

**AN ANALYSIS OF INFLATION TARGETING AND ITS
MACROECONOMIC CONSEQUENCES**

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**DEPARTMENT OF MANAGEMENT STUDIES
INDIAN INSTITUTE OF TECHNOLOGY DELHI**

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by

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Department of Management Studies

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In Fulfilment of the Requirements for the Degree of Doctor of Philosophy

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ॐ नमः शिवाय

Certificate

This is to certify that the thesis entitled “**An Analysis of Inflation Targeting and Its Macroeconomic Consequences**” being submitted by **Ms. Akanksha Mishra** to Indian Institute of Technology Delhi for the award of the degree of **Doctor of Philosophy** is a record of original research work carried out by her. She has fulfilled the prerequisites for the submission of this thesis under my guidance and supervision, and to the best of my knowledge, she has met the required standard.

The results contained in this thesis have not been submitted, in part or full, to any other university or institute for the award of any degree or diploma.

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Akanksha Mishra

Abstract

Inflation targeting is a widely accepted monetary policy framework and currently, 39 economies are under an inflation targeting regime. However, there is ambiguity in the literature about the macroeconomic performance of inflation targeting. This thesis is an attempt to analyze the effect of inflation targeting on various macroeconomic variables. The first objective of the thesis is to estimate the impact of inflation targeting on the inflation rate and inflation volatility. Generally, central banks adopt the regime after they achieve significant disinflation. The new regime gains credibility since the central banks successfully meet the initial targets due to pre-inflation-targeting-disinflation. We identify the impact of inflation targeting using forward-looking dynamic panel data models in difference-in-difference framework using the data of 114 emerging, advanced and low-income economies. Our results show inflation targeting is successful in locking-in already low inflation instead of reducing the high inflation.

The second objective of the thesis is to compile macro-financial conditions index and analyze the impact of inflation targeting on the index and volatility of index in emerging market economies. Dynamic panel data models are used to analyze the dataset of 56 emerging market economies. The results suggest no adverse impact of inflation targeting on financial stability, whereas it may have significant positive spillover effects on foreign direct investment. The last objective of this thesis is to calculate the sacrifice ratio for disinflationary episodes and analyze the impact of inflation targeting on sacrifice ratios. The chapter analyzes the output cost of disinflation in emerging market economies using a dataset of 58 countries from 1979 to 2020. We find that quick disinflation when the inflation is at higher levels reduces the sacrifice ratio. The results suggest that inflation targeting emerging market economies face lower sacrifice ratios. We find that anchoring inflationary expectations, increase central bank credibility which result in reduced output cost of disinflation.

We have important suggestions for central banks that plan to adopt inflation targeting in the near future. First, they should achieve some pre-inflation-targeting-disinflation before adopting inflation targeting formally, as it will increase central bank credibility which helps anchor inflationary expectations. Second, we have not found any adverse impact of inflation targeting on financial stability. We suggest inflation targeting lite countries to adopt full-fledged inflation targeting regime. Lastly, we find that inflation targeting countries experience lower sacrifice ratios. Countries should make their central banking system strong and independent before implementing inflation targeting as it would further improve their output-inflation trade-off.

Keywords: Inflation Targeting, Inflation, Central Bank, Financial Stability, Treatment Effect, Sacrifice Ratio, Dynamic Panel Data Model

सारांश

मुद्रास्फीति लक्ष्यीकरण एक व्यापक रूप से स्वीकृत मौद्रिक नीति ढांचा है और वर्तमान में, 39 अर्थव्यवस्थाएं मुद्रास्फीति लक्ष्यीकरण व्यवस्था के अधीन हैं। हालांकि, मुद्रास्फीति लक्ष्यीकरण के व्यापक आर्थिक प्रदर्शन के बारे में साहित्य में अस्पष्टता है। यह थीसिस विभिन्न व्यापक आर्थिक चरों पर मुद्रास्फीति लक्ष्यीकरण के प्रभाव का विश्लेषण करने का एक प्रयास है। थीसिस का पहला उद्देश्य मुद्रास्फीति दर और मुद्रास्फीति की अस्थिरता पर मुद्रास्फीति लक्ष्यीकरण के प्रभाव का अनुमान लगाना है। यह देखा गया है कि अधिकांश केंद्रीय बैंक पहली बार पर्याप्त अवस्फीति प्राप्त करने के बाद ही मुद्रास्फीति लक्ष्यीकरण को अपनाते हैं। पूर्व-मुद्रास्फीति-लक्षित-विस्फीति के साथ, प्रारंभिक लक्ष्यों को सफलता के साथ पूरा किया जाता है और नई नीति को विश्वसनीयता प्राप्त होती है। 114 उभरती, उन्नत और निम्न-आय वाली अर्थव्यवस्थाओं के डेटा के साथ काम करते हुए, हम अंतर-में-अंतर ढांचे में दूरदेशी डायनामिक पैनेल डेटा मॉडल का उपयोग करके मुद्रास्फीति लक्ष्यीकरण के प्रभाव की पहचान करते हैं। हम पाते हैं कि मुद्रास्फीति लक्ष्यीकरण उच्च मुद्रास्फीति को कम करने के बजाय पहले से ही कम मुद्रास्फीति को लॉक-इन करने में सफल रहा है।

थीसिस का दूसरा उद्देश्य वित्तीय स्थिरता सूचकांकों को संकलित करना, उन सूचकांकों और उनकी अस्थिरता पर मुद्रास्फीति लक्ष्यीकरण के प्रभाव का उभरती बाजार अर्थव्यवस्थाओं में विश्लेषण करना है। डायनामिक पैनेल डेटा मॉडल का उपयोग 56 उभरती बाजार अर्थव्यवस्थाओं के डेटासेट का विश्लेषण करने के लिए किया गया है। परिणाम वित्तीय स्थिरता पर मुद्रास्फीति लक्ष्यीकरण का कोई प्रतिकूल प्रभाव नहीं होने का सुझाव देते हैं, जबकि इसका बाहरी क्षेत्र की स्थिरता पर महत्वपूर्ण सकारात्मक स्पिलओवर प्रभाव हो सकता है। इस थीसिस का अंतिम उद्देश्य अवस्फीति की घटनाओं के लिए बलिदान अनुपात की गणना करना और बलिदान अनुपात पर मुद्रास्फीति लक्ष्यीकरण के प्रभाव का विश्लेषण करना है। अध्याय 1979 से 2020 के दौरान 58 देशों के डेटासेट का उपयोग करते हुए उभरती बाजार अर्थव्यवस्थाओं में अवस्फीति की उत्पादन लागत का विश्लेषण करता है। हम पाते हैं कि जब

मुद्रास्फीति उच्च स्तर पर होती है तो त्वरित अवस्फीति बलिदान अनुपात को कम करती है। परिणाम बताते हैं कि उभरती बाजार अर्थव्यवस्थाएं जो लक्षित मुद्रास्फीति का पालन करती हैं, वह कम बलिदान अनुपात का सामना करती हैं। हम पाते हैं कि मुद्रास्फीति की उम्मीदों को स्थिर करते हुए, केंद्रीय बैंक की विश्वसनीयता में वृद्धि होती है जिसके परिणामस्वरूप अवस्फीति की उत्पादन लागत कम हो जाती है।

जो केंद्रीय बैंक निकट भविष्य में मुद्रास्फीति लक्ष्यीकरण को अपनाने की योजना बना रहे हैं उनके लिए हमारे पास महत्वपूर्ण सुझाव हैं। सबसे पहले, उन्हें औपचारिक रूप से मुद्रास्फीति लक्ष्यीकरण को अपनाने से पहले कुछ पूर्व-मुद्रास्फीति-लक्ष्यीकरण-विस्फीति प्राप्त करनी चाहिए क्योंकि इससे केंद्रीय बैंक की विश्वसनीयता बढ़ेगी जो मुद्रास्फीति की अपेक्षाओं को स्थिर करने में मदद करती है। दूसरा, हमें वित्तीय स्थिरता पर मुद्रास्फीति लक्ष्यीकरण का कोई प्रतिकूल प्रभाव नहीं मिला है। अंत में, हम पाते हैं कि मुद्रास्फीति लक्ष्यीकरण देश कम बलिदान अनुपात का अनुभव करते हैं और हम सुझाव देते हैं कि मुद्रास्फीति लक्ष्यीकरण को लागू करने से पहले, देशों को अपनी केंद्रीय बैंकिंग प्रणाली को मजबूत और स्वतंत्र बनाना चाहिए क्योंकि इससे उनके में बलिदान अनुपात सुधार होगा।

मुख्यशब्द: मुद्रास्फीति लक्ष्यीकरण, मुद्रास्फीति, केंद्रीय बैंक, वित्तीय स्थिरता, प्रबंधन प्रभाव, बलिदान अनुपात, डायनामिक पैनल डेटा मॉडल

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Abbreviations

ADC	Advanced Developed Countries
CAB	Current Account Balance
CBI	Central Bank Independence
DF	De Facto
D-GMM	Difference-Generalized Method of Moments
DJ	De Jure
EME	Emerging Market Economies
ESCI	External Sector Conditions Index
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
HFCE	Household Final Consumption Expenditure
IMF	International Monetary Fund
IT	Inflation Targeting
MFCI	Macro-Financial Conditions Index
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
S-GMM	System-Generalized Method of Moments
VAR	Vector Autoregression
VIF	Variance Inflation Factor