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The Value of Intellectual Property in Government Procurement Auctions: The Case of Military Trucks in the United States After the Cold War

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Abstract

The ownership of the intellectual property (IP) underlying the design of complex weapon systems has been at issue, between governments and their contractors, for over a century. In the United States, federal policy has directed repeated cycles of attention, both positive and negative, on the relative need to acquire these IP rights. Recent (2009) evidence from the US Army's procurement of its Family of Medium Tactical Vehicles (FMTV) indicates that better prices can be obtained when governmental customers exercise these rights in competitively selecting contractors for follow-on deliveries after initial contracts expire. Less clear is whether winners will pursue limit pricing to discourage further competitions and the loss of their quasi-monopolistic franchises. A focused comparison of the FMTV program to that of the Medium Tactical Vehicle Replacement (MTVR) of the Marine Corps suggests that limit pricing is not always the case. Securing advantageous pricing over the long-term through data rights requires a credible threat to move away from sole-source, follow-on awards.

Discussion

The past 10 years have seen a comparative explosion of research on intellectual property (IP), with an increased emphasis in the academic literature on its strategic utility (Martin-de Castro, 2019). A remarkable lacuna in this literature is IP in government procurement, a market worth $500 billion annually in the United States alone, and with its own form of IP. Worldwide, IP comes in four general forms: trademarks, patents, copyrights, and trade secrets. Governance has been somewhat standardized globally, beginning with the 1986 Uruguay Round of the General Agreement on Tariffs and Trade. In the United States, however, federal procurement adds a fifth and sometimes underappreciated form: technical data.

Since 1266 (in England), trademarks have legally protected the use of badges on products, or their outward appearances, as indications of their origin. In the United States, these are registered with the Patent & Trademark Office (USPTO). Trademarks are conferred to protect buyers as much as sellers, so that the quality of the underlying product may be inferred though the producer's reputation, and without inefficiently close examination. Disputes over trademarks are unusual in defense contracting: one of the few related cases was DaimlerChrysler's unsuccessful 2002 suit over the Jeep-like grille design that General Motors adopted for its production of Hummers. The court dismissed the case, as Hummer's heritage was with another extant company, AM General, that had descended from Kaiser Jeep, which was later subsumed by Chrysler (Coyne, 2002). In any case, it is unlikely that a government agency following a lengthy procurement process would be as easily confused as a casual individual buyer.

Since 1421 (in Venice), patents have granted an exclusive legal right to produce a good within a particular jurisdiction. In the United States, these are granted for qualifying inventions by the USPTO, after a determination by a patent examiner that a claim provides something useful, novel, and non-obvious. Since 1710 (in England), copyrights have

provided a preferential right to exploit literary or artistic works. In the United States, these can be registered with the Copyright Office; however, mere assertion is all that is required for a legal claim. The owners of patents and copyrights are presumably granted their legal franchises to provide long-term incentives for technical innovation and creative activity.

Trade secrets are another matter. In the United States, according to the Economic Espionage Act of 1996 (18 U.S.C. 1839), a trade secret is confidential information, for which reasonable protective measures are taken by the owner, and which derives independent economic value from its very secrecy from the public. In contrast to patents and copyrights, these are not registered, as the whole point of the secret is to prevent disclosure. Once disclosed, protection is lost, though damages may be claimed if the disclosure was unlawful.

Technical Data are defined in the Federal Acquisition Regulation (FAR 52.227-14) and the Defense Federal Acquisition Regulations Supplement (DFARS 252.227-7013) as taking two distinct forms: *technical data packages* (generally termed TDPs), "relatively complete packages of design and manufacturing information," and *technical data rights* (abbreviated here as TDRs), which confer legal authorization "to use, duplicate, or disclose" those data (Hasik, 2014). Contractors generating technical data generally retain title to the information; the government may receive a license to use the data, subject to negotiation or contractually mandated by regulation, either before or after the economic activities which created the data. Technical data thus functions as something of a hybrid of trade secrets and copyrights. The TDPs are more valuable when undisclosed, but even if disclosed, the TDRs specified in contracts form a sort of copyright against their wanton use.

Obtaining data rights for at least limited governmental use contributes to at least two military objectives, on both sides of the value-for-money problem. Effective systems integration may require "mastering the technical baseline," which requires at least a relatively complete and accurate TDP (Air Force Studies Board, 2016). Reducing costs through competitive life-cycle support or follow-on procurements requires the actual data rights, as well as a data package suitable for either maintenance or manufacturing. Procuring data rights alongside the actual equipment then establishes an option either to hold future competitions for manufacturing new units of that equipment, or to in-source certain aspects of its maintenance. The value of the option, of course, is only realized upon exercise; if an agency mistakenly fails to exercise, or if circumstances practically prevent that exercise, the value collapses.

It is also important to note the multiple meanings of option in this context. Agencies may have (1) an option to obtain IP rights to the materiel they are purchasing. Those rights effectively create (2) options for different manufacturing and maintenance arrangements, on new and existing units of that materiel, in the future. Future procurements of new units may occur as (3) new contracts or options on the existing contracts for their production with incumbent suppliers, or through wholly new contracts with new suppliers—which requires the option of type (2) above.

Government's threefold power often means that the procurement bureaucracy can often get what it demands in technical data (Heidenkamp, 2013). As buyer, government generally exerts monopsonistic power in heavy armaments; for sellers, declining to provide data rights can send the military to a competing contractor, leaving the loser with no alternative outlet for its wares. As regulator, government can set favorable rules for the transfer of data rights, if it chooses. As the sponsor of armaments exports, government can strongly encourage transfer to friendly foreign governments to effect a sale. The receiving governments, however, may have less compunction than the U.S. government against using them to the economic detriment of the producer (Sidebottom, 2003). In contrast, any flow-

down of such throw-weight is specifically discouraged in DFARS 252.227-7013(K): "Contractors are precluded from using their power to grant contracts as economic leverage when negotiating and obtaining rights to subcontractors' technology when awarding contracts."

How well that works in practice is unclear. Regardless, such power in government establishes a monopsonist's dilemma, and that dilemma mandates a light touch (Grundman, 2010). On the one hand, IP rights are not natural rights, and security is a political imperative. This demands some exercise of the broad powers. On the other hand, diffusion of intellectual property in weaponry affects the diffusion of military innovations, in ways not always desirable to the home government (Farley & Isaacs, 2020). Moreover, too strong an exercise of power can damage industry's incentives for innovation, potentially limiting the flow of those innovations to the military. To curb the overenthusiasm, law, regulation, or policy can usefully limit officials' power to appropriate the value of IP.

History

A conscious policy may be appropriate, but the levers on data rights have not been consistently applied, despite periodic attention to the topic over more than a century. Concern over IP rights to weapons began in the United States and the United Kingdom around 1900 with the private development of torpedoes (Epstein, 2014). In the 1920s, repeated misunderstandings over IP rights in the United States induced a minor crisis in the aircraft industry, as governmental appropriation of designs for the mere cost of the prototypes drove small firms from the industry. By the 1930s, the War and Navy Departments were rarely purchasing IP rights to their weapons (in a policy enacted by Armed Services Procurement Regulation No. 9). During the Second World War, the government generally mandated licensing of designs to competitors to maximize utilization of production capacity, but afterwards reverted to past practice. Beginning in 1955, escalating aircraft costs led to a policy of generally greater assertions of greater governmental rights; in the mid-1960s, the contractors' rights were relatively reasserted.

Law began to intervene in the latter stages of the Cold War. The 1984 Competition in Contracting Act (41 U.S.C. 253) mandated establishing second sources with TDRs, where practical. That same year, TDRs were further established as a matter of law (in 10 U.S.C. 2320), though without explicitly defining "technical data." In voting through both pieces of legislation, the "Congress recognized the value of such data in the marketplace and did not wish to force contractors to give up all such rights in their privately created information" (Sidebottom, 2003; citing Maziel, 1986).

The procurement of AIM-7 Sparrow and AIM-9 Sidewinder air-to-air missiles in the late 1980s has long been considered the great achievement of the dual-souring practice, but success was otherwise uneven. The effort in the early 1990s to "reinvent government" emphasized reliance on contractors in all manner of ways, to include their own governance of IP. In the tighter budgets of that decade, program managers often bypassed buying technical data, to save money in the moment. One notable exception was the Family of Medium Tactical Vehicles (FMTV; see below), the Army's replacement for its fleet of medium trucks leftover from the Cold War. The Austrian automotive firm Steyr licensed a design to Stewart & Stevenson, the ultimately winning bidder, which in turn licensed the design to the U.S. government.

As late as 1999, however, the Marine Corps did otherwise. In procuring its own replacement for its fleet of Cold War mediums, the prosaically named Medium Tactical Vehicle Replacement (MTVR), the Corps did not secure a license from its supplier, Oshkosh Truck. However, by the mid-2000s, retirements of qualified systems engineers and the

comparative fiascos of the Total System Performance Responsibility initiative were leading to questions about that approach, at least in procurements of complex, bespoke systems. The 2007 National Defense Authorization Act mandated that program managers assess their contracting options for acquiring TDRs, and especially for sustainment. The 2009 Weapon Systems Acquisition Reform Act specifically mandated planning for competition through the life cycle, to include possibly buying TDRs.

That year, the competitive re-procurement of the A1P2 version of the Army's FMTV showed the potential value of owning TDRs. The FMTV program arose in the late 1980s as a replacement for all the medium trucks (2.5-ton and 5-ton) in the Army. From 1992 through 2010, 54,000 FMTVs were built in the same factory in Sealy, TX, by Stewart & Stevenson, whose single-product truck division was then bought in 2006 by Armor Holdings, which in turn was bought in 2007 by BAE Systems. In 2009, the Army solicited build-to-print bids for the next tranche of vehicles (the FMTV A1P2s), and three firms responded credibly: incumbent BAE Systems, Navistar, and the ultimately successful Oshkosh, which underbid the incumbent by 9%. As BAE Systems' truck-building division remained to that point a one-product business, Oshkosh's win induced exit from the market, eliminating a competitor.[1] In the first five years of the contract, under the fixed prices which Oshkosh offered in its bid, the Army would procure 23,173 FMTV A1P2s.[2] For the government, 9% of a unit price of at least $100,000 across 23,173 trucks amounts to a savings of more than $200 million. Even for the DoD, that is a meaningful sum. And as the Army had initially planned to buy more A1P2s in that time frame, the predicted savings were yet higher.

Perhaps on the promise of further victories, policy initiatives continued. In 2010, the Better Buying Power memorandum from Under Secretary of Defense Ashton Carter induced a bureaucratic overreaction to interest in TDRs (Hasik, 2014). In 2014, the request for proposals for the Joint Light Tactical Vehicle (JLTV) solicited pricing for the TDRs. Rumor holds that all three of the final bidders—Oshkosh, Lockheed Martin, and AM General—offered licenses to almost their entire designs, and for comparatively small sums. In 2016, the government exercised its option with Oshkosh, the winning contractor, to acquire the entire TDP, and the right to provide that TDP to any interested competitor.

In 2017, the Trump Administration renewed the Obama Administration's emphasis on acquiring IP, but with more caution than Carter's regime. Since 2018, the Army has been leading, in advance of the DoD, with a five-part strategy for acquiring IP:[3]

1. Devising long-term requirements for IP, early in the life of a program, that address each system's life cycle.

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[1] For an extended discussion of that contracting story, see James Hasik, "Oshkosh, the FMTV, and the example of fixed-price contracting," October 28, 2013, at https://www.jameshasik.com/weblog/2013/10/oshkosh-the-fmtv-and-the-example-of-fixed-price-contracting.html .

[2] As noted subsequently, the data on prices and quantities of FMTVs were supplied by Brendon Courtade, chief of the Medium Tactical Vehicles Contracting Team for Army Contracting Command at the Detroit Arsenal.

[3] Army Directive 2018-26, "Enabling Modernization Through the Management of Intellectual Property," December 2018. For a brief discussion, see Jane Edwards, "Mark Esper OKs New Army Intellectual Property Management Policy," *ExecutiveGov,* December 12, 2018, at https://www.executivegov.com/2018/12/mark-esper-oks-new-army-intellectual-property-mgmt-policy/ .

2. Communicating with industry about these requirements to meet the specific needs of each branch of the Army.
3. Seeking only those IP rights necessary for meeting those needs.
4. Collaborating with industry for devising custom IP rights where appropriate.
5. Negotiating prices for IP, early, and ideally while competition exists.

The Army has undertaken to test this policy through five diverse "pathfinder" programs: the Integrated Visual Augmentation System of virtual reality goggles, the M1156 Precision Guidance Kit for 155 millimeter howitzer shells, the Fifth Generation Technical Insertion for battlefield communications systems, the Future Long-Range Assault Aircraft, and the Next Generation Squad Weapon (a light machine gun). The set is intentionally comparatively diverse in the current status of the programs, the number of contractors currently involved, the quantities sought, the dates of first fielding, and the Army's probable goals in seeking IP rights.

Analysis

By late 2019, the DoD's interest had broadened beyond that of the Army, so IP management is now an issue for potentially any procuring official and any contractor (Bertuca, 2019). It is thus important to consider that any agency's objectives for IP, and the specifics of the Army's strategy, can easily conflict with many suppliers' interests, in two ways. Mastering the technical baseline of weapon systems requires TDPs, but loose government security frequently allows commercially sensitive data to flow to competitors, even if not provided for that purpose.[4] And of course, reducing the cost of follow-on procurements, spares, and upgrades is less interesting to contractors, who may seek compensation in advance for their TDRs, which frequently confer upon them an enviable franchise in life-cycle support (Ekman, 2019).

When does this matter most, for both government and contractor? Many military customers crave pure fleets, for ease of support on far-flung battlefields, and so often prefer to procure single types of equipment for years or decades. In 2009, the acquisition of the IP underlying the FMTV some 17 years earlier clearly mattered. But would it matter thereafter? Does the government actually need to hold a competition to extract better prices? Or might an incumbent supplier, in the shadow of competition with alternative producers, discourage entry through limit pricing, while simultaneously improving terms for the procuring agency? Here I do not mean limit pricing in the usual sense, where a monopolist deters entry with a lower price and excess capacity. Rather, I mean a form of limit pricing, perhaps peculiar to procurements auctions, in which the incumbent supplier reduces or progressively reduces his prices, in the latter years of a supply agreement, to convince the procuring agency itself to forgo a competitive procurement, at least for a time. Contracting for option years is a administratively simpler process than holding wholly new competitions, and is thus often attractive to busy bureaucrats.

[4] Note the comment, "Obviously, in any procurement process, you see instances where data is disclosed," by Leanne Caret, president of Boeing Defense, Space and Security, in Valerie Insinna, "U.S. Air Force leak of Boeing's proprietary info not driving bid decision on ICBM replacement," *Defense News*, November 17, 2019.

Modeling the *ex ante* value of the option to procure IP is challenging. In particular, "estimation of volatility is difficult in practice" because IP is at most infrequently traded with observable prices (Chang, Mao-Wei Hung, & Fend-Tse Tsai, 2005). While the real options approach remains valuable, the challenges recommend some attention to ex post reviews of how agencies made use of what IP they purchased. To test the value of procuring those rights in government procurement auctions, we would prefer to construct a nestled model of U.S. military procurements from 1990 through 2019, a time period over which, as noted above, the general policy of IP procurement has shifted from laxity to comparative rigor. We would group programs into those in which the government largely purchased the IP to the underlying designs of the systems its officials chose, and those in which it did not. We would then test for statistical differences in the trajectories of procurement costs in the ensuing years, to ascertain whether price changes were materially different under the two treatments.

If we wish to narrow the analysis to a manageable set of programs, military trucks do provide an excellent field for the purpose, and for five reasons. First, the issue is important both to government policy and business strategy. The Army and the Marine Corps will continue to buy trucks, likely in pure fleets where possible. Those trucks will likely continue to be based substantially on technologies developed for commercial truck offerings, so contractors will arrive at competitions with their own independently developed IP. Second, we have a relatively rich set of cases to study, with the Army and Marine Corps buying vehicles through at least a dozen programs since the end of the Cold War through the present. Third, those cases include differing treatments of the procurement question by the government, and in two parts: whether the government purchased the IP rights initially, and whether the government held a follow-on competition for further units at a later date, possibly leveraging those rights. Fourth, like ships and missiles, but less so aircraft or space satellites, military trucks have been procured under build-to-print arrangements, particularly in follow-on contracts, on-and-off for decades. Fifth, most truck manufacturers also have more commercial business than military, with many alternatives for sales if unsuccessful with any single bid in a procurement auction. Government's considerable buying power is thus less in the market for military trucks than for bespoke heavy armaments. As noted above, we have thus seen cases of truck purchasing programs with very different degrees of IP appropriation.

Obtaining verifiable data, however, has been difficult. For example, the DoD's records on annual purchases of FMTVs, as reported to Congress in the so-called P-1 procurement budget justification documents, do not match the figures in the FMTV Selected Acquisition Reports. The figures in each P-1, which trail the current budget by two years, should provide an accurate count of units procured for dollars spent. In this case, they are consistently amiss. Worse, the lines for the MTVRs in the P-1s show zero total units procured during years of brisk purchasing. Producing valid analyses with the publicly available data is impossible.

Alternatively, to examine this question, we should seek a test case which closely compares procurements. In theory, the closest comparison would be two procurements in which a single governmental agency procured the same materiel, from the same contractor, at the same time, both with and without the design rights. Such a bifurcated approach would be senseless, and is thus not to be found.

However, if we relax those constraints slightly, we can identify a close comparison that still illuminates the potential opportunity. We could compare two procurements in which different governmental agencies procured substantially the same type of materiel, from the same contractor, at different points in time, alternatively with and without the design rights.

We should expect to relax the sameness in the buyer because single defense agencies often follow consistent procurement strategies for many years; such often is the longevity in their jobs of senior civil servants, who may have a particular style of management. We should also expect to relax the condition of simultaneity because different agencies procuring similar material at the same time should expect pressure from the Office of the Secretary of Defense and Congress to harmonize their requirements and combine their procurements, for better buying power initially and ease of sustainment subsequently. If these two variances do not greatly challenge the validity of the comparison, then we may have a powerful set of matched cases.

Trucks remain a generally a good candidate for this analysis, and specifically, the two cases of medium trucks described above provide a remarkable comparison.

The FMTV A1P2 has been built by Oshkosh from late 2009 through the present. The initial five-year contract was won in August 2009 under a competitive, fixed-price, built-to-print competition. As requested by the Army, bidders offered stepladder pricing, in which successively larger quantities would come at progressively lower prices. The Army exercised its options for sixth and seventh years, also with fixed, stepladder prices. While considering the need for a future FMTV A2, the Army administratively modified its contract with Oshkosh for A1P2s to include eighth, ninth, and 10th option years, bringing orders through April 2020. The Army and Oshkosh then negotiated sole-source prices for Order Year 6, for Order Year 7, and then for Order Years 8−10 in a single action. Note that these negotiations took place long after the initial, competitively awarded contract was signed; this provided an opportunity for Oshkosh to limit-price, if the company so chose. The contract modification for years 8−10 was challenged with a lawsuit by Navistar, which as noted had bid unsuccessfully in 2009; the case was only finally dismissed in January 2020 (Judson, 2020). Over about a decade, the Army has procured tens of thousands of FMTV 5-ton, off-road trucks; in cargo, long wheelbase cargo, dump, wrecker, and tractor versions. (The Army also procures 2.5-ton versions, but I have excluded those from the analysis, except to illustrate the total quantity of all FMTVs procured.) The FMTV is thus almost the sole medium truck in use today by the Army. The government owns a license to the design which allows it to choose its manufacturer at will.

The MTVR was first built by Oshkosh from late 1999 through 2004, under a competitively awarded contract, with fixed pricing. In 2004, the company secured a second, sole-source, multiyear requirements contract from 2005 through 2010, with firm, fixed, stepladder pricing. By 2011, the program office had procured 11,135 MTVRs. In 2012, Oshkosh won a third, sole-source, multiyear requirements contract through 2016, again with stepladder pricing (though this does not serve as a basis for the analysis). Ultimately the Corps would only order a small quantity in this third round, bringing the total to about 11,400 MTVRs. Oshkosh is consequently the original equipment manufacturer for all the medium trucks currently in use by the Marine Corp. The vehicle has been procured in five versions: as cargo, extra-long wheelbase cargo, dump, wrecker, and tractor trucks. The cargo versions are rated for 7-ton loads off-road. Some vehicles were procured for the Navy's Seabee Construction Battalions, but all the contracts for MTVRs in the Navy Department were managed and priced by the Program Manager for Motor Transport at Marine Corps Systems Command. To this day, Oshkosh owns the design rights to the MTVR outright, so unless and until the company grants a license, only Oshkosh can build an MTVR. As attached as the Marine Corps has been to the MTVR, the company has had little reason to limit-price.

Note that Oshkosh took the FMTV contract from BAE Systems, and in the process knocked that company out of the industry. Management at the company assuredly

understand the potential implications of controlling and not controlling TDRs. If Oshkosh were concerned about losing a truck-building franchise, management might discourage a follow-on competition by gradually reducing prices during negotiated rounds of follow-on procurements. The prices on FMTVs in option years would show a more markedly negative trajectory than those for MTVRs in option years. But did they?

To focus the comparison further, I compare what are arguably the most basic versions of each truck for the combat conditions of the early 21st century: the FMTV A1P2 5-ton cargo truck, of standard length, without a winch, and with irreducible armored cab; to the MTVR 7-ton cargo truck, standard length, without a winch, and with an irreducible armored cab. The basic cargo version was the most numerous version procured, and so it is unlikely that Oshkosh would have offered a loss-leading price on these while hoping that the Army would order a large number of the more specialized versions. The comparison is challenged, however, by differences in the information provided in spreadsheets by the two procuring agencies, the Army Department's Program Manager for Medium Tactical Vehicles and Navy Department's Program Manager for Motor Transport.

Effecting the analysis, that is, did require obtaining previously unreleased data on prices paid per truck from the two agencies. To avoid disclosing commercially sensitive information, I have calculated indexed prices, comparing all figures to the price of this relatively basic MTVR in the calendar year 2003, the fourth year of the initial five-year contract for those trucks. To effect the comparison across time, I deflated prices according to the Bureau of Labor Statistics' specific Producer Price Index for Transportation Equipment Manufacturing. The index is available only to January 2003, so the beginning of 2003 is necessarily the start of the analysis. This should not threaten the validity of the analysis, as it still permits a review of the pricing in the fourth and fifth years of the initial five-year contracts, which were determined by the bidding process before deliveries began. Including the fifth year in particular provides a clean discontinuity analysis with the pricing of the option years, or a follow-on contract.

For the MTVRs, I calculated average annual prices by averaging the cells in a spreadsheet of prices actually paid for each individual vehicle. The general stepladder itself was not available from the Navy Department's program office. For the FMTVs, I calculated average annual prices by (1) finding the lookup table of stepladder prices, (2) multiplying the number of vehicles in each quantity range by the unit prices for that range, (3) summing those figures, and (4) dividing through by the number of vehicles of that type. The actual prices paid for each truck were not available from the Army Department's program office.

Results

The table reveals the results, comparing the fourth and fifth years of orders for both MTVRs and FMTVs against one another, and to the seventh and eight years of orders for each type of truck. I excluded the sixth year simply because the Corps bought none of this relatively basic truck model that year; the Marines were increasingly interested in armored trucks. Slight inconsistencies remain in the cataloging of ordering years, due to the vagaries of budgeting and contracting. This should not greatly challenge the validity of the comparison, as prices over time and quantities in the initial five-year contracts were quite consistent. The most vexing differential is the decade between the two intervals. Management at Oshkosh changed, and the company's financial fortunes improved. When bidding on the FMTV contract, the company was beginning to encounter financial difficulties. If anything, however, the earlier plight should have induced more desperation than confidence in pricing, but only in the initial contract. Indeed, the company was widely thought at the time to have underbid its own cost structure.

Table 1. Quantities and Index of Prices Paid by the Department of Defense for MTVR and FMTV A1P2 Cargo Trucks from Oshkosh, in CY2003 $*

Ordering Year	Actual Year		Total Quantities		Version Quantities		Price Index	
	MTVR	FMTV	MTVR	FMTV	MTVR	FMTV	MTVR	FMTV
In the Initial, Competitive Contract								
4	Jan. 2003 to Dec. 2003	Oct. 2011 to Sep. 2012	1574	2455	77	269	1.00	1.01
5	Jan. 2004 to Dec. 2004	Jan. 2013 to May 2014	914	1973	70	382	0.99	1.02
In the Follow-on, Negotiated Contract or Options								
7	Jan. 2006 to Dec. 2006	Oct. 2015 to Sep. 2016	629	1546	93	388	1.20	1.24
8	Jan. 2007 to Dec. 2007	Oct. 2016 to Sep. 2017	1103	1213	21	24	1.23	1.28
**Specific models: MTVR and FMTV A1P2 cargo trucks, armored, without winches, with irreducible cabs*								

Note that over the years in comparison, the Army bought many more 5-ton FMTV A1P2s, for which it owned the design rights, than the Marine Corp bought 7-ton MTVRs, for which it did not. In both cases, prices escalated considerably at the end of the initial contract, when the vendor started to consider that he may have locked the customer. Inflation-adjusted prices for the smaller and thus arguably less costly FMTV A1P2s were higher in the initial, competitively-awarded contracts than those for the larger MTVRs. That is interesting, but note further that the price differential between MTVR and FMTV grew from the initial competitive contract to the follow-on negotiated contract. That is, the escalation in movement from competitive to sole-source contract was greater with the FMTV—the vehicle for which the government held the design rights. Had the IP rights to the FMTV effected some limit pricing by Oshkosh, we would see entirely the opposite effect.

Implications

The 1984 Competition in Contracting Act mandates that federal agencies employ "full and open competition through the use of competitive procedures," unless specifically authorized otherwise in law. In the procurement or supply chain management departments of well-run commercial entities, such a mandate is generally unwarranted: procurement professionals can generally be trusted to know when competitive solicitations would be unlikely to produce better results than long-term relationships with trusted suppliers who know how to pursue continuous cost-reduction for progressively better limit pricing. Thus, in theory, this legislated demand for recurring competition could actually lead to higher costs on longer schedules.

In this case, however, the government obtained prices higher than such limit pricing would indicate, on longer schedules, but without the ostensibly mandated competition. Oshkosh almost appears to have understood the Army's thinking on procurement as well as the Army itself. The company did not limit-price, and yet the Army still extended Oshkosh's franchise by a further three years. It is possible that the Army signaled all-too-clearly its preference for sticking with a single contractor as long as it could. It is also possible that the

Army had no better option, and that management at Oshkosh could sense so, regardless of what the Army did or said. Indeed, the company may have drawn a lesson from its negotiations for extending its FMTV A1P2 franchise as it bid for the JLTV. If the price at which the company offered the data rights for the JLTV was indeed modest, it may still not have been an ex ante bargain for the Army, if Oshkosh wins the upcoming competition for the JLTV A2.

In military trucks then, there seems no monopsonist's dilemma, as the government is hardly extracting too much buying power. Securing better pricing in the long term specifically through data rights requires a more credible threat to move away from sole-source awards.

Further Research

If limit pricing is difficult for government agencies to draw out of incumbent original equipment manufacturers, they may find another opportunity with repair parts. The recent controversy over the high margins earned on such sales by Transdigm has highlighted the potential scale of the opportunity.[5] Repair parts offer much higher transaction volumes, even greater commerciality than trucks, and greater scope for cost improvements, as commercial parts periodically exit production, regardless of governmental specifications. For all these reasons, procuring agencies may find far more opportunities in that realm to encourage limit pricing. Actionable research, however, will require the release of audited prices, quantities, and item descriptions for a wide range of parts.

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[5] This issue has been extensively covered in the trade press. See, for example, Darryl Scott and Sam Kidd, "TransDigm's Excess Profits Show Weakness in Supply Chain Management, not Pricing Practices," *Defense News,* June 3, 2019.

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