
[Working Paper No. 937](#)

Keep in mind

The series Working Papers on Economics is published by the Office for Economic Studies at the *Banco de la República* (Central Bank of *Colombia*). The works published are provisional, and their authors are fully responsible for the opinions expressed in them, as well as for possible mistakes. The opinions expressed herein are those of the authors and do not necessarily reflect the views of Banco de la República or its Board of Directors.

AUTHOR OR EDITOR

Carlos León

Geun-Young Kim

Constanza Martínez

Daeyup Lee

AUTHORS AND/OR EDITORS

[Geun-Young Kim](#)

[Daeyup Lee](#)

The effect of the Global Financial Crisis (GFC) has been substantial across markets and countries worldwide. We examine how the GFC has changed the way equity markets group together based on the similarity of stock indices' daily returns. Our examination is based on agglomerative clustering methods, which yield a hierarchical structure that represents how stock markets relate to each other based on their cross-section similarity. Main results show that both hierarchical structures, before and after the GFC, are readily interpretable, and indicate that geographical factors dominate the hierarchy. The main features of equity markets' hierarchical structure agree with most stylized facts reported in related literature. The most noticeable change after the GFC is a stronger geographical clustering. Some changes in the hierarchy that do not conform to geographical clustering are explained by well-known idiosyncratic features or shocks.

The series Borradores de Economía is published by the Economic Studies Department at the Banco de la República (Central Bank of Colombia). The works published are provisional, and their authors are fully responsible for the opinions expressed in them, as well as for possible mistakes. The opinions expressed herein are those of the authors and do not necessarily reflect the views of Banco de la República or its Board of Directors.