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Measuring Public Civil Engineering Output Prices Based on Bidding Data in Japan, 1989–2021

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Abstract

This paper develops the monthly estimates on the successful bid rate based on the Japanese bidding data from 1989, when the competitive bidding system was introduced, to 2021. Using these estimates, we evaluate revisions to the input-cost-type output price used in the Japanese system of national accounts. As for the annual price index for public civil engineering as a whole, the growth of the current price index based on the input method (“Construction Cost Deflators”) has increased by 36.3% over the entire measurement period of this paper (33 years), while the growth of price index adjusted for bidding rate is 26.9%. It suggests that the promotion of competition through the introduction of the bidding system contributed to Japan's long-term decline in the prices of public civil engineering. In particular, the deviation has become larger due to the impact of intensified price competition since the mid-2000s. Based on the adjusted price index measured in this paper, the current estimate of real net capital stock of the entire public civil engineering is assessed to be underestimated by 3.5% (19.0 trillion yen at the current price) as of the end of 2020.

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