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Who Uses Project Labor Agreements?

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Abstract

This is the first comprehensive study of the adoption of project labor agreements on public works. Using data for about 450,000 California public projects (2012–2023), we find that PLAs are adapted to larger projects, more likely to be combined with design-build procurement, more likely to be adopted in wealthier counties with larger economies, more likely to be adopted by larger procurement agencies, are adopted during procyclical upswings, and along with design-build, PLAs are more likely to be adopted in more Democratic-leaning counties. Except for very large projects, PLAs are not combined with leased-back arrangements, which are more likely to be adopted in Republican-leaning counties. The prevalence of PLAs, design-build, and leased-back arrangements rises with project size, while traditional low-bid contracts and job-orders are more likely on smaller jobs. However, PLAs are more commonly found in combination with traditional low-bid contracts and job-orders projects when those projects are unusually large.

Keywords

project labor agreements (PLAs), public procurement agencies, procurement method, California, comprehensive data

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A project labor agreement (PLA) is a collectively bargained agreement between an owner of a project and a consortium of construction craft unions that set the terms of employment for all workers on a specific project. PLAs on U.S. public works are a contentious issue. Beginning with President George Herbert Walker Bush, every Republican president except Donald Trump has prohibited the use of PLAs in federal construction. In contrast, every subsequent Democratic president has permitted and typically encouraged PLAs on federal projects. (Kussy & Cooke, 2010; Wikipedia, 2024) In 2022, President Biden required the "use project labor agreements in connection with large-scale [federal] construction projects…" Before 2011, only two states prohibited the use of PLAs in state and local public works (Utah, 1995; Montana, 1999). By 2013, 23 states prohibited PLAs on state and local construction. (Economic Policy, 2024; thetruthaboutplas.com, 2023)

The academic literature on the economics of PLAs is relatively sparse. (Bachman & Haughton, 2007; Belman, Ormiston, Kelso, Schriver, & Frank, 2010; Dunlop, 2002; Figueroa et al., 2013; Haughton et al., 2003; Ormiston & Duncan, 2023; Parkin, 2003; Philips & Waitzman, 2021) It focuses primarily on project costs and the legality of PLAs in the public sector. (Baskin, 1999; Button, 2018; Chandler, 2022; Chimienti, 2010; Isokait, 1998; Kopp & Gaal, 1999; Lange, 1997; Lund & Oswald, 2001; Lyons, 1998; Northrup & Alario, 1998; Opfer et al., 2001; Siegel, 2000; Ward, 2021) The literature is constrained by limited information on the prevalence of PLAs on public works and in what public sectors PLAs are more commonly found.

PLAs may also be combined with different procurement practices. Most public construction projects are awarded through a design-bid-build sealed bid process, hereafter referred to as traditional procurement. This is a three-stage method where the project is designed and specified; contractors then bid on those specifications; and the winning contractor, typically with the assistance of subcontractors, then builds the project. Alternatives to traditional procurement include job-order, leased-back, and design-build. Job-orders allow a construction company to complete many smaller projects over a defined period, typically up to a maximum dollar value. In leased-back arrangements, the procuring agency leases a site to a builder who finances the project and leases the facility back to the procuring agency. The builder receives a long-term stream of leased-back income in exchange for funding the project. Unlike traditional procurement, in design-build, the entity holding the contract to design the project also builds the project.

PLAs and other procurement practices address different challenges that may arise in public construction. While it is generally understood that larger, more complicated projects tend to use PLAs, this relationship has yet to be quantified. Likewise, the degree to which PLAs are combined with other non-traditional procurement practices is not known. Failure to understand how PLAs are used in conjunction with other procurement practices also limits our understanding of the function of PLAs in public construction.

The determinants of PLA adoption are also not generally understood. It is unclear if PLA adoptions are pro-or-counter-cyclical, concentrated in thriving or stagnating local

economies, or used primarily by larger or smaller procurement agencies. Our analysis shows that while political and economic factors predict the choice of procurement method, including PLAs, the more important drivers of procurement practice choice are project size, procuring agency size, and the volume of work an agency is letting in a given year.

This paper examines data on 450,425 public construction projects collected by the California Department of Industrial Relations between 2012 and the first quarter of 2023 from reports provided by state and local procurement agencies. The detail and scope of this data allow us to examine public construction procurement across an entire state, something not offered by smaller scale statistical analysis or case studies. The long timespan covered by these data enables us to examine the choice of procurement practices for an entire state's public construction sector over variations in the construction business cycle. Over the entirety of the survey, project labor agreements comprise 2 percent of all projects but 15 percent of the real value of all projects.

This paper proceeds as follows. We explain PLAs and the procurement practices with which they may be combined and present descriptive statistics showing the kinds of projects on which each procurement practice is used. We then construct a set of logistic regressions predicting the probability of a project using a particular procurement method based on project, procurement agency, and project county characteristics. We also specify an additional regression examining the probability that PLAs are paired with alternative procurement contracts relative to the traditional approach. Finally, we summarize the results, answering our motivating question: Who uses PLAs?

Data

Our data covering 450,462 projects from 2012 to 2023 come from a survey administrated by the California Department of Industrial Relations sent to public construction procurement agencies beginning in 2012. (California Department of Industrial Relations, 2024) The first three years were partial surveys as local agencies increasingly complied with reporting requirements. While limited to California, this data provides detailed information on procurement practices in public construction, including PLAs, which are not available in other data sources.

This survey asks for the procurement agency name, estimated cost of the project, estimated or actual start date, estimated or actual completion date, and project location. It also asks whether the project is a PLA, whether it was procured using an alternative to traditional procurement, whether a special labor-regulation compliance program covered the project, and a brief description. (California Department of Industrial Relations, 2024). We derived the type of project from this description of the project. We supplemented these data with data about the project county, including county unemployment, median income, county GDP, and county political party affiliation (based on voter registration). We report dollar values using 2023 dollars based on the Case-Shiller housing price index for Los Angeles and San Francisco. (Federal Reserve Bank of St Louis, 2024)

Distribution of Procurement Methods

This study considers PLAs and four other public construction procurement arrangements with which PLAs may be combined—traditional, job-order, design-build, and leased-back contracts. In our data, these four procurement methods are recorded as mutually exclusive project delivery methods. Our data does not record other alternative procurement methods, such as competitive proposals (best-value bidding) and construction manager at risk (CMAR). (FindLaw, 2023c, Jones-Day, 2014, U.S. Department of Housing and Urban Development, 2007) The following sections define and describe each procurement practice and summarize their prevalence in our data.

Project Labor Agreements (PLAs)

The primary differences between a collectively bargained agreement (CBA) and a project labor agreement (PLA) are a matter of who is at the bargaining table and how long the agreement lasts. A CBA entails single-craft-union bargaining with the corresponding contractors over work, generally spanning a period set in the CBA. A PLA is cross-craft-union-consortium bargaining with an owner over a specific project, with the PLA only lasting for the project's duration.

The PLA negotiating table brings together new potential partners with various assets and goals. Contractors are absent. Craft unions must come to the table as a group having suborned individual union interests under group goals. In contrast to CBA bargaining with contractors, owners in PLA bargaining have specific needs and goals tied to the specific characteristics of their project or set of projects. The owner offers work. The larger or longer the project, the more the owner has to offer. The union consortium offers skilled labor. The stronger the local apprenticeship training programs are, and the greater the skilled labor shortage is in an area, the more the union group has to offer. Some public agencies have an interest in local hire provisions or youth training. Unions may facilitate these goals through their hiring halls or apprenticeship programs. When these issues are agreed to through bargaining, PLAs are often called community workforce agreements.

Table 1. The Prevalence of project Labor Agreements in California public Construction, 2012 to 2023[a].

PLA status	Projects	Total value of projects expected (billions)	Percent of projects	Percent of project value
No-PLA	434,281	521	98.02	89.39
PLA	8368	62	1.98	10.61
Total	442,649	583	100	100

[a]Excludes projects where bid arrangement or value of project unspecified. When including these projects, PLAs' share of project value rises to 14.79 %.

Table 1 shows that project labor agreements are about 2 percent of public projects in California but account for about 10 percent of the value of public construction among projects with complete data. In our data, procurement agencies report expected rather than final costs. For comparison purposes, Table 1 includes only projects that report the bid-letting procedures. Only about 1.4 percent of projects did not report this information, but many of these projects were large. When projects with incomplete data are included, the PLA share rises to roughly 15 percent of the value of public construction in California.

Traditional Contracts

Traditional procurement is the most commonly used public procurement practice, but it is not without its controversies. Critics argue that this stark separation of functions leads to communication and conflict-of-interest issues between a project's owner, designers, and builders. Projects awarded to the lowest responsible/responsive bidder may incentivize cost-cutting that could imperil the project's quality or completion. Cutthroat bidding might lead to contractors engaging in bait-and-switch strategies in material purchases or installation. Higher-tier contractors are incentivized to press lower-tier contractors to reduce their prices before or after bid submission. Under some circumstances, this can lead to subcontractor bankruptcies and project delays. Despite these criticisms, traditional design-bid-build predominates in the public sector for a reason. The sharp division of responsibilities and the focus of competition on a project's start price provide politically attractive and economically promising transparency. (Nguyen et al., 2018; Park & Kwak, 2017)

Table 2 shows that traditional procurement dominates the acquisition of construction services in California's public sector. It accounts for 91 percent of projects and 84 percent of the value of all public works. Job-order procurement is the most common alternative, accounting for 8 percent of projects and 7 percent of project value. Leased-back and design-build together account for less than 1 percent of projects but almost 9 percent of the value of public works, reflecting the larger size of projects using these procurement techniques.

Table 2. Distribution of procurement Methods in California public Construction, 2012 to 2023[a].

Procurement method	Number of projects	Total value of projects expected (billions)	Percent of projects	Percent of expected value
Traditional	403,221	490,518,072,022	91.26	84.1
Job-order	35,900	41,559,944,822	8.05	7.13
Leased-back	3,159	36,089,845,238	0.6	6.19
Design-build	369	15,085,193,608	0.09	2.59
Total	442,649	583,253,055,690	100	100

[a]Excludes projects where bid arrangement or value of project unspecified.

Table 3 includes the entire sample of 450,425 projects, including those that did not report the procurement method, and bifurcates projects into those that used PLAs and those that did not. Traditional arrangements without PLAs account for 88 percent of all public work projects. Among these traditionally procured projects, only 1.74% used a PLA. So, regarding the number of public projects, most were traditional, and among these, most did not include PLAs.

Table 3. Distribution of procurement Procedures Across the Number of public Works projects, 2012 to 2023.

Procurement method		Percent non-PLA/PLA by procurement method	Number of projects	Percent of all projects	Percent of project values (expected)
Traditional	No-PLA	98.26	397,221	88.19	66.81
	PLA	1.74	7031	1.56	6.96
Leased-back	No-PLA	91.48	2911	0.65	4.67
	PLA	8.52	271	0.06	0.76
Job-order	No-PLA	97.13	35,008	7.77	5.8
	PLA	2.87	1035	0.23	0.45
Design-build	No-PLA	87.26	322	0.07	1.13
	PLA	12.74	47	0.01	1.14
Not specified	No-PLA	92.23	6068	1.35	6.8
	PLA	7.77	511	0.11	5.48
	Total		450,425	100	100

However, traditional procurement without a PLA is used disproportionately on smaller projects. While traditional procurement accounted for about 88 percent of all projects, it accounted for only two-thirds of the value of these projects. In contrast, PLAs are disproportionately used on larger projects. While the number of traditionally procured projects associated with PLAs was small (1.7%), the share of project value was much higher at 6.96 percent. This pattern continues for design-build and leased-back projects, where PLA-covered projects again account for a small share of projects but a relatively larger share of project value.

Job-Order Contracts

Job-order contracts are often found in public procurement. This procurement method is adapted to recurring work, maintenance, and new, straightforward projects. Job-order contracts save on procurement-time costs by selecting a contractor in advance of multiple tasks that may emerge at scheduled or indeterminate intervals. While each task may be relatively small and quickly finished, the length of the contract may be relatively long due to the anticipated recurring nature of the tasks. The job-order approach

is meant to prioritize time and economize on procurement costs. A pre-priced catalog of items needed to complete a project is produced, and contractors bid on the project based on a fraction of the prices in the catalog. (Doud, 2016) Use of a pre-priced catalog may lead to poorly specified tasks that are vulnerable to contractors cost padding. (Ruiz, 2016) Nonetheless, job-order contracts are the most commonly found alternative procurement strategy in our data. (Table 2)

While, on average, job-orders are expected to last somewhat longer than low-bid contracts, Job orders were smaller in size and shorter in duration in the absence of a PLA. The mean and median values of projects procured by job order were similar to those of traditionally procured projects without a PLA (Table 4). In contrast, among traditional and job-order projects involving PLAs, the median values of the PLA projects were 7 to 8 times larger than those without PLAs. There are 1035 job-order/PLA contracts in our data, accounting for almost $3 billion of work (Table 3). Still, job-order-PLAs are a small fraction of all job-order work in both number and value.

Leased-Back Contracts

Leased-back procurement arrangements in our California data are primarily used by school districts and, to a lesser extent, community colleges and universities. The procurement agency leases a school site to a developer/builder who both finances and constructs the project. The builder then leases the facility back to the school district. The builder's site lease is minimal (typically $1 per year). This arrangement is authorized by the California Education Code section 17406 and was authorized by the legislature in the 1950s to assist resource-strapped districts in building schools. (FindLaw, 2023b) In California, other procurement agencies, primarily cities and

Table 4. Distribution of procurement Procedures Across the Mean and Median Value of public Works projects, 2012 to 2023 ($10,000s).

Procurement method	PLA status	Mean	Median
Traditional	No-PLA	112	5
	PLA	659	37
Leased-back	No-PLA	1075	242
	PLA	1864	703
Job-order	No-PLA	111	5
	PLA	289	42
Design-build	No-PLA	2328	260
	PLA	16,148	1468
Not specified	No-PLA	748	42
	PLA	7163	244
Total		148	5

counties, may also use leased-back arrangements, often called public-private partnerships. (Murai, 2020)

Leased-back procurement is also controversial; the critical issue is selecting the contractor. (Gligich, 2023) Responding to legal controversies over who should have won a lease, the California legislature has set guidelines for selection based on best-value criteria. The procurement agency must select the contractor that will provide the best value for the school district, considering the contractor's competence, qualifications, and performance history. The school district must have established fair and impartial guidelines to determine the best-value selection. (FindLaw, 2023a)

In our data, public school leased-back projects account for only 1.7 percent of all school projects but 27 percent of the value of public school construction. Public school construction accounts for almost 80 percent of all leased-back projects, while most of the remaining non-public school projects account for 20 percent of the total value (Table 5). When paired with PLAs, leased-back projects are substantially larger, and school projects paired with PLAs are about twice as large as leased-back school projects not paired with PLAs. Thus, leased-back projects address public financing challenges. When paired with PLAs, leased-back arrangements address the challenges of larger projects (which can include financial, labor-procurement, and construction challenges). Some leased-back PLAs may also be design-build projects, but our data does not capture this triple combination.

Design-Build Contracts

In traditionally procured projects, the owner designs the project (or has the project designed) and asks contractors to bid on detailed specifications describing the project. In design-build, a single design-build entity holds the contract to both design and build the project. Sometimes, this can cause controversy. One such controversy involved the Los Angeles Unified School District (LAUSD) in the building of the Belmont Learning Center. In investigating this project, the L.A. District Attorney concluded:

Table 5. Distribution of Leased-back projects Across Schools and Other public projects by PLA or Not-PLAs.

PLA status	Sector	Project count	Total value (expected in millions)	Value per project (expected in millions)	Percent total value
No-PLA	Non-school	679	6579	10	18.23
	School	2,232	24,478	11	67.83
PLA	Non-school	55	823	15	2.28
	School	216	4210	19	11.66

- Design-build does not make use of competitive bidding, where prospective builders bid on the same design.
- Criteria for selecting a contractor are subjective and difficult to evaluate and justify later.
- The design and price selected arouse public suspicion. True or not, this can lead to a loss of public confidence.
- The design brief is subject to different interpretations from both the client and contractor, creating a conflict of interest.[1]

In short, the District Attorney complains that design-build lacks the advantages of traditional design-bid-build procurement.

Nonetheless, design-build has its adherents:

> In traditional project delivery, also known as design-bid-build, a fundamental gap exists between all parties. Designers and contractors are each under separate agreements with the owner. These siloed entities operate seemingly independently, with the owner in charge of herding each individual organization. As you can imagine, when problems occur, it's natural for one side to blame the other. For the project owner, this can cause an avalanche of headaches—from budget concerns to design compromises. (Cedreo, 2023)

Thus, adherents of traditional procurement emphasize this procurement method's transparency, particularly to the public, while critics of design-bid-build emphasize the potential for finger-pointing between project participants. While design-build is applied to some small projects, its advantages may be greater on larger projects where obtaining a complete design specification may be challenging before letting the project. In these situations, the traditional approach may invite expensive change orders during the life of the project due to insufficient specifications. Design-build projects were the largest in our data (Table 4), and those paired with PLAs were the very largest.

Our data showed 47 design-build/PLA contracts between 2012 and 2023. They amounted to $7.5 billion of work and accounted for about half of all the value of the 369 design-build projects. (Table 4) Indeed, the PLA-design-build projects are more than 100 times larger than the average project in our data. Thus, designing all the components for large projects before the fact may not be feasible, and pairing design-build with PLAs may help mitigate some uncertainties of very large endeavors.

Procurement Arrangements and Project/Agency Size

Figure 1 shows the distribution of the estimated project values across procurement methods, which are bifurcated by PLA use. It shows that traditional procurement and job orders are generally applied to smaller projects. (Figure 1, left panel.) However, traditional and job-order projects are much larger when combined with a PLA. This is shown more clearly in the right panel of Figure 1. Thus, traditional procurement is used

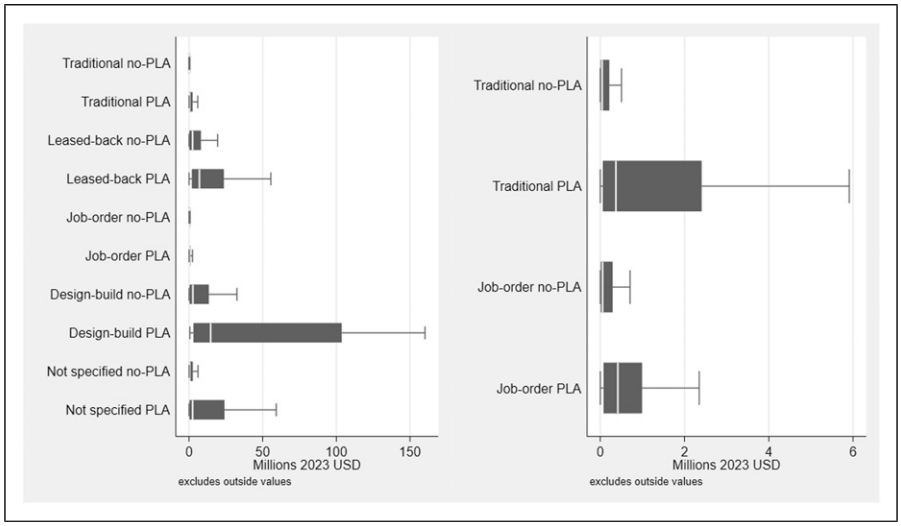

Figure 1. Distributions of the value of projects by contract type and PLA with a focus on traditional and joborder contracts, 2012 to 2023.

on smaller projects, while PLAs are paired with design-bid-build on the larger of these typically smaller projects. In contrast, leased-back and design-build procurement are found on larger projects, and a fortiori, PLAs are typically found on the larger of these larger projects.

While, in the aggregate, PLAs account for 15 percent of the total value of public works in our data, Figure 2 shows that for projects of less than $1 million, PLAs account for very small percentages of construction value. In contrast, for projects above $100 million, PLAs account for an ever-rising share of the value of these projects. In the case of the handful of projects coming in between $2 billion and $3 billion, PLAs account for almost half of all that work.

Alternative Procurement is Associated with Larger Procurement Agencies

The size of procurement agencies, measured by the total value of that agency's work, influences the use of alternative procurement methods. We measure the size of a procurement agency by the sum of the value of projects that the agency lets over time. Table 6 shows that up to the median-sized procurement agency, roughly 92 percent of all their projects are let through traditional procurement without using PLAs. Above the median-size agency, the share of traditional procurement falls. Furthermore, non-traditional procurement practices are concentrated among the largest 10 percent of agencies. Almost 20 percent of the contracts these large agencies let are non-traditional procurement arrangements.

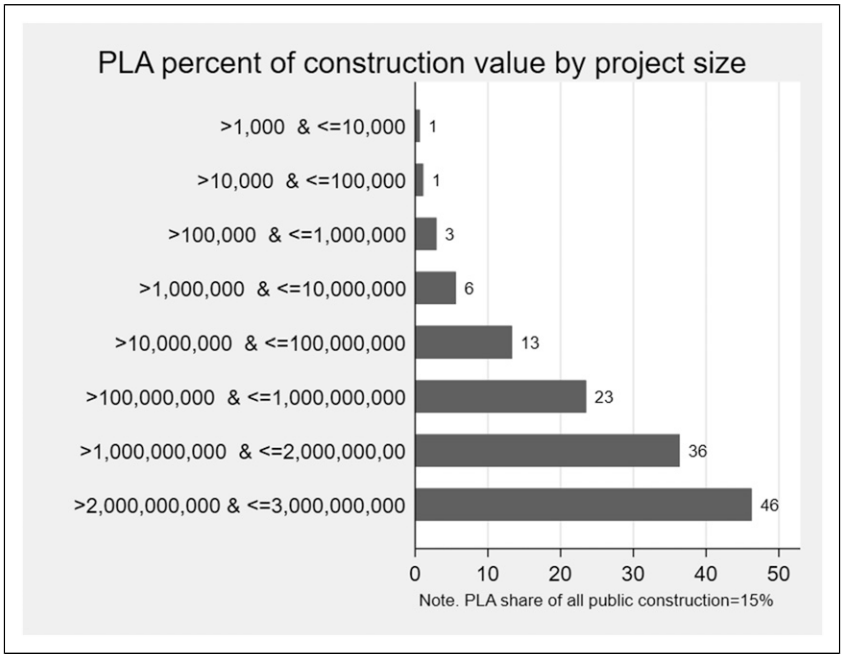

Figure 2. PLA share of the total value of construction by project size.

Table 6. Share of Low-bid projects Among all projects Procured by Agency Size.

Total value of agency's projects	Mean percent use of traditional contracts
>0 & <$13 mil. (1–10th percentile)	92.2
>$13 mil. & <$52 mil. (10th to 25th)	91.6
>$52 mil. & <$170 mil. (25th to 50th)	92.4
>$170 mil. & <$490 mil. (50th to 75th)	87.0
>$490 mil. & <1.4 bil. (75th to 90th)	90.6
>1.4 bil. (90th+)	81.1
Total	89.5

Predicting the Use of Specific Procurement Methods

We now turn from descriptive statistics to modeling procurement practices using logistic regressions. We will see that a procurement agency's book of work and the number of contracts let in a given year are associated with the choice of contract arrangements. The local economic and political context also influences contract approaches but to a lesser extent. We also see that larger projects are less likely to be traditional contracts or job-orders and more likely to be leased-back, design-build, and

PLA arrangements. Relative to traditional contracts, the presence of PLAs makes an association with design-build and job-orders more likely.

Of necessity, we limit our sample to projects where PLA status and procurement arrangements are reported. Table 7 contains exponentiated coefficients (odds ratios) from six separate logistic regressions predicting the use of a particular procurement practice. For each model, the outcome variable takes the value of 1 if the stated procurement practice was used and zero otherwise. Estimates on categorical variables rounded to 1.00 indicate relationships smaller than a 0.005 change in the probability of a particular procurement practice. These coefficients are not interpreted as they have little practical impact. However, coefficients on continuous variables (like project length) are reported with additional digits because those independent variables may increase by more than one unit, potentially leading to practically significant associations.

After discussing the first five models predicting each contract arrangement, including PLAs, we revisit the PLA regression (model 5) in the sixth model in Table 7, adding three additional variables—whether the project was procured through leased-back, job-order, or design-build contracts with traditional contracts being the omitted reference category. This allows us to test the extent to which PLAs are paired with non-traditional procurement arrangements using traditional procurement as the benchmark reference.

The first five models are divided into three sets of explanatory variables—1) agency, economic, regulatory, and political variables, 2) project size, and 3) economic sector. The sixth model adds procurement types as an additional category of variables. Project size and length-to-completion are data are estimates provided by the procurement agency at or near the start date of the project. All monetary values are expressed in 2023 dollars. We use the Case-Shiller Los Angeles and San Francisco housing price index to translate nominal dollar values to real 2023 dollars. (Federal Reserve Bank of St Louis, 2024)

Predicting the Procurement Method for a Project

Rows 1 through 3 in Table 7 look at expected project length, agency size, and how busy a procurement agency is in any given year. Row 1 in Table 7 shows that, controlling for the dollar value of projects, shorter projects were slightly more likely to be traditionally procured. In comparison, longer projects were more slightly likely to be job-order projects. While the average project duration is less than a year, it is important to note that many projects last hundreds of days, somewhat increasing the practical importance of these still small associations. In contrast, there is no statistically significant relationship between project length and leased-back, design-build, and PLA projects controlling for the other variables, most notably the expected value of the project.

Row 2 in Table 7 shows that larger procurement agencies were more likely to use traditional procurement, job-order, and PLA contracts and less likely to use leased-back and design-build. Big agencies will have many small projects favoring traditional and

Table 7. Logistic Regressions Estimating the Odds of Adopting a Specific Contract Type.

		Traditional (1)	Leased-back (2)	Job-order (3)	Design-build (4)	PLA 1 (5)	PLA 2 (6)
		Agency, economic, regulatory & political variables					
1	Estimated project days (in units of 100)	0.999***	0.998	1.001***	0.998	1.001	1.000
2	agency's total projects expenditures (in $ 100 million units)	1.002***	0.995***	1.001**	0.992***	1.017***	1.018***
3	agency's projects this year as a percent of the total of that agency's projects	0.633***	0.930	1.238***	3.168***	2.916***	2.43***
4	County median family income ($10,000)	0.920***	1.028	1.099***	0.973*	1.087***	1.06***
5	Annual GDP in project county (in $100-millions)	1.050***	0.943***	0.953***	0.970***	1.228***	1.23***
6	County unemployment rate in Jun	0.913***	0.965*	1.109***	0.992	0.970**	0.96***
7	Proposition 84 project with DIR labor compliance program	0.743**	0.365*	2.279***	0.974	6.833***	6.20***
8	County pct point spread Dem-Rep	0.999**	0.992***	1.001**	1.006***	1.028***	1.03***
9	>1,000 & <=10,000	Project size variables (reference)					
10	>10,000 & <=100,000	0.94***	1.47***	1.00	1.77***	1.59***	1.57***
11	>100,000 & <=1,000,000	0.65***	6.69***	1.15***	5.42***	4.56***	4.24***
12	>1,000,000 & <=10,000,000	0.41***	48.18***	0.99	11.08***	11.55***	10.84***
13	>10,000,000 & <=100,000,000	0.23***	155.6***	0.26***	29.20***	20.93***	20.22***
14	>100,000,000 & <=1,000,000,000	0.22***	134.6***	0.24***	57.44***	65.07***	59.59***
15	>1,000,000,000 & <=2,000,000,000	0.06***	236.9***	1.00	294.7***	49.6***	28.2***
16	>2,000,000,000 & <=3,000,000,000	0.05***	225.8***	1.13	172.5***	239.4***	167.8***
17	Schools	Sector of the economy variables (reference)					
18	Other	1.34***	0.11***	0.66***	1.64***	0.11***	0.13***
19	Community colleges	2.13***	0.13***	0.50***	0.86*	1.32***	1.34***

(continued)

Table 7. (continued)

		Traditional (1)	Leased-back (2)	Job-order (3)	Design-build (4)	PLA 1 (5)	PLA 2 (6)
		Agency, economic, regulatory & political variables					
20	universities	0.70***	0.05***	1.80***	1.30***	0.04***	0.03***
21	Cities	1.47***	0.21***	0.81***	0.78***	0.36***	0.39***
22	Counties	0.78***	0.10***	1.73***	0.73***	0.22***	0.18***
23	Transportation	2.61***	0.01***	0.63***	0.47***	0.02***	0.02***
24	Rail	0.32***	0.11**	10.10***	1.21	0.57*	0.34***
25	airports	0.24***	1.00	5.93***	2.79***	0.29***	0.20***
26	ports	0.21***	0.28***	7.27***	0.51*	1.73***	1.72***
27	Water/sewer/irrigation	0.78***	0.01***	1.83***	0.73***	0.35***	0.34***
28	Parks/recreation	1.97***	0.16***	0.55***	0.76**	1.91***	2.13***
29	Utilities	0.45***	0.04***	3.58***	0.88	0.29***	0.25***
30	Housing	2.48***	0.03***	0.57***	0.52***	0.14***	0.17***
31	traditional	Procurement method (reference)					
32	leased back						1.10
33	job order/task						3.15***
34	Design-build						1.87**
36	Constant	98.00***	0.01***	0.00***	0.00***	0.00***	0.00***
37	Observations	353169	351918	353147	353169	353169	348259
38	Pseudo R^2	0.045	0.324	0.046	0.102	0.227	0.230

Coefficients for start year are estimated but not reported.
Exponentiated coefficients.
*$p < .05$, **$p < .01$, ***$p < .001$.

job-order contracts. However, big agencies were also more likely to use PLAs. For every $100 million increase in an agency's total book of work between 2012 and 2023, that agency was 1.7 percent more likely to use a PLA on any given project (controlling for other factors). This suggests that bigger procurement agencies are used to, or more inclined to, use PLAs controlling for the size of projects, among other factors.

Row 3 shows that if the project starts in a busy year for the procurement agency (measured by that year's work as a percent of the agency's total book of work), then the agency is more likely to use job-orders, design-build, and PLA contracts and 36.7 percent less likely (63.3 percent as likely) to use traditional arrangements. In contrast, a one percent increase in this year's share of the agency's total book of work makes both design-build and PLAs about three times more likely for any given project that year. This hypothetical one percent increase makes job order procurement about 24 percent more likely. In short, busy years encourage alternative procurement methods other than leased-back arrangements while making traditional procurement substantially less likely.

In sum, the size and activity of procurement agencies influence the contract arrangements chosen. Controlling for estimated cost of projects and other factors, shorter projects in busy years procured by larger agencies are more likely to use traditional contract arrangements. Longer projects procured in busy years by larger agencies are more likely to be job-order projects. Busy years make job-order, design-build, and PLA arrangements more likely and traditional contracts less likely. Larger agencies are more likely to use traditional contracts for any given project and more likely to use job-orders and PLAs. These larger agencies, with larger books of work, are less likely to use leased-back and design-build contracts. Thus, while traditional contracts dominate public procurement, agency size and the press of work in any given year influence the use of alternative contractual arrangements.

Rows 4 through 8 in Table 7 examine economic and political/regulatory factors. A positive economic climate (higher family income, higher county growth rates, lower county unemployment) is associated with the use of PLAs, but the relation of economic factors with other contractual relationships is mixed. The association of the local political climate with contractual relationships links liberal politics with design-build and PLAs contracts and more conservative politics with leased-back—also known as public-private partnerships—arrangements. Democratic-leaning counties on projects with labor compliance programs are less likely to use leased-back contracts and more likely to use job-order and PLA arrangements.

In row 4, the higher the median family income in the county where the project occurred, the less likely the procurement agency is to use traditional and design-build procurement but more likely to use job orders and PLAs. The traditional approach has a reputation for obtaining low-start prices. A preference for traditional procurement may reflect greater budgetary restrictions in poorer counties or a price rather than value focus by the agency. For each $10,000 increase in median household income, the probability of a project being a PLA increases by 9%.

Row 5 in Table 7 indicates that counties with larger economies (measured by annual real county GDP) are more likely to use traditional procurement and PLAs but less likely to use other non-traditional procurement methods. This is not an income effect, which is controlled for by the median family income variable; this is a construction activity effect. Larger economies may have more projects and disproportionately more smaller projects relative to smaller county economies.

Row 6 of Table 7 captures the business cycle using the county's annual June unemployment rate. By June, construction is in full swing so a relatively high unemployment rate in any given June indicates slack economic conditions. Such conditions are associated with fewer contracts of any type except job orders. Because job-order contracts are unattached to any specific job, this may indicate that slack economic periods do not deter the notional letting of a set of small jobs strung out over time.

Row 7 of Table 7 shows the effect of a special regulation that applies primarily to water projects but sometimes can be found in several sectors of the economy. The California DIR Labor Compliance Program requires the procurement agency to have a program that assists in enforcing California labor laws, including worksite safety and

prevailing wage regulations. Agencies letting these jobs are less likely to use traditional, lease-back, or design-build procurement and more likely to use job-orders and PLAs. Procurement agencies are more likely to use PLAs because PLAs have wage and often safety provisions that harmonize with Labor Compliance Programs. This may explain the sixfold increase in the probability of a PLA associated with these Labor Compliance Programs. Agencies may be more likely to use job-order contracts because they establish a long-term relationship between the agency and a specific contractor. That may provide the time and opportunity to establish and ensure the implementation of a Labor Compliance Program.

Row 8 of Table 7 examines the effects of politics on the adoption of procurement methods. This variable measures the percentage-point spread between the percentage of registered voters who are registered Democrats and the percentage of voters who are Republicans in a county in 2020. For each percentage-point increase in the difference between the Democratic percent of registered voters relative to the percent of Republican registered voters, the local procurement agency is less likely to use leased-back procurement and more likely to use design-build and PLAs. While the coefficients for the traditional and job-order procurement models are significant, they are small in magnitude. In short, more liberal counties are less likely to see leased-back projects and more likely to see design-build and PLAs.

Leased-back (also known as public-private partnerships) and PLA arrangements are controversial procurement practices. In our data, public procurement agencies in more conservative counties look favorably at private-business-focused leased-back arrangements. Procurement agencies in more liberal countries look more favorably at design-build and PLAs, which promise a more cooperative relationship between owners and contractors. Both procurement practices can be appropriate and useful, but our data show that the political climate tends to favor using one or the other.

Indeed, in our data, leased-back projects are rarely also PLA projects despite having similar mean expected costs, see Table 8. The mean expected cost of PLA projects that are not leased-back projects was $10.8 million, while the mean expected cost of leased-back/public-private-partnership projects that were not PLA jobs was $10.7 million. In both cases, the envisioned costs were almost ten times greater than the average project in our data, yet these arrangements are rarely combined.

Table 8. Number and Mean Value of Leased-back projects by PLA Status.

	PLA status	
	Non-PLA	PLA
Not leased-back projects	438,617	8624
Mean estimated cost (2023$)	$1,223,830	**$10,862,489**
Leased-back/PPP projects	2912	272
Mean estimated cost (2023$)	**$10,746,834**	$18,615,134

Only when we find projects almost double the average size of these nearly mutually exclusive approaches do we find PLAs and leased-back paired together. None of this speaks to the efficacy of each approach in public works procurement nor to the benefits of pairing these approaches. Still, clearly, political climate influences how agencies see the relative usefulness of the two approaches.

Size Matters but Differently for Different Procurement Methods

Rows 9 through 16 in 8 examine the association of project size to the probability that a project will have a particular procurement contract applied to it. The probability that a project would be traditional or job-order falls quickly as the project gets larger, while the probability that a project would be leased-back, design-build, or a PLA rises as the project's expected cost rises. Figure 3 illustrates the comparison of these changes in terms of odds ratios.

The two procurement types with falling odds of adoption with project size—traditional and job-order—are traced in the left panel of Figure 3. The odds of a low-bid contract monotonically fall once expected project costs exceed $100,000. This is also true for job-orders when only statistically significant estimates are considered. With projects above $1 billion, the odds the project would be traditionally procured are very low. In contrast, as the expected project cost rises, the odds that a project would be let through leased-back, design-build, and/or PLA arrangements rise sharply. So, size matters in a tradeoff between traditional and job-order procedures.

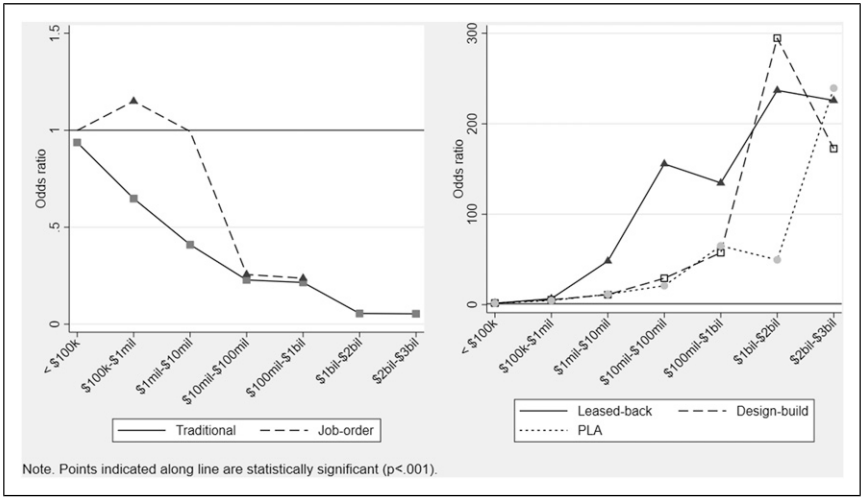

Figure 3. Odds ratio of how a project is procured based on the expected cost of the project.

Rows 17-30 of Table 7 control for different types of public projects. Relative to schools (the reference) and controlling for the other variables in the models, community colleges but not universities; cities but not counties; and transportation but not rail; are more likely to use traditional procurement. Airports and seaports are less likely to use traditional procurement, while parks and public housing are more likely to use traditional procurement. Finally, utilities and water/sewer/irrigation are less likely than schools to use traditional procurement.

While each of these types of construction can aggregate disparate projects, it appears that simpler construction activities lean towards the traditional approach relative to the benchmark of public schools. In contrast, more complicated projects, such as airports, seaports, rail, sewer, and water facilities, lean towards alternative procurement methods. Universities may have more complicated construction compared to community colleges. Public housing and parks may have simpler construction projects than public school construction. Thus, as a rough rule, traditional procurement is applied not only to smaller projects but also to simpler ones, while larger projects have a higher probability of using alternative procurement methods.

Public schools use PLAs relatively often. Compared to schools, most project types are less likely to use PLAs (controlling for other factors, notably size). However, community colleges, seaports, and parks are 1.3 to 1.9 times more likely to use PLAs than schools. This may reflect the use of PLAs as community workforce agreements providing local employment. (Port of Oakland, 2020; Port of Long Beach, 2023)

Pairing Procurement Method with PLAs

The model in column 6 of Table 7 is substantially similar in specification and results compared to column 5 in predicting whether a project is a PLA. But model 6 adds three variables indicating whether the project is a leased-back, job-order, or design-build project. These estimates are relative to the reference category of traditional procurement. Relative to traditional bidding, design-build projects are 1.9 times more likely to be PLA projects, and job-order projects are 3.1 times more likely to be combined with a PLA. Leased-back projects are no more likely than low-bid projects to be PLAs. While PLAs can be used with all four mutually exclusive procurement arrangements, design-build and job-order projects are substantially more likely to be combined with PLAs. These pairings are independent of the project's size, the procurement agency's size, and the other factors in the model.

Conclusion

Project labor agreements are not common in California public construction—just 2 percent of all projects—but because PLAs are large, they account for 15 percent of all public works. And PLAs account for from one-third to one-half the value of really big projects, over $1 billion.

So, who uses project labor agreements on public works in California? As projects get larger, PLAs become more common. If job-orders or design-build arrangements are

used to procure a project, it is more likely to be paired with a PLA. But, if the non-traditional approach is a leased-back job, PLAs are no more likely than if the job were a traditionally procured project. PLAs are more likely if the procurement agency is large, and especially if the agency is relatively busy with work that year. This may reflect the potential for PLAs to deliver skilled and qualified workers during periods of local labor scarcity. The probability that a project will be a PLA is greater in wealthier counties with larger economies. This may reflect prioritizing construction quality and delivery over the lowest possible start price in these counties.

Conservative political climates in the project's county favor leased-back arrangements, while liberal climates lean towards PLAs. Only on very big projects do we find leased-back and PLAs paired. Public procurement agencies in more conservative counties slightly favor the use of the traditional approach, while more liberal counties look more favorably at the use of job-orders. Still, political orientation is not a strong driver of the choice of procurement method. Project size, agency size, and how busy an agency is in a year are more important drivers of procurement arrangements.

There is no one-size-fits-all approach to public procurement of construction services. Procurement strategies are adapted to a range of construction challenges. In California, PLAs are adapted to larger, more complicated, and longer projects. This study does not directly address the potential workforce development dimensions of PLAs. However, because of their size, PLAs on larger and longer projects are consistent with the community workforce agreement style PLAs aimed at improving local labor market outcomes for local or disadvantaged workers and securing skilled construction labor when otherwise not forthcoming.

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Note

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