

**CAPITAL STRUCTURE SPEED OF ADJUSTMENT:
A COMPARATIVE STUDY OF INDIA AND CHINA**

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by

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CERTIFICATE

The thesis titled, “Capital Structure Speed of Adjustment: A Comparative Study of India and China”, being submitted by Ms. Yukti Bajaj to the Indian Institute of Technology Delhi, for the award of the degree of Doctor of Philosophy is a record of bonafide research work carried out by her. She has worked under our guidance and supervision and has fulfilled all the requirements for the submission of this thesis, which has attained the standard required for a Ph.D. degree at this institute. The results presented in this thesis have not been submitted elsewhere for the award of any degree or diploma.

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ABSTRACT

The dynamic trade-off theory entails the existence of a target capital structure and implies an adjustment towards the target in case of any deviation. The existence of the target capital structure and the adjustment towards it can be jointly tested by estimating the speed of adjustment.

The present study intends to investigate the dynamics of capital structure for listed firms in India and China. The scope of this study includes estimating the speed of capital structure adjustment considering macro-level factors; examining the impact of the economic state on the speed of adjustment; the influence of corporate governance quality and measures on leverage rebalancing; and lastly, probing the relationship between the speed of adjustment and firm performance.

The study analyses data of firms listed on the National Stock Exchange (NSE500) for India and the Shanghai Stock Exchange (SSE380) for China. The period for the analysis is 2009 to 2019. The standard partial adjustment mechanism is deployed for estimating the dynamic adjustment model. Secondary data used in the study is extracted from Bloomberg®, and World Development Indicators (by World Bank) databases. Further, the system generalized method of moments (SYS-GMM) estimation is deployed due to the use of short panel data.

The findings suggest that the Indian firms revert faster to their target leverage ratios as compared to the Chinese firms. Further, the inflation rate, bond market, and stock market development are significant factors impacting leverage in the case of India whereas stock market development and inflation significantly impact leverage in the case of China. Furthermore, the speed of adjustment is pro-cyclical for Indian firms and is countercyclical for Chinese firms.

Using an aggregate governance indicator, the findings suggest that the better the quality of governance, the faster the speed of adjustment in both economies. However, there are notable

differences in the findings for Indian and Chinese firms using the individual governance indicators. CEO-chairman duality and dividend pay-out ratio are significant factors impacting the speed of adjustment for Indian firms whereas board size, independence and pay-out ratio are significant factors impacting the speed of adjustment for Chinese firms. Additionally, the speed of adjustment positively impacts the firm performance of both Indian and Chinese firms. Based on the above findings, the following recommendations are made for practitioners. Financial managers should treat macro-level factors at par with the firm-level factors for financing decisions. A better understanding of the macro factors would facilitate the adoption of better financing strategies in the future. The expansionary or contractionary conditions of an economy should also concern the financial managers as these can alter the behaviour of investors, further influencing the financing decisions. Firms should improve their corporate governance quality and strive to reach the standard set by the regulators as it has a bearing on the financial leverage and its adjustments. It is in the best interests of the firms to converge towards their targets as doing so would lead them to achieve their most important financial goal, i.e., shareholders' wealth maximization.

Investors should regularly monitor the macro-level and corporate governance factors impacting capital structure to decide on investment in a firm's equity. They should also keep a close look at the capital structure rebalancing activities of the firms as leverage adjustments play a significant role in enhancing returns to the equity holders who have a residual claim on the profits of the firm.

Additionally, the policymakers should strive to provide a relatively stable economic environment wherein firms face lower adjustment costs and make necessary adjustments in the capital structure. They should regularly monitor the firms' corporate governance practices for strengthening the implementation of the corporate governance measures.

सार

विभिन्न स्रोतों के बीच फर्मों द्वारा वित्तपोषण का विकल्प, अर्थात् पूंजी संरचना निर्णय, मौजूदा अनुभवजन्य साहित्य में परस्पर विरोधी राय के साथ चुनौतीपूर्ण निर्णय हैं। प्रबंधकों को वित्तपोषण विकल्प चुनने का लक्ष्य रखना चाहिए जो मौजूदा शेयरधारकों के लिए सबसे मूल्यवान है क्योंकि किसी भी व्यवसाय का दीर्घकालिक विकास शेयरधारकों की संपत्ति बनाने की क्षमता पर निर्भर करता है (त्रिपाठी एट अल., 2018)। मोदिग्लिआनी और मिलर (जिसे आगे एमएम कहा जाता है) सिद्धांत ने कॉर्पोरेट वित्त में पूंजी संरचना की बुनियादी बातों का बीड़ा उठाया। एमएम सिद्धांत से, कई सिद्धांत उभरे हैं, हालांकि, ट्रेड- ऑफ़ और पेकिंग ऑर्डर सिद्धांत उनमें से महत्वपूर्ण सिद्धांत हैं। दोनों सिद्धांतों के पहले के संस्करण स्थिर थे यानी वे बताते हैं कि कैसे फर्म एक ही अवधि में अपनी पूंजी संरचना निर्धारित करते हैं। फिर भी, फर्म वर्तमान में अत्यधिक अशांत वातावरण में काम करते हैं जो कॉर्पोरेट वित्तपोषण निर्णयों में लचीलेपन की मांग करता है। पिछला शोध स्थिर सिद्धांतों द्वारा समर्थित वित्तीय निर्णयों में लचीलेपन की अनुपस्थिति को इंगित करता है। इसलिए, डायनामिक पूंजी संरचना सिद्धांत उभरे जो बहु-अवधि के संदर्भ में पूंजी संरचना निर्णयों का पता लगाते हैं।

डायनामिक ट्रेड- ऑफ़ सिद्धांत लक्ष्य पूंजी संरचना के अस्तित्व पर जोर देता है और किसी भी विचलन के मामले में लक्ष्य के प्रति समायोजन की तरफ संकेत करता है। लक्ष्य पूंजी संरचना के अस्तित्व और उसके प्रति समायोजन की गति के अनुमान को संयुक्त रूप से परखा जा सकता है। समायोजन की गति वह दर है जिस पर प्रत्येक अवधि में फर्मों द्वारा लक्ष्य से विचलन को हटा दिया जाता है।

इस अध्ययन ने विशेष रूप से एमर्जिंग देशों में पूंजी संरचना की डायनामिक्स पर व्यापक आर्थिक स्थितियों और कॉर्पोरेट प्रशासन के प्रभाव की खोज करने वाले सीमित साहित्य की पहचान की। इसके अलावा, इस क्षेत्र में मौजूदा शोध या तो समायोजन की गति का अनुमान लगाता है या यह बताता है कि कई कारक उसी को प्रभावित करते हैं। तथापि, किसी अन्य महत्वपूर्ण वित्तीय पहलू पर समायोजन की गति का प्रभाव नगण्य है।

उपर्युक्त कमियों के आलोक में, वर्तमान अध्ययन का उद्देश्य भारत और चीन में सूचीबद्ध फर्मों के लिए पूंजी संरचना की गतिशीलता की जांच करना है। तुलना के लिए भारत और चीन को चुनने के कारण हैं; सबसे पहले, वे शीर्ष दो एमर्जिंग देश होने के साथ-साथ दुनिया में सबसे तेजी से बढ़ती एशियाई अर्थव्यवस्थाओं के रूप में खड़े हैं। दूसरे, दोनों देशों में न केवल बहुत बड़ी आबादी है बल्कि समान जनसांख्यिकी भी साझा करते हैं। तीसरा, वे समकालीन प्रतिद्वंद्वी हैं और अंत में, वे कुछ लोकप्रिय एशियाई निवेश विकल्पों में से एक हैं।

इस अध्ययन के दायरे में शामिल हैं; मैक्रो-स्तरीय कारकों यानी इन्फ्लेशन, बांड बाजार में विकास और शेयर बाजार में विकास को ध्यान में रखते हुए हुए पूंजी संरचना समायोजन की गति का अनुमान लगाना; समायोजन की गति पर आर्थिक स्थिति (या व्यापक आर्थिक स्थिति) के प्रभाव की जांच करना; कॉर्पोरेट गवर्नेंस की गुणवत्ता और कारकों का पूंजी संरचना समायोजन पर प्रभाव; अंत में, समायोजन की गति और फर्म के वित्तीय प्रदर्शन के बीच संबंधों की जांच।

यह अध्ययन भारत के लिए नेशनल स्टॉक एक्सचेंज (एनएसई500) सूचीबद्ध फर्मों और चीन के लिए शंघाई स्टॉक एक्सचेंज (एसएसई380) सूचीबद्ध फर्मों का उपयोग सभी उद्देश्यों की अनुभवजन्य जांच करने के लिए करता है। विश्लेषण की अवधि 2009 से 2019 है। डायनामिक समायोजन मॉडल के आकलन के लिए मानक आंशिक समायोजन मॉडल का इस्तेमाल किया गया है। यह पूंजी संरचना गतिकी साहित्य में एक अच्छी तरह से स्वीकृत मॉडल है। इसके अलावा, अध्ययन द्वितीयक (सेकेंडरी) डेटा पर आधारित है जिसमें विभिन्न लेखाशास्त्र, बाजार, कॉर्पोरेट गवर्नेंस और मैक्रो-आर्थिक चर का उपयोग किया जाता है। इनके लिए डेटा ब्लूमबर्ग®, और वर्ल्ड डेवलपमेंट इंडिकेटर्स (वर्ल्ड बैंक) डेटाबेस से निकाला जाता है। चूंकि अध्ययन लघु पैनल डेटा का उपयोग करता है, इसलिए सिस्टम जनरलाइज़्ड मेथड ऑफ मोमेंट्स (SYS-GMM) आकलन का इस्तेमाल किया गया है। अंतर्जाति मुद्दों से निपटने के लिए यह एक उपयुक्त आकलन पद्धति है।

निष्कर्ष बताते हैं कि चीनी फर्मों की तुलना में भारतीय फर्मों अपने लक्षित लीवरेज अनुपात में तेजी से लौटती हैं। इसके अलावा, इन्फ्लेशन, बांड बाजार में विकास और शेयर बाजार में विकास भारत के मामले में लीवरेज को प्रभावित करने वाले महत्वपूर्ण कारक हैं जबकि शेयर बाजार में विकास और इन्फ्लेशन चीन के मामले में लीवरेज को महत्वपूर्ण रूप से प्रभावित करते हैं। इसके अलावा, समायोजन की गति भारतीय फर्मों के लिए प्रो-साइक्लिकल है यानी, वे खराब स्थिति की तुलना में अर्थव्यवस्था की अच्छी स्थिति के दौरान तेजी से समायोजन प्रदर्शित करती हैं। इसके विपरीत, यह चीनी फर्मों के लिए प्रतिचक्रीय है।

कॉर्पोरेट गवर्नेंस की गुणवत्ता का उपयोग करते हुए, निष्कर्ष बताते हैं कि कॉर्पोरेट गवर्नेंस की गुणवत्ता जितनी बेहतर होगी, दोनों देशों के फर्मों में समायोजन की गति उतनी ही तेज होगी। हालांकि, व्यक्तिगत कॉर्पोरेट गवर्नेंस कारकों का उपयोग करने वाली भारतीय और चीनी फर्मों के निष्कर्षों में उल्लेखनीय अंतर हैं। सीईओ-अध्यक्ष डुअलिटी और लाभांश भुगतान अनुपात भारतीय फर्मों के लिए समायोजन की गति को प्रभावित करने वाले महत्वपूर्ण कारक हैं जबकि बोर्ड का आकार, स्वतंत्रता और भुगतान अनुपात चीनी फर्मों के समायोजन की गति को प्रभावित करने वाले महत्वपूर्ण कारक हैं।

इसके अतिरिक्त, समायोजन की गति भारतीय और चीनी दोनों फर्मों के फर्म के प्रदर्शन को सकारात्मक रूप से प्रभावित करती है।

उपरोक्त निष्कर्षों के आधार पर, अध्ययन कॉर्पोरेट वित्त के क्षेत्र में उद्योग व्यवसायी के लिए निम्नलिखित सुझाव प्रस्तुत करता है। वित्तीय प्रबंधकों को वित्तीय निर्णयों के लिए फर्म-स्तरीय कारकों के समान मैक्रो-स्तरीय कारकों बराबर मूल्य में समझना चाहिए। मैक्रो कारकों की बेहतर समझ भविष्य में बेहतर वित्तपोषण रणनीतियों को अपनाने की सुविधा प्रदान करेगी। एक देश की विस्तारवादी या संकुचनकारी स्थितियों को वित्तीय प्रबंधकों से भी संबंधित होना चाहिए क्योंकि ये वित्तीय निर्णयों को प्रभावित करने वाले निवेशकों के व्यवहार को और बदल सकते हैं। फर्मों को अपने कॉर्पोरेट प्रशासन की गुणवत्ता में सुधार करना चाहिए और नियामकों द्वारा निर्धारित मानक तक पहुंचने का प्रयास करना चाहिए क्योंकि इसका वित्तीय उत्तोलन और इसके समायोजन पर असर पड़ता है। यह फर्मों के सर्वोत्तम हित में है कि वे अपने लक्ष्यों की ओर एकाग्र हों क्योंकि ऐसा करने से वे अपने सबसे महत्वपूर्ण वित्तीय लक्ष्यों में से एक, यानी शेयरधारकों की संपत्ति को अधिकतम करने के लिए प्रेरित होंगे।

निवेशकों को फर्म की इक्विटी में निवेश के लिए निर्णय लेने के लिए पूंजी संरचना को प्रभावित करने वाले मैक्रो-लेवल और कॉर्पोरेट गवर्नेंस कारकों की नियमित रूप से निगरानी करनी चाहिए। उन्हें फर्मों की पूंजी संरचना पुनर्संतुलन गतिविधियों पर भी कड़ी नजर रखनी चाहिए क्योंकि लीवरेज समायोजन उन इक्विटी धारकों को रिटर्न देने में महत्वपूर्ण भूमिका निभाते हैं जिनका फर्म के मुनाफे पर अवशिष्ट दावा होता है।

इसके अतिरिक्त, नीति निर्माताओं को अपेक्षाकृत स्थिर आर्थिक वातावरण प्रदान करने का प्रयास करना चाहिए जिसमें फर्मों को कम समायोजन लागत का सामना करना पड़े और वह पूंजी संरचना में आवश्यक समायोजन कर सकें। कॉर्पोरेट गवर्नेंस उपायों के कार्यान्वयन को मजबूत करने के लिए उन्हें नियमित रूप से फर्मों के कॉर्पोरेट गवर्नेंस प्रथाओं की निगरानी करनी चाहिए।

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ABBREVIATIONS

ABDC	Australian Business Deans Council
BIS	Bank for International Settlements
BRIC	Brazil, Russia, India and China
BSE	Bombay Stock Exchange
CEO	Chief Executive Officer
CPI	Consumer Price Index
DIFF-GMM	Difference Generalized Method of Moments
DP	Dividend Pay-out
DPD GMM	Dynamic Panel Data Generalized Method of Moments
DR	Default Risk
EBIT	Earnings before Interest and Tax
FII	Foreign Institutional Investors
FTSE	Financial Times Stock Exchange
GDP	Gross Domestic Product
GICS	Global Industry Classification Standard
GMM	Generalized Method of Moments
IC	Investor Confidence
ICB	Industry Classification Benchmark
IMF	International Monetary Fund
IV	Instrument Variable
M/B	Market to Book Ratio
MM	Modigliani and Miller
MSCI	Morgan Stanley Capital International
NSE	National Stock Exchange
OLS	Ordinary Least Squares
P/E	Price Earnings ratio
PCA	Principal Component Analysis
QMLE	Quasi Maximum Likelihood Estimation

ROA	Return on Assets
ROE	Return on Equity
SSE	Shanghai Stock Exchange
SYS-GMM	System Generalized Method of Moments
USA	United States of America
VIF	Variation Inflation Factor
WDI	World Development Indicators
WLS	Weighted Least Squares
WPI	Wholesale Price Index