Do cultures influence abnormal market reactions before official sovereign debt rating downgrade announcements?

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\begin{abstract}
We investigate whether cultural norms influence the way market information is incorporated into overall market prices. We examine whether cultures influence abnormal market reactions before official sovereign debt rating downgrade announcements across 46 countries. Michaelides et al. (2015) find that institutional quality is significantly associated with less negative abnormal market reactions prior to downgrades. Hofstede’s six cultural dimensions (Hofstede and Bond, 1988) are used to measure cultural differences. We show that high masculinity and high individualism are significantly associated with less negative abnormal market reactions. Masculinity remains significant when the model includes institutional quality and other key variables.
\end{abstract}

\section{1. Introduction}

Over the last several years a growing line of research tries to explain various financial economic issues using cultural differences around the world. A logical extension to this branch of research is to assess if culture influences abnormal market reactions tied to large economic events. In this paper, we investigate whether or not a country’s cultural or societal norms influence the way new market information is incorporated into overall stock market prices. Specifically, we examine whether the cultural dimensions developed by Hofstede and Bond (1988) can help explain the large cross-sectional variation in global abnormal market reactions before official sovereign debt rating downgrade announcements.

When sovereign debt ratings are under revision, there are generally consultations between credit ratings agencies (CRAs) and local government officials. Before making the official public downgrade announcement, CRAs and government officials are meant to keep information exchanged during the consultation processes completely confidential. However, countries
whose sovereign ratings are under revision often face significant abnormal stock market reactions before the official announcement due to information leakage where some of the details regarding the forthcoming downgrade are revealed well before the official debt rating downgrade announcement.

Michaelides et al. (2015) examine whether institutional quality affects the way leaked information impacts financial markets before official sovereign debt rating downgrade announcements. Although the words “information leakage” may evoke thoughts of purely private secrets such as insider trading information, the large scale of the information leakage introduced by Michaelides et al. is in the form of both public and private information. For their full sample, they observe that higher institutional quality subdues or moderates the downward behavior of the abnormal market reactions before these events.

In our research, we examine whether cultural dimensions also influence the level of downward market movements tied to information arrival before the official downgrade announcements. Hofstede defines six different dimensions of culture. They are power distance index (PDI), uncertainty avoidance index (UAI), individualism (IDV), masculinity (MAS), long-term orientation (LTO), and indulgence versus restraint (IVR). MAS and IDV are strongly related to overconfidence and self-attribution bias, and based on prior literature we therefore expect high MAS and IDV cultures are more likely to be “insusceptible” and nonreactive to negative market news. In our empirical analyses we find that high MAS and high IDV are significantly associated with less negative abnormal market reactions prior to sovereign debt rating downgrades. In robustness tests MAS remains significant when the model includes institutional quality, legal origin, corporate governance, and market based variables. For the event window CAR\([-10, -3]\), when stock market capitalization as a percentage of country GDP is added to the regression analysis, MAS is significant and institutional quality becomes insignificant. Our findings help support the view that culture influences financial markets, and specifically that the MAS and IDV cultural dimensions and the concept of overconfidence help explain variations in the way information is interpreted and used by financial market participants.

2. Material and methods

2.1. Literature review

There are several studies that address the effects of sovereign debt rating downgrades on financial markets. Brooks et al. (2004) find that there is a negative effect of rating downgrades on stock returns. Kaminsky and Schmukler (2002) find that downgrades in sovereign ratings impact country risk represented by increases in JP Morgan Emerging Market Bond Index (EMBI) yield spreads. They also find that the downgrades negatively impact stock returns. Gande and Parsley (2005) build on Kaminsky and Schmukler (2002) and find that there is contagion in government bond yields across countries after rating downgrades. Martell (2005) and Hill and Faff (2010) find that there are movements in stock returns before rating announcements. Afonso et al. (2012) find that there is bi-directional causality between sovereign bond yield responses and rating changes.

In a recent study, Michaelides et al. (2015) conduct an extensive analysis of pre-announcement news before sovereign debt downgrades. They show that the major market implications associated with rating downgrades are driven by information leakage and its incorporation into stock prices. They provide evidence of information leakage (i.e., large declines in the stock market) before the official downgrade announcements especially in countries with lower institutional quality. They show a causal link between sovereign institutional quality and abnormal market reactions prior to sovereign debt rating downgrades. Abnormal market reactions before official sovereign debt rating downgrade announcements vary widely from country to country and event to event. In the full data set from Michaelides et al., abnormal market reactions measured by cumulative abnormal returns (CARs) for event window \([-10, -3]\) for the most extreme events in Iceland and Malaysia are \(-56.12\%\) (date of event was November 24th 2008) and \(27.36\%\) (September 9th 1998), respectively. Based on these extreme CARs, Michaelides et al. winsorize the data at the \(1\%\) level. With the winsorized data, they find that countries with higher institutional quality are positively associated with less negative abnormal market reactions.

We hypothesize that, although clearly important, institutional quality might not be the only relevant factor in the magnitude of the price movements before sovereign debt rating downgrades. The institutional quality measure used by Michaelides et al. is the Transparency Index score available from www.transparency.org. This measure focuses on the level of corruption within a society where higher transparency indicates less corruption. We feel this measure may not be broad or encompassing enough to solely explain abnormal market reactions that are potentially influenced by many other factors. We suspect that country level cultural norms may also influence abnormal market reactions around market disrupting events such as sovereign debt rating downgrades.

Finance research only recently started incorporating cultural analyses. For example, Grinblatt and Keloharju (2001) find that investors prefer nearby firms, same-language firms, and same culture firms. Stulz and Williamson (2003) find that religious beliefs influence investor legal protections. Kwok and Tadesse (2006) and Aggarwal and Goodell (2009) find that countries with a high UAI culture are more likely to have bank-based financial systems. Chang and Noorbakhsh (2009), Ramirez and Tadesse (2009) and Fidrmuc and Jacob (2010) find that culture influences firms’ cash holdings. Chui et al. (2010) find that IDV increases market trading volume, average stock volatility, and the return on the momentum portfolio. Finally, Costa et al. (2013) find that PDI, UAI, and LTO influence initial public offering (IPO) underpricing. Their results persist when they include legal origin, corporate governance and market based variables. Overall, Reuter (2011) identifies only 29
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