

**AGE STRUCTURAL TRANSITIONS AND INFLATION  
DYNAMICS IN SELECTED SOUTH ASIAN  
COUNTRIES**

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Degree of Master of Science

Department of Mathematics

University of Moratuwa

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Dissertation submitted in partial fulfillment of the requirement for the  
degree Master of Science in Financial Mathematics

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## DECLARATION OF THE CANDIDATE & SUPERVISOR

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## ABSTRACT

The aim of this study is to find out whether there is significant effect from age structural transitions on inflation dynamics in some selected South Asian countries such as Sri Lanka, India and Bangladesh. It has been shown that the age structural transitions can disrupt macroeconomic equilibriums of countries, if unattended. Sri Lanka is facing a decreasing youth dependency ratio growth and increasing elderly dependency ratio growth phase as a result of age structural transitions. This poses serious concerns in terms of obvious factors such as health budget and social security payments to elders in future. In this thesis, I endeavor to study whether age structural transition has an implication on an important macroeconomic indicator which is inflation. A structural VAR model has been constructed to answer this issue. Elderly dependency ratio growth, youth dependency ratio growth, real interest rate and output gap growth are the selected variables from 2003 to 2018 for these models. Cholesky decomposition and structural decomposition used to check the robustness of the models. The empirical results showed that the growth of youth dependency ratio is inflationary for Sri Lanka. But for India and Bangladesh growth of youth dependency ratio does not have any significant effect on inflation. Growth of elderly dependency ratio does not have any significant effect on inflation for Sri Lanka, India and Bangladesh. But the magnitude of the impact from elderly and youth dependency ratio growth on inflation is around 5% over the period of 10 months as the variance decomposition reveals for Sri Lanka and for India and Bangladesh it is around 2%.

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## LIST OF ABBREVIATIONS

ADF	- Augmented Dickey Fuller
AR	- Autoregression
CPI	- Consumer Price Index
DEP1	- Youth Dependency ratio
DEP2	- Elderly Dependency Ratio
GDP	- Gross Domestic Product
GMM	- Generalized Method of Moments
IS	- Investment and Saving Equilibrium
KPSS	- Kwiatkowski Phillip Schmidt Shin
LCH	- Life Cycle Hypothesis
MA	- Moving Average
OECD	- Organization for Economic Co-operation and Development
OLS	- Ordinary Least Square
RR	- Real Interest Rate
SVAR	- Structural Vector Auto Regression
VAR	- Vector Auto Regression
VMA	- Vector Moving Average
WPI	- Wholesale Price Index
YGAP	- Output Gap

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