

## ***A Critical Review of Measuring the Cost of Project Labor Agreements on School Construction in California***

An association of anti-union contractors is set to release a report this morning that attempts to discredit Project Labor Agreements (PLAs) but instead confirms previous research documenting that PLAs do not create additional cost for school construction. The report's authors, Vince Vasquez, W. Erik Bruvold and Dr. Dale Glaser – funded by the Associated Builders and Contractors (ABC) – do not accurately represent the factors that contribute to school construction costs and have a biased sample that does not represent California school projects. The inferences of the study to all school PLAs are not statistically valid.

Dr. Dale Belman of Michigan State University's School of Labor & Industrial Relations, a well-known expert in the field of economics and Project Labor Agreements, was frequently cited in the study. [He reviewed the study and wrote to the authors:](#)

*“Although your study has several serious statistical issues, at the end of the day, your results are basically consistent with those presented in my article on PLAs and Massachusetts school construction costs. The take-away from your results can be summarized as follows: When appropriate controls are included for differences in the characteristics of schools built including school type and location, building specifications, materials used etc., there is no statistical evidence that PLA schools are more costly compared to non PLA schools.”*

### **SPURIOUS CAUSATION**

From Public Records Act requests, the authors found that actual school construction costs were at an average over 20% higher than what contractors bid. This was because of change orders, where contractors were charging schools after the work was already bid, sometimes for faulty work. Since this result was embarrassing to the sponsoring contractors, the ABC study has cherry-picked only those variables that suited its narrative. It has omitted significant factors that influence construction costs from the econometric model. Here are some examples of omissions:

1. Wages: The ABC study considers wage rates as a “neutral factor” implying that wages are not included in describing construction costs. However, California is a large state with a significant variation in prevailing wages between regions. Urban areas like Los Angeles have higher prevailing wages, as well as a higher number of PLA projects. For example, the basic hourly wage for a wireman electrician in Fresno is \$32.85, under California prevailing wage law, and \$36.65 in San Diego. In Del Norte county, the same classification of worker, whether union or non-union, on a school construction project, is paid \$46 an hour. This variation alone can explain a significant part of the fluctuation in costs.

2. School location: The ABC study ignores local building conditions, such as land costs, weather, materials supply and fuel costs, and requirements from local building codes. These factors alone account for a significant variation in building construction costs. According to Reed Construction Data, one of the most cited sources in construction costs in the nation, the construction costs for an elementary school in San Francisco in 2009 were \$189.33 per square

foot, which was 18% higher than the cost of school construction in San Diego, which was \$160.21 per square foot.

3. Development Regulations: School buildings in the 2000s were required by law to be safer and greener than a decade ago. Yet, the study freezes the regulatory framework over a large period in time between 1996-2008, as if state and local regulations did not change over 12 years. This is a fundamentally flawed assumption, as there were significant changes in the California Environmental Quality Act (CEQA), Public Contract Code and California Building Code during this period. For example, soil contamination, is a major factor adding time and expense to new school projects. In addition, California schools have to adhere to Title 24 (Field Act) requirements on seismic standards. A recent Division of State Architect study showed that Field Act compliance alone added about 4 percent to the cost of a new school. Significant revisions in CEQA statute and case-law have driven repeated re-siting of school projects recently, which has nothing to do with PLA.

In statistics, a spurious relationship is when two events that have no relationship are wrongly inferred that one causes the other. For example, on a hot day, there are a lot of ice-cream sales, as well as power outages. To infer that ice-cream sales cause power outages is a false interpretation of the data. In reality, complex projects in urban areas are more expensive, and also more likely to benefit from PLAs. Therefore, to infer that PLAs cause increased costs, is a spurious relationship.

## **SAMPLE BIAS**

Since the study was sponsored by an organization that wants to ban PLAs, there is a valid reason to scrutinize the projects sampled, and responsive school districts. In a typical statistical analysis there is a random draw of equally probable projects within the relevant universe. This did not happen with this analysis. Here is how the sample is biased:

1. Apples, oranges and watermelons: This is not an apples-to-apples comparison within a homogenous universe. Newer projects were built under different state regulations than older ones. With the exception of Los Angeles, all the PLAs in the ABC study were approved in 2000s. San Diego Unified PLA was approved in 2009, which is outside the timeline of the study, so it is strange that it is even included. Could one possible explanation for an over-sampling of San Diego and Sacramento regions be that there are efforts to ban PLAs in these areas by the study sponsor?

2. The Caveman Effect: Looking for paintings only in caves, will lead one to conclude that all paintings are in caves. The Public Records Act requests ostensibly got a 50% response. However, the PLAs received are from only 9 out of 29 jurisdictions (31%) that have adopted them. This implies that there may have been a bias in follow-up, with certain jurisdictions emphasized over others. It is unclear whether 65 PLA projects constitute a sample large enough to draw generalized conclusions about PLA projects in California.

3. Self-selection Bias: School districts, like LAUSD, that have actually tracked detailed information on costs are more likely to respond than others. There are two scenarios for non-respondents that would bias the results:

a. Those that had a PLA, but did not want public exposure: this is especially the case if the person inquiring about PLAs was politically involved in a public fashion, or associated with an organization that was openly hostile to PLAs.

b. Those that did not have a PLA, and did not want to expose costly projects. Since the authors openly advocate for “efficiency”, it is extremely likely that school districts that had expensive non-PLA projects, were more likely not to respond. They were also likely to drop out (attrition bias) even if they responded initially, after they computed their costs, and found them to be excessive.

The only way to know whether there was a selection bias was to calibrate the variables in the sample, with the values statewide. However, the authors present no evidence to suggest that the projects sampled actually represent the cross-section of characteristics in school construction statewide. Since the published sources from McGraw-Hill only cover bid values, and not change orders, it is impossible to verify the authors’ claims on actual costs. The authors’ own analysis of 65 matched schools with and without a PLA failed to find any statistically significant relationship. Hence the study has no external validity.

### **INCONGRUENT WITH EMPIRICAL DATA**

PLAs have been used increasingly in the private sector by major businesses like Toyota and WalMart, with a record of on-time on-budget completions, with quality construction. PLAs have also established a significant value to public agencies, the community and taxpayers. For example, the San Diego Unified School District’s Project Stabilization Agreement – a PLA negotiated in 2009 –has been highly successful despite the economically-challenging environment. To date, the district has saved 40% of the budgeted costs on the career technical education facilities built under the agreement – a savings in excess of \$8 million already.

### **POLITICALLY MOTIVATED STUDY**

The ABC is currently collecting signatures for a ballot measure to ban PLAs within the cities of San Diego and Sacramento, in California. That effort has come under increased scrutiny, as San Diego CityBeat exposed that the paid signature gathers were using misleading and false statements about the initiative.

This ABC-funded study is politically motivated to further mislead the public about the value of PLAs.