Are Banks Too Big to Fail? Measuring Systemic Importance of Financial Institutions*

Chen Zhou
De Nederlandsche Bank and Erasmus University Rotterdam

This paper considers three measures of the systemic importance of a financial institution within an interconnected financial system. The measures are applied to study the relation between the size of a financial institution and its systemic importance. Both the theoretical model and empirical analysis reveal that, when analyzing the systemic risk posed by one financial institution to the system, size should not be considered as a proxy of systemic importance. In other words, the "too big to fail" argument is not always valid, and measures of systemic importance should be considered. We provide the estimation methodology of systemic importance measures under the multivariate extreme value theory (EVT) framework.

JEL Codes: G21, C14.

1. Introduction

During financial crises, authorities have an incentive to prevent the failure of a financial institution because such a failure would pose a significant risk to the financial system, and consequently to the broader economy. A bailout is usually supported by the argument that a financial firm is "too big to fail": that is, larger banks exhibit higher systemic importance. A natural question arising from the debate on bailing out large financial firms is why particularly large

*The author thanks Markus Brunnermeier, Gabriele Galati, Douglas Gale, Miguel Segoviano, Stefan Straetmans, Casper de Vries, Haibin Zhu, participants at the second Financial Stability conference of the International Journal of Central Banking, and an anonymous referee for useful discussion and suggestions. Views expressed do not necessarily reflect official positions of De Nederlandsche Bank. Author postal address: Economics and Research Division, De Nederlandsche Bank, 1000AB Amsterdam, The Netherlands. E-mail: C.Zhou@DNB.nl.