A Measurement for Bank Productivity and its Impact on the Performance of Client Firms*

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Abstract

This paper proposes one measurement for bank productivity and studies its correlation with the performance of their client firms. Unlike the extant literature indirectly measuring the efficiency of banks through, for example, Data Envelopment Analysis (DEA), we use the risk-adjusted profit of an individual bank, which is considered as output in a modified version of FISIM (Financial Intermediation Services Indirectly Measured) concept, per its operating cost as a direct measurement of bank-level productivity. By combining this productivity panel-data with the wide varieties of bank and firm characteristics as well as the loan relationship data between Japanese listed companies and banks over the last three decades, we quantify how the productivity of incumbent banks are correlated with their client firms capital investment ratio. We hypothesize and empirically establish that the sensitivity of investment ratio with respect to investment opportunities, which could reflect firms' financial availability, is positively correlated with their incumbent banks' productivity. In order to discuss the consequences of such an improvement in firms' financial availability and investment flexibility originated from the relationships with productive banks, we also quantify the correlation between the incumbent banks' productivity and firms' ex-post ROA and the probability for the firms to become "zombie firms". We empirically establish that both of those firm performance measures, which generically reflect firm's own characteristics, have statistically significant interactions with the bank performance measure.

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