, encapsulation, and low-cost, comprehensive insurance (Cook, Cribb, and Carradice 1990: 7). Table 2 gives the names and locations of the major firms in North America, Europe, and Asia that provide some or all of these considerable and specialized services. The percentage columns in Table 3 reflect the average percentage of "sheet price" paid for a coin by dealers when the coin purchased is unseen—that is, when it is ordered by telephone or the Internet. The percentage measures the relative confidence that dealers have in the slabbing firm's ability to grade a coin correctly; it is an excellent proxy for reputation. A higher percentage translates into a better reputation relative to market competitors. Thus, the typical buyer can easily assess the value of the information produced by a particular firm. A higher percentage suggests that a firm is reliable and, subsequently, translates into greater market share.

Benefits of Low-Cost, Competitive, Innovative Grading Services and Products

Inexperienced buyers can now purchase coins that have been graded and authenticated by third-party services to assure the quality of each item, and there is more written information available for beginners than ever before. The pricing of rare coins is also very competitive in today's open market where profit margins are often lower than in the past. In addition to the benefits, the industry has done a credible job of upgrading the quality of services provided by coin dealers through organizations and associations that promote strong professional conduct and ethics (Yeoman 1994: 6). The industry is large and competition is fierce in North America, Europe, and Asia. While the preeminent firms' market positions have changed little in the last 19 years, most firms have lost some prestige, indicating the value the market places on coin grading service quality.

TABLE 2
Coin-Grading Firms by Country, Ranked According to Prestige

Prestige Level	Name of Firm	Acronym Trade Name
United States		
Tier 1 (Best)	Professional Coin Grading Services (1986)	PCGS
	Numismatic Guaranty Corporation (1987)	NGC
Tier 2	Independent Coin Graders (1998)	ICG
	American Numismatic Association Coin Services (1972)	ANACS
Tier 3	Photo Certified Institute (1986, acquired by Dominion Grading Services in 2008)	PCI/DGS
	Sovereign Entities Grading Service (1998)	SEGS
Tier 4 (Worst)	Numismatic Certification Institute—Heritage Coins (1984)	NCI
	INS Authentication Bureau Coin Grading (1970s, out of business)	INS
Residual Firms, Specialty Firms, Newcomer Firms, Minor Players[a]	ASA-Accugrade (1984, out of business, capsule patent acquired by PCGS)	ACG
	American Coin Grading Service (2002, out of business)	ACGS
	Global Certified Service (2001, out of business)	GCS
	Numismatic Conservation Service (2001)	NCS
	American Coin Club Grading Service (1987)	ACCGS
	Star Grading Service (2003)	SGS
	NumisTrust Corporation (2013, restarted)	NTC
Canada	International Coin Certification Service (1986)	ICCS
	Canadian Coin Certification Service (2006)	CCCS

continued

TABLE 2 (*cont.*)
Coin-Grading Firms by Country, Ranked According to Prestige

Prestige Level	Name of Firm	Acronym Trade Name
United Kingdom	Coin Grading Service Ltd. (2005)	CGS
Germany[b]	Numismatic Guaranty Corporation (1987)	NGC
	Numismatic Conservation Service (2001)	NCS
France	Pacific Coin Grading Services (1986)	PCGS
Switzerland	Numismatic Guaranty Corporation (1987)	NGC
	Numismatic Conservation Service (2001)	NCS
Hong Kong	Pacific Coin Grading Services (1986)	PCGS

[a]There were at least 25 other minor grading companies that went into business and then failed, leaving their slabs behind in the marketplace.

[b]For German coins, another important grader is Ron Guth (affiliated with PCGS) in San Diego, since 1988.

Sources: "Red Book" (*A Guidebook of United States Coins*), www.allcertifiedcoins.com/coins_slabcompanies.html, company websites, and Cobin (1997: 101–2).

TABLE 3
Top U.S. Coin Grading Firms' Reputation Ratings

Firm	Greysheet Rating[a]		
	November 12, 1994	November 29, 2013	Percentage Change
PCGS	98	83.1	−15.2
NGC	89	82.9	−6.9
ICG	n/a	65.7	
ANACS	74	65.2	−11.9
PCI/DGS	84	52.1	−38.0
SEGS	n/a	47.6	
NCI	42	42.5	+1.2
INS	43	34.0	−20.9

[a]Average percentage of "sheet price" paid for an unseen coin, with a range of ±15 percent for the four better firms, and as much as ±32 percent for the others. The "greysheet" is jargon for a price list of slabbed and "raw" coins found in the *Coin Dealer Newsletter*. There is also a "bluesheet" for unseen slabbed coins only, without return privilege.
Source: *Coin Dealer Newsletter*.

Of course, the greysheet percentages vary widely, and that dynamism gives consumers prices and up-to-the-minute information on how informed decisionmakers view the grading services. The percentages might also reflect concern in the market over the unchecked existence of counterfeit slabs, against which firms have had to raise technological capability that preclude falsification. Newcomer NTC claims that it has been creating a niche market by offering a counterfeit-proof service, but the firm provided me with no special evidence to support the claim. Nonetheless, the issue is one of increasing relevance to collectors.

Furthermore, the fact that there are eight American competitors, three or four of which are doing well, suggests that there are no substantial barriers to entry and thus little evidence of monopolization from the pre-1990s firms: ANACS, PCGS, and NGC. PCGS has graded over 27 million coins since its inception in 1986, with a market value of nearly $30 billion. NGC has graded over

28 million coins since 1987. Together, PCGS and NGC still have more than one-half of the overall market share (Vousvounis 2013), but all the new competitors with lower prices have eroded the massive market share disparities of the 1990s. In 1994, firms estimated industry market share as follows: PCGS had about 60 percent, NGC had 35 percent, and all the other firms had 5 percent (Cobin 1997: 104). Now the market has many more participants, and NGC, ICG, and ANACS have all improved their greysheet positions, with newcomers like SGS and NTC making significant inroads.

The rare coin industry is a vibrant example of fervent competition and resulting industrial organization. The following are illustrative and suggest that high fixed costs, lack of scale economies and of established reputation do not prevent firms from entering the market: PCI's entry in 1994, its subsequent merger with Hallmark in 1991, changes of ownership in 2001, 2002, 2006, 2007, and the DGS takeover of PCI in 2008; SEGS and ICG's entry in 1998; NCS's entry in 2001; ACGS's entry in 2002; CGS's entry in 2005; and NTC's re-entry in 2013. Moreover, the more than two dozen failed entries indicate that the market is quite mature and that newcomers must overcome significant reputation disadvantages in order to break into the rare coin grading market and survive; trust and reliability are paramount (Vousvounis 2013).[2]

There are also do-it-yourself or pre-made slabs in circulation, which are really just "shells" that look like the acrylic slabs used by professional firms. These shells are commonly seen in the market and carry names like Coin World, American Coin Club Grading Service, Certified Coin Grading Service, International Numismatic

[2]These failed grading firms include: National Numismatic Certification, TruGrade Service, American Grading Service, American Numismatic Institute, Capitol Coin Grading Service, Digital Coin Grading Service, Fiducial Select Capitol, Hallmark (1987), Independent Grading Service, Millennium Coin Certification Services, North American Numismatic Certification, New Standard Coin Grading Service, NuGrade Service, Numismatic Grading Service, NUMISPRO, Premier Certified Coins, Premier Coin Grading and Authentication, Professional Numismatic Grading Service, Professional Grading Service, Silver Dollar Grading Service, Twenty-first Century Grading Service, Universal Grading Service, and United Numismatic Company. These companies, by and large, were formed from 2000 to 2006.

Bureau, Original Coin Certifiers, and Liberty Coin Grading Service.[3]

Numerous attempts have been made to enter the certification wing of this multibillion-dollar industry, obviously, because the high volume of coins to be graded makes for a lucrative business and consumer demand for services is brisk. Nevertheless, there have been only minor allegations of antitrust violations and collusion in the industry.[4] Private lawsuits are another story. Given the high value of many coins, there have been a number of significant lawsuits regarding rare coins, and there are now law firms with practices that specialize in rare coin cases, especially slab counterfeiting or fraud. Thus, coin-grading firms are keen to stay on top of potential problems (Loftus 2012).

Rates and services vary considerably between firms. Table 4 and Table 5 list prices of the main grading services at the end of 2013. Table 6 provides special slab features offered by some U.S. firms.[5]

Additionally, most firms offer rush services, substantially increasing the grading cost per coin, which may demonstrate how firms serve consumers that "search for firms with acceptable waits" (De Vany and Saving 1983: 996). At the end of 2013, there were eight main competitors in the rare coin certification industry in the United States and perhaps six elsewhere (including multinationals like PCGS, NGC, and NCS).

[3]Others include United States Grading Service, Certified Rare Coins, Certified Service, Investment Grade Coins, Colonial Coin Graders, Coin Fixation, First Strike Grading, Global Coins Grading Service, Heritage Coin Grading, International Numismatic Certification Service, MS Society D&E Coins, Numismatic Evaluation Service, National Numismatic Grading Service, Professional Coin Graders, Professional North American Numismatic Service, Pacific Northwest Graded Coin, Quality Coin Grading & Certification Service, Specialty Coin Grading, Expert Grading Company, Elite Numismatic Grading Service, Investment Grading Service, Hallmark Coin Grading Service, Modern Coin Specialists, Northwest Coin Grader, Professional Numismatic Grading Service, and World Coin Grading, Gallery Grading Company.

[4]See, for example, *ASA Accugrade v. American Numismatic Association, et al.*, 370 F.Supp.2d 213 (2005), U.S. District Court, District of Columbia (www.swcgs.com/ASA_v_ANA.html).

[5]Company websites on December 6, 2013, were: PCGS (www.pcgs.com), NGC (www.ngccoin.com), ICG (www.icgcoin.com), ANACS (www.anacs.com), PCI (www.pcicoins.com), ACCGS (www.accgs.org), SEGS (segscoins.com), SGS (www.stargrading.org), NCS (www.ncscoin.com), NTC (www.ntccoin.com), CGS (www.coingradingservices.co.uk), and CCCS (www.canadianccoincertification.com). Note that ICCS did not have a website when this research was being conducted.

TABLE 4
U.S. Rare Coin Grading Service Pricing

	Pricing (U.S. Dollars)						
	Standard (One Pre-1965 Gold Coin) 12–15 Business Day Normal Turnaround Time						
Firm/Criteria	Value Under $3,000	%Δ Since 1994[a]	$20,000 Max. Value 4–5 Days	%Δ Since 1994[b]	Nongold Coins or Other Economy Price	$100,000 Max. Value with 2–3-day Rush	Rarities w/o Value Limit (% Value Charged) and/or One-day Service
PCGS	45	+200%	65	+333%	25	125	250 (+1%)
NGC	30	+100%	60	+300%	17	125	600
ICG[c]	19	n/a	25	n/a	12	50	90
ANACS[d]	19	+58%	29	+142%	15	49	100
PCI[e]	n/a	n/a	10	+33%	10	16	35
SEGS[f]	15		15		15	15	15
ACCGS[g]	9		19		9	24	29
NCS[h]	30	n/a	60	n/a	17	100	50 (+3%–5%)
SGS[i]	10		10		10	10	10
NTC[j]	15		16		12	30	50

[a]Value limit was $2,000 in 1994; prices based on data in Cobin (1997: Table 9). One-day rush service cost $140 in 1994 for PCGS.
[b]Value limit was $5,000 in 1994; prices based on data in Cobin (1997: Table 9). One-day rush service cost $125 in 1994 for NGC.
[c]For ICG, foreign (non-U.S.) coins cost $19. One-day service for all coins is $90. The two-day service rate of $50 is only for coins valued under $10,000. The five-day service rate of $25 is only for coins valued under $7,500. The 10-day service rate of $19 is only for coins valued under $5,000. The economy service rate of $12 is only for coins valued under $500. Coins over these

values will be charged the full $90 and have one-day service. On December 6, 2013, the website advertised a special price program: if 10 coins were submitted, the price of each coin in the economy program would be reduced to $10 and to $15 each in the 10-day turnaround program.

[d]For ANACS, foreign (non-U.S.) coins are the same price but have no precise delivery time specified. One-day service for all coins is $100; it was $59 in 1994 (see Cobin 1997: Table 9). The two-day service rate of $49 is only for coins valued under $10,000. The five-day service rate of $29 is only for coins valued under $5,000. The 15-day service rate of $19 is only for coins valued under $2,000. The economy service rate of $15 ($19 foreign) is only for coins valued under $500, has a five-coin minimum, and cannot be gold coins (except foreign). Coins over these values will be charged the full $100 and have one-day service. Modern coins (post-1950) have a five-coin minimum and cost $10 ($12 foreign, maximum value of $500).

[e]For PCI, add $15 to the stated price for foreign (non-U.S.) coins. The $35 price has nothing to do with rarity in this case but rather one-day service. Coins valued from $1,000 to $5,000 pay an additional $15, and coins worth more than $5,000 pay $20 additional. On December 6, 2013, the website advertised a special price program: "Under New Management. 10 Coins! 5 Days. 7 Bucks ea.!"

[f]For SEGS, the single price applies to any coin regardless of value, date, rarity, etc. SEGS charges $5 to pre-screen and grade the coin. If encapsulation is desired later, an additional fee of $8 is required. There is no explanation as to why the $13 total cost for this method is less than ordering the entire program for $15.

[g]ACCGS only designates price tiers based on speed of service; no consideration is made for a coin's value or rarity. "Dated appraisal" included in the slab costs an additional $2, as does "estimated surviving census" information. "Photo certificates" cost $10.

[h]NCS is a coin conservation service related to NGC. Service prices for slabbing are the same as NGC's. The "evaluation" service costs 1 percent of the coin's value ($10 minimum). The "conservation" stage costs "4 percent of declared value up to $150,000 per coin, 2 percent of declared value over $150,000 per coin, $15 minimum fee," according to the company website. There is a $100 "walkthrough" fee and a $50 "expedite" fee.

[i]The SGS website says that firm only slabs coins with a grade of 60 to 70. Others are certified and/or returned: 10 percent for 10–99 coins; 15 percent for 100+. The single price applies to any coin regardless of value, date, and rarity. The company claims that it grades 7 percent of all coins listed on eBay online auctions.

[j]NTC (NumisTrust Corporation) offers a 7-day service (instead of 4–5 days) with a three-coin minimum. They offer a 20-day service for $10 per coin ($16 for gold coins. Modern coins since 1955 are only $6 each, although another line on the website states $5 each, and the "non-gold economy" rate is $8 per coin (24–30 day service). Coins prior to 1955 cost $7 to grade. The $50 figure in the rarities column has nothing to do with rarity value but rather with one-day service.

SOURCES: Company websites viewed on December 6–7, 2013; Cobin (1997: 101–5).

TABLE 5
Canadian and British Rare Coin Grading Service Pricing

	Standard Service Turnaround Time Varies					Other/Special	
Firm/Criteria	Value Range 1	Value Range 2	Value Range 3	Value Range 4	Value Range 5	Nongold Coins or Other Economy Price	Rarities w/o Value Limit (% Value Charged) Fast Service
CCCS[a]	CDN 20	CDN 20	CDN 20	CDN 20	CDN 20	n/a	n/a
CGS[b]	GBP 14	GBP 24	GBP 39	GBP 65	GBP 95	GBP 14	1/2% of value

[a]One Canadian Dollar was worth 0.94 U.S. Dollars on December 7, 2013.

[b]One British Pound was worth 1.64 U.S. Dollars on December 7, 2013. Some prices in the table are rounded. Coin Grading Services of Kent, UK, appears to be affiliated with the TaxFreeGold store. "Standard service" (£13.75) takes 30 to 90 days and the coin values must be under £200. "Normal service" (£23.75) takes 30 to 90 days and the coin values must be under £2,000. "Deluxe service" (£39) takes 15 days and the coin values must be under £5,000. "Premier service" (£65) takes 10 days and the coin values must be under £10,000. "Star service" (£95) takes 5 days and the coin values must be under £20,000.

Source: Company websites.

TABLE 6
Rare Coin Grading Service Slab Special Features

Firm/ Criteria	Slab Special Features			
	Holder Has Top Edge Viewing Label	Oversized Holder Option for Added Fee	Chemically Inert Flexible Plastic Case	Coin Edge (Inside Slab) Is Viewable
PCGS	No	Yes	No	No
NGC	No	Yes	No	Yes
ICG	No	No	No	No
ANACS	No	No	No	No
PCI	No	No	No	No
SEGS[a]	Yes	No	Yes	No
ACCGS	No	No	No	No
NCS	No	Yes	No	Yes
SGS	No	No	No	No
NTC	No	No	No	No
CCCS	No	No	No	No
CGS	No	No	No	No

[a]This firm also provides a "sovereign series" service for $35 in which the signature of a grading expert is encapsulated with the coin.
Source: Company websites.

The consumer price index stood at 149.7 in November 1994, rising to 233.6 in October 2013 (an increase of 56.1 percent). The percentage change in prices in Table 4 is based on nominal prices, but the changes in real terms are still significant, evidently reflecting returns to reputation and higher quality. Fierce price competition forces even the best firms to keep their fees low. The rare coin industry is a remarkable testimony to just how well competition reduces consumer prices for important services. The volume is also high enough that many firms can enter the market (charging a lower price) and still make money, sometimes with slight product differentiation. One can see exactly how much reputation is worth in the price differentials between PCGS or NGC and everyone else (Wolinsky 1983).

Table 7 indicates that truly rare coins make up a relatively small portion of all graded coins, especially coins minted outside of the United States. NGC subsidizes its core rare coin business by mainly slabbing bullion and other nonrare (but still collectible) coins, which

TABLE 7
Summary of Selected Coins and Tokens Graded by NGC (December 22, 2013)

Coin Type / Number Graded	MS (+ sm. % < 60)	Proof	Total	Percentage of all Coins Graded
U.S. Silver Dollars (5 types), 1840–1978	3,509,817	41,356	3,551,173	12.64%
All U.S. Gold Coins (nonbullion coins), 1795–1933	2,682,408	9,597	2,692,005	9.58%
U.S. So-called Dollars (mainly tokens, variety of metals), 1826–1956	18,966	312	19,278	0.07%
Total U.S. Nongold Common Coins: Pennies (1859-), Nickels (1866-), Dimes (1837-), Quarters (1838-), Half Dollars (1839-)	1,814,858	2,215,257	4,030,115	14.34%
Italian Coins (post-1861 unification)	5,211		5,211	0.02%
French Coins (post-1870)	10,928		10,928	0.04%
Russian Imperial Coins (1801–1918)	70,824		70,824	0.25%
English Imperial Coins (1600–1707)	3,319		3,319	0.012%
Mexican Colonial Coins (1601–1823)[a]	6,526		6,526	0.023%
New Zealand Coins/Bullion Coins (post-1856)	3,352		3,352	0.012%
Chilean Coins, Mainly Gold and Some Silver				
Colonial Era	999		999	0.004%
Republic (1817-)	2,292		2,292	0.008%
Total	3,291		3,291	0.012%
U.S. Bullion Coins				
Silver (1 ounce)	5,768,889	977,728	6,746,617	24.01%
Silver (5 ounce)	62,215	23,776	85,991	0.31%

Gold	1,050,628	372,352	1,422,980	5.06%
Platinum	141,579	62,487	204,066	0.73%
Total	7,023,311	1,436,343	8,459,654	30.11%
Chinese Panda Coins				
All Bullion	353,587		353,587	1.26%
Hong Kong $1,000				
Gold Bullion	871		871	0.003%
Canadian Maple Leaf, 1979- (all sizes)				
Gold and Silver Bullion	14,204		14,204	0.051%
Canadian Maple Leaf (18.7%), other 1 oz., 1973-				
Silver Bullion	22,028		22,028	0.078%
South African Kruggerand				
Gold Bullion	5,273		5,273	0.02%
Australian $200 Koala				
Gold Bullion	1,049		1,049	0.004%
U.S. Medals and American Arts Medals	8,324		8,324	0.03%
All Other Coins, Tokens, and Medals				31.5%
Total				100.0%

[a] Many Mexican coins in this category are graded less than MS-60.

SOURCE: NGC coin census (www.ngccoin.com/poplookup/us-coin-census.aspx).

TABLE 8
Coin Grading Service Markets for NTC
(Percentage of Coins Graded by Category)

Rare Coins	Collectible Coins MS-60+	"Bullion" or Proof Coins	Other Coins	Medals & Tokens
5%	70%	5%	10%	10%

Source: emails received from Joe LaBarbera with NumisTrust Coin Grading Service on December 24 and 26, 2013, including data from operations since the firm restarted on May 1, 2013. He adds: "The New NTC is dedicated to providing consistent coin grading according to the current market standards with excellent turnaround time, at fair pricing levels with outstanding customers service. Dealers and collectors will be able to distinguish the 'New NTC holder' because of the new hologram that is exhibited on the backside of our holder. NTC has also added secret security features to the holder to provide additional security and anti-counterfeiting. Our concern is that counterfeit slabs will undoubtedly plague the certified coin business in the future. NTC has taken steps now to prevent this."

are by definition much more abundant. My email conversations with some other firms and information posted on the Internet suggest that the industry has changed over the years. There is far more diversity in coin grading now than ever before, which is confirmed by the data from NTC in Table 8; NTC mainly deals with collectible coins but also has a significant business in grading medals and tokens.

It seems plausible that very valuable coins only go to the best firms for grading since an incorrect grade would be so costly. In addition, the higher grading cost of the top firms is often miniscule relative to the price of the coin, making the use of lower-quality firms less sensible, other things being equal. About 70 percent of the coins graded by NTC contain silver, gold, or platinum, rather than copper or a base metal (Table 8). This fact likely reflects the new firm's comparative advantage in grading rare or collectible coins with strong slab anti-counterfeiting measures.

Innovative Services Offered by Coin Grading Firms to Meet Changing Demand

Coin grading firms also offer special services. For example, some provide medallion, medal, and token grading; imaging services;

ancient coin authentication; shipwreck certification; conservation (residue removal and surface protection) services; slabbing into oversize holders; and metallurgic analysis. Newcomer SEGS is challenging the market share of PCGS and NGC by offering its upgraded slab for a lower price and quicker turnaround time, although the recent Professional Numismatists Guild industry survey indicates that dealers consider SEGS standards to be poor. Hence, SEGS will not be catching up to the bigger players anytime soon. Apparently, people are willing to pay more for widespread acceptance (higher reputation) and perhaps the security associated with the longevity of leading firms. Market-based regulation of quality seems to work well.

Another interesting fact about the grading industry has to do with the apparent consumer ignorance regarding the quality of different grading services. Although many consumers are well apprised of coin grading services, others may not be so careful in their selection still. Accordingly, any encapsulation and grading may well be better than none at all—especially for lower-valued coins, and in that case, the very-low-cost firms fill an important niche (especially firms like ANACS, ICG, and perhaps NTC, SGS, and SEGS). This consumer demand feature also allows easier entry for newcomers to the industry.

This case study has primarily focused on the grading of *rare* coins, that is, coins with low mintage, few surviving specimens, or a very high grade based on quality (condition). Nonetheless, as noted earlier, companies in the certification industry actually serve other important and profitable markets, too, from which the lion's share of their income is apparently derived. Probably more than one-half of all coins slabbed could not rightly be considered "rare." The grading companies contacted were loath to give out sales information.

However, a few firms did provide data on the kind of coins they grade. As noted in Table 7 and Table 8, changing consumer demand has permitted NGC and NTC to profit by grading modern coins and "bullion coins" (i.e., those having only precious metal value). They also grade collectible coins and some medals that do not necessarily carry significant value over the value of the precious metals they contain—if they contain any precious metal at all. Nowadays, many more modern coins are slabbed and in many cases hardly carry enough value to pay for the slabbing. In effect, the smaller volume of the most specialized and rigorous grading services for rare coins are being subsidized by more mundane, higher-volume ones. Also of interest is the

dominance of U.S. coins. According to tables on the NGC website, about 75 percent of the millions of coins graded by NGC have been U.S. coins. This 75 percent figure is echoed by NTC, too, which focuses far less on bullion coins and far more on medals and tokens than NGC does.

Moreover, coin dealers have subjective preferences that cause them to prefer one service to another on a micro level. For example, they may prefer NGC for "tighter" grading of gold coins and PCGS for "tighter" grading of silver dollars (Cobin 1997: 101–2). Firms specialize in such nuances to meet consumer demand. Those firms that do not adapt may fall into disrepute. Poorer grading reputations generally reflect conflicts of interest perceived by the market. Notably, a grading firm might have an affiliated business as a coin dealer, and this nexus can naturally cause suspicion. Perceptions of inferior grading techniques, such as assigning a different grade to the front and back of a coin, also tends to lower a firm's reputation. Bad firms eventually go out of business; the black sheep provider INS in 1994 (Cobin 1997: 103) could not stay in the market for long once it had attained its bad reputation.

Additionally, coins graded "early" (usually identified by the different shape of the slabs used when coin-grading services were just emerging) are considered to have been graded "tougher" and carry a premium. The market adjusts for this fact. Older graded coins may well be "upgraded" after re-grading (Cobin 1997: 101–2). The price of slabbing services is generally low (an expected result of competition), especially when one considers the cost relative to higher-valued coins. Thus, onlookers can readily see how the industry dynamically assimilates information about firm quality, past products, and consumer or dealer tastes over time.

The market has spontaneously generated a firm that evaluates the output of top graders NGC and PCGS, too. Certified Acceptance Corporation, founded in 1987 by John Albanese (co-founder of PCGS and founder of NGC), affixes a "green tamper-evident holographic sticker" when a coin is correctly graded and a "gold" one if it is undergraded. Coins that "just make the grade" or overgraded coins receive no sticker. Another important market innovation in the coin grading industry is offering "reconsideration" or "crossover" services (Table 9). With this service, a firm promises not to break open the slab of the competing firm unless it can assure the submitter that the grade will be at least as high or higher. The cost of

TABLE 9
Reconsideration (Crossover) Fees Charged by Participating Coin Grading Services

Firm	"Reconsideration" or "Crossover" Fee
PCGS	Basic fee for chosen service + 1% of value if coin upgrades.
NGC	"There is no additional fee for Crossover; only the grading tier charges apply." Only PCGS graded coins can be submitted, except that sister-company NCS coins can be done for $5.
ACCGS	$10
SEGS	$22

Source: Company websites.

upgrading one's grading service need not be expensive (except perhaps for high-valued coins sent to PCGS), and the potential gains from an improved grain are significant. Top firms are thus enabled to damage competitors and put distance between themselves and other firms.

Shipping and Insurance Costs

Shipping costs are reasonable, and depend on speed of delivery, size of order, insurance, and distance to destination. The greater the number of coins submitted, the lower the average shipping cost. Regular service turnaround times range from 10 to 15 days. Additional fees are charged for insurance coverage during shipping.

The United States Post Office will not insure *coins* being shipped but it will accept and insure "numismatics and collectibles" (including coins in that category) with value proven by a third-party service. For example, a numismatic coin worth $200,000 can be shipped insured by registered mail in the United States for $180 and, for coins worth up to $100,000, shipped insured internationally anywhere for $55 ($46 to Canada and $52 to Europe).

The ANACS website lists a price of $79 to ship and insure a coin valued at $100,000 (customers must call for a shipping and insurance quotation on higher-valued coins), and NTC charges $80 for a coin of the same value. Customers with accounts at private courier services like Federal Express and UPS can also obtain reasonably priced

insurance for the coins shipped, around $200 for a coin valued at $75,000.

There is company called ShipAndInsure[6] mentioned on NGC's website, which is affiliated with the North American Collectibles Association, that specializes in facilitating coin shipments using major carriers in the United States and worldwide. Association members are able to get discounts and, importantly, larger limits on the value of coins that can be shipped. Some shippers for certain classes of service will not insure a coin for more than $75,000 or even as little as $10,000. In some cases in the United States, a homeowner's insurance policy might cover all or part of the value of a shipped coin.

Some of the major grading companies also provide insurance, such as ICG, which has base prices as low as $20 per coin, in the United States, to $75 internationally. SGS will insure five coins worth up to $4,999 each for an $18 fee. PCI has an insurance cost table on its website; the insurance cost for a $25,000 coin is $35. The cost of coin insurance has evidently dropped in the last two decades. In 1994, PCI charged a fee of $115 for a $25,000 valued coin (Cobin 1997: 104)—329 percent higher than current pricing—which was (at the time) relatively expensive compared to other firms.

Effective Grading Services Alleviate Market Imperfections

Rare coins are uniquely differentiated goods. Differences and discrepancies between coins are not easily noticed. Typically, greater supply and fungibility in a widely minted coin series means that a coin in that group is less likely to command a high price beyond its commodity value as a metal. Even in low mintage issues, there are considerable differences in coin condition that warrant grading to differentiate them. Until the late 1980s, coin grading was not a standard process. Individual dealers would grade the coins. Those individuals who did not have the same specialized knowledge as the coin dealer were at a disadvantage when buying or selling rare coins.

For example, a dealer could say that a coin offered to him is an MS-65 when in fact it is an MS-66, which commands a higher price. (The visual difference between an MS-65 and an MS-66 is not discernible to most people.) After buying the coin, packaging it and

[6] The company website is https://shipandinsure.com.

offering it for sale as an MS-66 would be facile for the dealer. Because of the fineness of the coin, fungibility, and extensive supply, such quasi-fraud would be virtually undetectable. (The same coin could be seen by its former owner during a future visit and not be detected.) A similar problem arises when the roles are reversed in the transaction. The dynamic rare coin certification industry has evolved to alleviate such inequity.

As we have seen, privately owned and competing grading firms have spontaneously generated in the market, offering sufficient salaries to attract noted industry experts to grade coins exclusively. The resulting grading and slabbing provides market participants with an objective and reliable means of evaluating rare coins. These intermediaries allow buyers and sellers to avoid the costs of irksome assay testing, weighing, and examining for genuineness, rarity, or fineness. Accordingly, transactions (knowledge acquisition) costs associated with information gathering and verification are minimized. Not surprisingly, the cost of grading is also internalized into the price of traded coin (i.e., an encased or slabbed graded coin often sells for a slightly higher price than if it is still "raw"). Markets have ample incentives to provide information and that public benefit is often regarded as a public good. Notably, the influence of free-riding has not precluded the provision of this service.

Therefore, the market can be trusted to produce a reliable high-quality informational public good, and the quality of market provision is automatically enforced since grading and certification services have an incentive to protect their reputations. As demonstrated in Table 3, firms with the best reputation for reliability (i.e., greysheet percentage) also have the highest market share, and command the highest prices for services. Grading and certification services inadvertently mitigate the free-rider problem. Of course, these firms did not evolve with the express purpose of resolving a public goods problem, but rather to provide third-party assurances that are demanded by many private shoppers and investors. Like the self-interest motive of Adam Smith's baker that ended up "feeding" Paris, the economic goals of rare coin graders has inadvertently led to social benefits.

Rare coin grading and certification firms have met consumer demand, and thus created "public good" benefits for everyone who wants them. Yet rare coin owners and sellers are content to continue to purchase these services nonetheless, despite the fact that the information is nonrival in consumption. All who can partake of the good

do so without lessening the amount to other people. Each coin is unique, but if rare coin owners or dealers display them for the purpose of sale then they cannot bar certain patrons. Consequently, information about the coins "publicly" provided by the market might be considered nonexcludable.[7]

Conclusion: A Market Alternative to Government Regulation

The preceding example of grading and certification services in the rare coin industry has considerable ramifications for the grading of real property, military hardware, public transportation highway vehicles and aircraft, air and water quality, farmland and watershed evaluation, food, electrical generation dams and devices, automobiles, pharmaceuticals, educational institutions, and many other goods and services. In North America, South America, and Europe, grading and certifying is often provided by the state or one of its municipal subdivisions, although private inspectors in some cases (e.g., for buildings) are occasionally hired by individuals, insurance companies, and utility companies. Planning boards and their inspectors provide grading services, *despite the fact that the market could provide effective grading services,* as it does in other industries.

The ostensible purpose for government intervention into transactions for both real and personal property is multifarious, but it has been primarily to alleviate imperfect information and to reduce negative externalities. An assumption is made that the government will not garner monopoly profits because it exists for the "public interest" and not to maximize profits. Moreover, the government is often presumed to provide a dispassionate, objective, and reliable evaluation of quality—conjecture that has been called into question by many economists.

Certainly, the cost of these government benefits is considerable; there is no free lunch. In other words, a uniform minimum standard of quality is expensive. But are transactions costs really lowered by government regulation of the quality of goods, or have the costs just

[7] However, other providers of information that might be considered public goods, such as library councils, building owners, and Internet services, can likewise bar "undesirable" persons from consumption. Hence, if informational services are considered public goods, there must ultimately be exceptions to nonexcludability. Consequently, these services can hardly be considered public goods.

been shifted or internalized into the price of the improvements? Contrary to findings that price regulation improves quality (Anderson and Enomoto 1986: 87), other evidence suggests that government regulation minimally impacts (Jordan 1972) or even debases quality, not to mention increasing the associated transactions costs that would have otherwise been avoided (Cobin 1997, Anderson 1994, Lave 1992) and the shortcomings of government-provided informational services (Magat and Viscusi 1992). The present study of grading in the rare coin industry demonstrates, too, that markets have provided high quality without government regulation (High 1991), avoiding the pitfalls of regulation that have worried researchers (Hertog 2010: 46), such as bureaucratic inefficiency, public choice, and knowledge problems.

Important questions need to be answered. Would transactions (knowledge) costs be lower if the market were to provide an alternative, competitive grading system? Are consumers merely being forced to buy a very expensive insurance policy from the government? If the evidence from the rare coin industry provides a clue, then we may conclude that markets would provide more effective and efficient means of generating information when it certifies quality. The government's informational "insurance policy" is demonstrated to be too expensive and does not provide the quality of coverage that would be cheaply provided by the market.

Furthermore, it is not clear that people demand such a uniform degree of certainty when buying goods, services, or real property. Why should everyone be compelled to pay for part of the same public good (i.e., quality information), which is an additional cost of regulation? For instance, it is conceivable that if the cost of such certainty exceeded even a small percentage of the good or property's value, then some consumers would prefer to save the added expense by assuming the associated risks themselves (i.e., self-insuring).

Markets are capable of developing effective and reliable means for grading other goods and property that are analogous to grading services in the rare coin industry. The rare coin industry has spontaneously developed an effective, inexpensive grading system. It was an unintended consequence of human action, which led to greater coordination and increased knowledge. Moreover, those individuals who participate in trading rare or otherwise valuable coins are not disgruntled over the existence of grading firms. Will regulators argue with this success? If so, are they, as Mises (1996: 850) asked, merely

protecting favor brokering and rent seeking, and aiming at the perpetuation of their own supremacy? Surely, it makes no sense to blindly accept the preferences of a majority of unenlightened voters or a handful of ostensibly enlightened bureaucrats.

What would a world certified by private grading firms look like? One could imagine a potential situation where grading firms compete with one another. As long as each grading firm maintains high standards—because of competition—it will be able to receive premium revenues and preserve its reputation relative to other firms and consumer costs will fall. Lower-quality services will be obliged to assuage consumers by charging lower prices, and will likely go out of business if they do not improve the quality of their service over time. In the information market, a reputation for accuracy and reliability is of paramount importance. One foul-up and a firm may be finished.

Furthermore, market-based grading and certification services can be a higher-order "knowledge" good. While the knowledge problem (Hayek 1945, Holcombe 1995, Sowell 1996) can never fully be overcome, its severity may be alleviated by more and better information. Yet obtaining such information is costly. As Alchian (1977: 133) notes, "Those costs of becoming informed about what a good or service or rented good will do, raise transfer costs and also reward longer or greater searching activity by potential buyers or employers." Therefore, information, like most things, is scarce and needs to be economized. In addition to economizing scarce information, grading firms must also adapt to changing conditions. "It is certainly true," wrote Mises (1996: 852), "that the necessity of adjusting oneself again and again to changing conditions is onerous. But change is the essence of life." Markets are flexible and dynamic enough to handle that change.

Accordingly, because consumers are uneasy about their ignorance and want to improve their market information, it follows that firms will spontaneously develop (in the Hayekian sense) and specialize in providing knowledge (e.g., grading or certification services) at the lowest cost. Far from being nugatory market institutions, the existence of such firms indicates the further advancement of economic prosperity.

In the final analysis, reputation enhancement and knowledge production are indispensable elements of the market process. Hence, the key issue concerns whether government bureaucracies or the market is the superior generator of such knowledge. What is clear

from the study of grading services in the rare coin industry is that the market process has successfully made provision for setting standards and regulating quality without any reliance on government. Market-based regulation is not only possible, it is likely, and it emerges without public policy to satisfy consumer demand efficiently.

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