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DYNAMICS OF PERFORMANCE AND TECHNOLOGY IN HIGHER EDUCATION: AN APPLIED STOCHASTIC MODEL AND A CASE STUDY

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Abstract

The purpose of this paper is to develop a stochastic-dynamic model of performance and technology in education sector and bring into light the presence, in a particular subset of the Turkish higher education sector, of stochastically-evolving equilibria moving towards a low performance trap over time. The dynamics of the movement in question hinges, in part, on two factors, namely, (1) the productivity growth and (2) student population growth. We formulate a stochastically-driven, technology-based policy option that could help the sector to escape the trap, moving the sector towards high performance equilibria. The proposed policy option illustrates that technological transformation in educational practices could solve a structural problem (a low performance trap) in developing-country education sectors.

Keywords: Education, universities, low performance trap, economic dimensions, technology, transformation, stochastic-dynamic models.

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1. Introduction

Education is unarguably one of the most important forms of investment shaping the modern economies in the twenty-first century. Skills, knowledge and capabilities (i.e., various dimensions of human capital) acquired or developed through education have been among the key determinants of the micro performance of economic actors, institutions and sectors as well as the macro performance of contemporary economies. Studies

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