Automated Teller Machines and Point-of-Sale Terminals: Cross-Country Panel Evidence on the Association with Economic Growth

Aumit Ahsan
University of Dhaka, Bangladesh

Sayon Zaman Kalpo
University of Dhaka, Bangladesh

Rafid Tahsin
University of Dhaka, Bangladesh

Abstract:
This paper examines how the growth of automated teller machine (ATM) and point-of-sale (POS) networks relates to economic growth. The panel covers 22 member countries of the Committee on Payments and Market Infrastructures from 2013 to 2024. Payment infrastructure has expanded quickly across developing economies, and several governments, Bangladesh among them, have pushed ATM and POS networks into semi-urban and rural areas expecting economic returns, although cross-country evidence for those returns is thin. Using random-effects panel estimation with controls for consumer price index inflation, growth in gender-disaggregated life expectancy, population growth and the change in industry value added as a share of GDP, the paper finds ATM growth and POS growth each significantly associated with GDP growth at the 1% level. The ATM result holds when foreign direct investment, gross capital formation, bank branch growth and broadband growth are added as further controls, and it survives winsorization at two percentile bounds, with the point estimate falling between 0.0616 and 0.1122. In the lagged specifications, neither variable is significant at one or three years, so the paper reports an association whose direction cannot be established from the data. It also documents card ownership and digital merchant payment use in Bangladesh well below comparable peer economies, and sets out what the panel evidence can and cannot support for payment system policy.

Keywords:
ATM networks, POS terminals, payment infrastructure, economic growth, panel data, CPMI, financial inclusion, Bangladesh.