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Response to Remington

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The *JAPA* autumn '02 issue contains a comment by Roger Remington, which expands in a useful manner on our article "Underestimating Costs in Public Works Projects: Error or Lie?", published in the summer issue. We agree with and welcome most of what Remington writes, including that the headline in the (London) *Sunday Times* (July 7, 2002), stating that it is contractors in particular who are to blame for budget overruns, is not warranted by the content of our article. The coverage of the article in the *New York Times* ("Study Finds Steady Overruns in Public Projects," July 11, 2002) is more balanced and to the point. Here economic forecasters and planners are correctly identified as a main source of cost underestimation, as they are in our article and in Remington's comment.

We disagree with Remington, however, that the cost estimates of planners, consultants, and advisors are unrealistic mainly because of the low level of detail available at the crucial early decision-making points in the life of a project. We also disagree that if only clients realized, in Remington's words, "that it costs money to gather the detailed information required for more accurate forecasts" and if clients were willing to spend that money, then the problem with cost underestimation might be solved. This is the type of explanation of cost underestimation which we call "technical" in our article. And we reject this type of explanation with very high statistical certainty. The data simply do not support such explanations; the data are too biased. If Remington were right, on average the cost estimates would be more or less correct, only with large fluctuations. Remington would need to explain why in almost 9 out of 10 projects does the low level of detail, which he identifies as the main cause of inaccuracy, lead to cost UNDERestimation? Why would

there not be more instances of cost OVERestimation? The burden of proof is on Remington and other proponents of technical explanations. The statistics of the matter indicate that it will be very difficult to lift this burden. Political and economic explanations of cost underestimation account better for the data, as we show in the article.

Still, we agree with Remington that the type of more detailed cost estimates he advocates are desirable and would be a step in the right direction as regards accuracy. We hold, however, that such estimates are unlikely to materialize in large numbers if they are not supported by institutional checks and balances that would curb the political and economic incentives that exist today for underestimating costs with a view to getting projects built. Such checks and balances can be implemented through the type of target cost contracting Remington advocates, which we agree is desirable, or by design-build contracts and similar set-ups, which emphasize accountability and which we develop further in a recent book (*Megaprojects and Risk*, Cambridge, 2003).

Remington states that he does not find the article's conclusions remarkable, except for the conclusion that for 70 years planners do not appear to have developed better practices of cost estimation. We, too, find the 70 years of malpractice in cost estimation to be the most striking, and most disturbing, of our results. And if Remington thinks it is not remarkable or new to learn that cost underestimation and overrun exist in public works projects, we agree. We want to point out, however, that it is one thing to hold the common knowledge that cost overrun exists; it is quite another to establish reliably, as we do in our study, the size of overrun, how it varies across project types, geographical areas, historical periods, etc. This has not been done before for transportation infrastructure projects. We all know public works projects tend to have cost overruns. But we did not know, for instance, that cost overrun for rail projects are on average 45 percent, while road projects are significantly different with an average overrun of 20 percent. Such figures make possible for the first time statistically valid assessment of cost risks, which is the first step to better information to the public and to improved financial risk management. The results also make possible valid benchmarking of cost overrun in individual projects, as has been done for Boston's Big Dig ("Big Dig Overrun Is Just Plain Big," *Boston Globe*, July 14, 2002) and the Copenhagen metro (Auditor General of Denmark). This, then, is our intended

contribution to practical planning: to make better financial risk assessment and management of large public works projects possible, and to make better information about risk available to the general public. Theoretically, we aim to contribute to theories of lying in policy and planning, and to planning ethics in the tradition of earlier studies carried out in this field, for instance by Martin Wachs.