

**Rating Skewness Spillovers in Equity and Currency Markets:  
Evidence from the Pacific-Rim**

Sirimon Treepongkaruna<sup>a</sup>

Eliza Wu<sup>b, \*</sup>

<sup>a</sup> *Department of Accounting and Finance, Monash University, Melbourne VIC 3800 Australia*

<sup>b</sup> *School of Banking and Finance, University of New South Wales, Sydney, NSW 2052 Australia*

**Abstract**

Using high frequency data, we examine the impact of different types of sovereign rating announcements on the realized skewness of stock and currency returns in the Asia-Pacific region over 1997-2001. We study the sovereign rating impacts on stock and currency market skewness using vector auto regression and panel data regression analyses. We find stock and currency market skewness reacts heterogeneously to ratings news and its spillover effects with the former being consistently more responsive.

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\* Corresponding author, Email: [e.wu@unsw.edu.au](mailto:e.wu@unsw.edu.au) Tel.: +61-2-93855889

## **1. Introduction**

Credit rating agencies are specialist information providers in international financial markets and they are expected to facilitate market efficiency. Yet, the informational value of ratings and the role of rating agencies in the international financial system remains widely debated. Do sovereign ratings have significant and timely impacts on the higher moments of asset returns? Are their impacts equal across different financial markets?

This paper aims to examine the effect of sovereign credit rating events on the realised third moment of stock and currency market returns for five advanced markets in the Asia-Pacific region – Australia, Hong Kong, Japan, Korea and Singapore. As credit rating agencies have often been criticised for their inability to forewarn market participants and also for their delayed reactions to international financial crises (see Mora, 2006), it is important to assess the wider impacts of rating agencies' guidance on the stability of stock and foreign exchange (FX) markets, as measured by higher moments of their realized return distributions. In particular, we focus on the rating impacts on realized skewness measures over the period from 1997 to 2001, covering major episodes of financial crises arising from East Asia (1997), Russia (1998) and other parts of the world. Our study is motivated by market participants' and policy makers' concern for downside risks and its contagious effects in international financial markets.

Sovereign credit ratings provide publicly available information on a national government's ability and willingness to service its debts in full and in a timely manner and are primarily determined by a country's economic fundamentals (see Afonso, 2003; Cantor and Packer, 1996). To date, the full extent of the impacts of agency ratings in the financial system are not well understood. This paper complements existing studies and adds a significantly new dimension to the academic literature on rating impacts in international financial markets. Whilst the significant impacts of sovereign credit

ratings on stock and debt market returns are established in the ratings literature (see inter alia Cantor and Packer, 1996; Reisen and Von Maltzan, 1999; Kaminsky and Schmukler, 2002; Kaminsky and Schmukler, 1999; Brooks et al., 2004; Gande and Parsely, 2005; Ferreira and Gama, 2007; Pukthuanthong-Le, Elayan and Rose, 2007) the effects on the skewness of asset returns and currency markets have never been explicitly examined. News on sovereign debt ratings may affect both stock and currency markets as ratings information provide signals on future economic conditions within a rated country and a rating change may cause the national government to implement policies which affect companies' future cashflows, thereby affecting stock returns as well as affecting general investor confidence and buying and selling pressures on the countries' currency. Furthermore, as the asymmetric and spillover effects of ratings are established in the extant literature (Reisen and Von Maltzan, 1999; Brooks et al., 2004; Gande and Parsely, 2005; Ferreira and Gama, 2007) it is only natural to examine whether there are also asymmetries and spillovers in the rating impacts on higher moments of stock and currency market returns.

The existing studies on rating impacts predominantly use the event study methodology to examine the cumulative abnormal returns of stock markets in a time window of several days after a rating announcement to determine the impact of rating changes (see for example, Brooks et al., 2004; Ferreira and Gama, 2007). Instead, we first use high frequency currency and stock market data to compute realized skewness and then examine their financial linkages and the impact of ratings events within a vector auto regression (VAR) and panel data regression framework. The differential impacts on currencies and stock markets in the Asia-Pacific during the 1997-1998 Asian Financial Crisis (AFC) presents a good natural experiment for ascertaining the impact of sovereign ratings events on realized skewness measures.

Overall, we find that currency and stock market skewness reacts heterogeneously to ratings announcements with stock market skewness being more responsive to rating news than currency markets in both vector auto regression and panel regression analyses. The regional Asian Financial Crisis only marginally affected currency market skewness. Rating effects are asymmetric as rating upgrades (downgrades) increase (decrease) realized skewness. Moreover, outlooks impact on both stock and currency markets whereas actual rating changes are anticipated by stock market participants and hence, not significantly reflected in realized stock market skewness. The impulse response functions indicate that rating shocks of all sample countries immediately affect both stock and currency market skewness and the effects last for several days. Rating shocks generally stimulate stock market skewness to a greater degree. However, we find only weak ratings spillover effects from Korea to other countries' realized skewness measures with particularly weaker results in currency markets.

The contributions of our paper are as follows. First, this is one of the few studies to provide high frequency evidence on the financial market impact of sovereign credit ratings. The advantages of using daily measures computed from intraday market data over day to day closing prices is that they provide a better representation and more robust estimate of actual price behaviour. Daily close-to-close measures are unable to capture the intraday price fluctuations, which can be substantial particularly during times of financial distress. Second, we empirically investigate the impacts of sovereign credit ratings on stock and currency market skewness for the first time. In doing so, we shed new light on the impacts of sovereign ratings on the higher moments of asset returns.

This research has serious implications in light of the increased role of sovereign credit ratings under the new Basel II banking regulatory framework. As financial assets are marred by

downside risks, a clearer understanding of rating impacts on stock and currency market skewness will not only be beneficial for risk management by corporate treasurers, portfolio investors and financial institutions managers but also system stability management by policymakers.

The organization of this paper is as follows. In section 2, we provide the data description followed by the empirical modelling in Section 3. In Section 4 we discuss our findings before concluding in Section 5.

## **2. Data Description**

The dataset used in this study consists of the bid-ask quote prices for both currencies traded and stock market indexes in five advanced countries in the Asia-Pacific region – namely, Australia, HK, Japan, Korea and Singapore. Our sample period starts 2 January 1997 and ends 31 August 2001.

The currency market data used in this paper consists of the tick-by-tick exchange rates from Olsen and Associates for the following currencies: Australian Dollar (AUD), Hong Kong Dollar (HKD), Japanese Yen (JPY), Korean Won (KRW) and Singaporean Dollar (SGD). All currencies are quoted against the USD. The most liquid currency traded in our sample is the JPY with the average number of quotes being 6,923 quotes a day while KRW is the least liquid rate with the average number of quotes being 369 quotes a day. The stock market index data are captured from Reuters' terminals and is provided by SIRCA (Securities Industry Research Centre of Asia-Pacific) in their TACTIQ database. These indices include the Australian S&P/ASX100<sup>1</sup> (ATO1), Hong Kong Hang Seng Index (HSI), Japan Nikkei index (Nikkei),

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<sup>1</sup> As an alternative benchmark stock market index for Australia, we also analysed the All Ordinaries index and our conclusions remain qualitatively unchanged.

Korean KOSPI 200 Index (KS200) and Singaporean Strait Times Index (SS1). All indices are denominated in local currencies. The KS200 is the most liquid with the average number of quotes being 1,308 quotes a day while SS1 is the least liquid with the average number of quotes being 22 quotes a day.

Although the foreign exchange market is a non-stop trading market, the stock market is not. Hence, we only consider part of the day where stock markets in the five sample countries are open. We therefore define our trading hours for all currency and stock markets considered as 23:00GMT to 09:00GMT, excluding weekends. For example, Sunday 23:00GMT to Monday 09:00GMT is considered as our Monday sample (i.e Monday for Australasia).

In addition, we use the history of foreign currency sovereign credit ratings and credit outlooks and watches from Standard and Poors (S&P). We focus only on foreign currency sovereign ratings assessments provided by S&P as previous studies have found these exert the greatest impact on market returns and are less anticipated (Reisen and von Maltzan, 1999; Brooks et al., 2004). S&P ratings announcements are generally made local a.m. time but the exact timing is not consistent within announcement dates. As the timing of ratings announcements are not consistent, we focus on daily (rather than intraday) impacts of ratings announcements. Following the approaches of Gande and Parsley (2005) and Ferreira and Gama (2007), we linearly transform the actual ratings and outlook and credit watch guidances (on imminent rating changes) into a comprehensive credit rating (DUM) measure. Both forms of ratings guidance are intended to be forward-looking measures of the perceived ability and willingness of sovereign debt issuers to service their financial obligation. However, actual rating changes reflect perceived permanent changes in credit quality in the long-term whereas credit outlooks and watches indicate imminent changes in ratings over the short-term. We define a

“rating event” as a non-zero change in the DUM series. There are a total of 18 rating events in our overall sample, with Korea and HK being the most actively re-rated countries, contributing 11 and 5 of those events respectively.

Based on the works of Andersen and Bollerslev (1998), Barndorff-Nielsen and Shephard (2001) and Andersen et al. (2003), we argue that daily realized measures calculated based on intraday returns provides more consistent and efficient measures than those computed from close to close prices. In this study, the intraday return is calculated as the log difference of the midpoint at time  $t$  and midpoint at time  $t-1$ . We use the mid-point quote between the Bid and Ask price to minimize the effect of Bid-Ask bounce, as suggested by Roll (1984). To minimise microstructural bias and sampling error, we use the daily realized skewness measures computed from 30 minute intervals for our empirical estimations.<sup>2</sup>

Following Hutson, Kearney and Lynch (2008), we compute the daily “down-to-up-volatility” skewness measure defined as follows:

$$DU_t = \log \left( \frac{(D_u - 1) \sum_{d=1}^{D_d} Rdown_{d,t}^2}{(D_d - 1) \sum_{d=1}^{D_u} Rup_{d,t}^2} \right) \quad (1)$$

where  $Rdown_{d,t}$  denotes a  $d$ th 30-minute return during day  $t$  that is less than the average return for this particular day,  $Rup_{d,t}$  denotes a  $d$ th 30-minute return during day  $t$  that is greater than the average return for this particular day, and  $D_d$  and  $D_u$  are the daily totals of the corresponding returns. It should be noted that  $D = D_d + D_u$ . This is a log ratio of the standard deviations of

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<sup>2</sup> As a robustness check, we also ran regressions with measures computed from other sampling intervals in the day. Our results in both vector auto regression and panel regression analyses remain qualitatively the same. We also performed preliminary volatility and skewness signature plots to support our selection of 30 minute intervals.

returns below and above the mean return. A higher value of this measure corresponds with more left (negatively)-skewed return distributions.

### **3. Empirical Modelling**

#### **3.1 Vector Auto Regression Analyses**

We first employ granger causality tests and impulse response analyses within a vector auto regressive (VAR) framework to examine the inter-relationships between rating changes and equity and currency market skewness. A VAR structure is presented in equation (2) shown below:

$$y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + Bx_t + \varepsilon_t \quad (2)$$

where  $y_t$  is a  $k$  vector of endogenous variables (i.e. realised skewness for all countries' stock and currency returns and their sovereign ratings),  $x_t$  is a  $d$  vector of exogenous variables (i.e. constants in our case),  $A_1, \dots, A_p$  and  $B$  are matrices of coefficients to be estimated, and  $\varepsilon_t$  is a vector of innovations that may be contemporaneously correlated but are uncorrelated with their own lagged values and uncorrelated with all of the right-hand side variables. Using this framework, we ascertain the direction of potential causal relationships between skewness and sovereign ratings and analyse impulse response functions (IRF) from rating shocks.

#### **3.2 Panel Regression Analyses**

To further investigate the impacts of ratings announcements on the realized skewness of currency and stock market returns, we utilise a framework similar to that adopted by Christiansen and Rinaldo (2007) for studying intraday news effects in the US stock and bond markets. However, instead of using straight-forward dummy variables for capturing



announcement effects during the trading day, we adopt the credit rating event variables similar to those used in Gande and Parsley (2005) and Ferreira and Gama (2007) for studying rating spillover effects from other countries in international debt and stock markets respectively. In this methodological fusion, we introduce a more flexible framework for investigating the skewness impacts of international financial crises and different types of ratings information on the day of release using more efficient and consistent daily realized skewness measures.

Using pooled (panel) regression analysis, we estimate the following general model with fixed country and time effects to account for financial crises:

$$Y_{i,t} = \alpha_i + \beta_1 Event_{i,t} + \beta_2 Event_{i,t-1} + \beta_3 DUM_{i,t} + \beta_4 CRISIS_t + \varepsilon_{i,t} \quad (3)$$

where  $Y_{i,t}$  is the realised skewness for stock indices and currency returns for country  $i$  on day  $t$ ,  $DUM_{i,t}$  is the country's ratings level,  $Event_{i,t}$  is the rating event and  $CRISIS$  is a set of dummy variables included one at a time to capture various periods of international financial crises {Asian Financial crisis - AFC, Russian debt crisis - RFC and Global Financial crises (GFC) which is the sum of the AFC, RFC as well as the Brazilian and Turkish financial crises (BFC and TFC) occurring during our sample period}.<sup>3</sup> The financial crises dummy variables are defined as one on days during international financial crises and zero otherwise based on dates in Kaminsky and Schmukler (2002) and Kaminsky, Reinhart and Vegh (2003). The main variable of interest is  $Event$  and the  $DUM$  variable controls for non-linearities in market reaction relative to the position of each country on the rating scale.

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<sup>3</sup> Dynamic panel data estimations with  $\Delta Y$  and instrumented  $Y_{t-1}$  were not appropriate. Preliminary Augmented Dickey Fuller (ADF) tests rejected the existence of a unit root in the time series of daily realized skewness for both stock and currency markets. Hence, we analyse realized skewness in levels.

This empirical framework is sufficiently flexible to allow the base model specification to be extended for additional tests on the market impacts of different types of ratings information – specifically, downgrades and upgrades; outlook and rating changes; and rating spillovers.

First, to separately compare the impact of downgrade and upgrade phases in sovereign ratings, the following model was estimated:

$$Y_{i,t} = \alpha_i + \beta_1 Event_{i,t} + \beta_2 Event_{i,t-1} + \beta_3 DUM_{i,t} + \beta_4 CRISIS_t + \beta_5 I_t + \varepsilon_{i,t} \quad (4)$$

where  $I_t$  is an indicator variable for downgrades - DG (upgrades - UG) and takes a value of one in the period from a negative (positive) to positive (negative) Event and zero otherwise. The bulk of existing rating studies find that rating downgrades have more significant impact on market returns than upgrades (see for example, Brooks et al., 2004).

Second, to identify the potential differential market reactions to short-term outlook and long-term rating changes, the model was augmented to:

$$Y_{i,t} = \alpha_i + \beta_1 DUM_{i,t} + \beta_2 CRISIS_t + \beta_3 Outch_t \times Event_t + \beta_4 Ratch_t \times Event_t + \varepsilon_{i,t} \quad (5)$$

where  $Outch_t$  is a dummy variable defined as one when there is a change in sovereign outlook or credit watch and zero otherwise and  $Ratch_t$  is similarly defined for actual ratings changes. Both of these variables are then interacted with the ratings Event variable to compare the separate impacts of outlook versus actual rating events.

Third, in the spirit of Gande and Parsley (2005) and Ferreira and Gama's (2007) ratings spillover studies we also replace the ratings Event variable for country  $i$  with all other countries excluding  $i$  to determine the rating spillover effects to other sample countries' stock and currency market skewness in the Asia-Pacific region. Hence, the following model specification in Eq. (6) was also estimated:

$$Y_{j,t} = \alpha_i + \beta_1 Event_{i,t} + \beta_2 Event_{i,t-1} + \beta_3 DUM_{i,t} + \beta_4 DUM_{j,t} + \beta_5 CRISIS_t + \varepsilon_{j,t} \forall j \neq i \quad (6)$$

## 4. Empirical Findings<sup>4</sup>

We discuss the results with respect to first the vector auto regression then panel data regression analyses. Finally, we examine the rating spillover effects into other markets within the Asia-Pacific region.

### 4.1 Vector Auto Regression Results

To investigate the impact of sovereign ratings on our realized skewness measures, we fit a multivariate vector auto regressive (VAR(1)) system for sovereign credit ratings and the realized skewness of stock indices and currency returns. The lag length tests (sequential modified Log-Ratio test statistic, Final Prediction Error, and Akaike Information Criterion) all indicate that a one day lag is appropriate for our VAR system. Overall, we find that the spillover effects from ratings to realized skewness is particularly weak in currency markets compared with stock markets. We find lagged ratings in Australia positively affect the realized skewness of the Korean stock indices. We also find lagged ratings for HK has a weak positive impact on the realized skewness of the HKindex and Korean stock index. Furthermore, we also find that lagged ratings for HK positively affects the realized skewness of the Singapore stock market and Australian dollar. The lagged value of ratings in Korea negatively affects the realized skewness of the Korean Won. Finally, the one day lag of Singapore's and Japan's ratings do not have significant affects on skewness measures. This suggests that rating changes for these two highly

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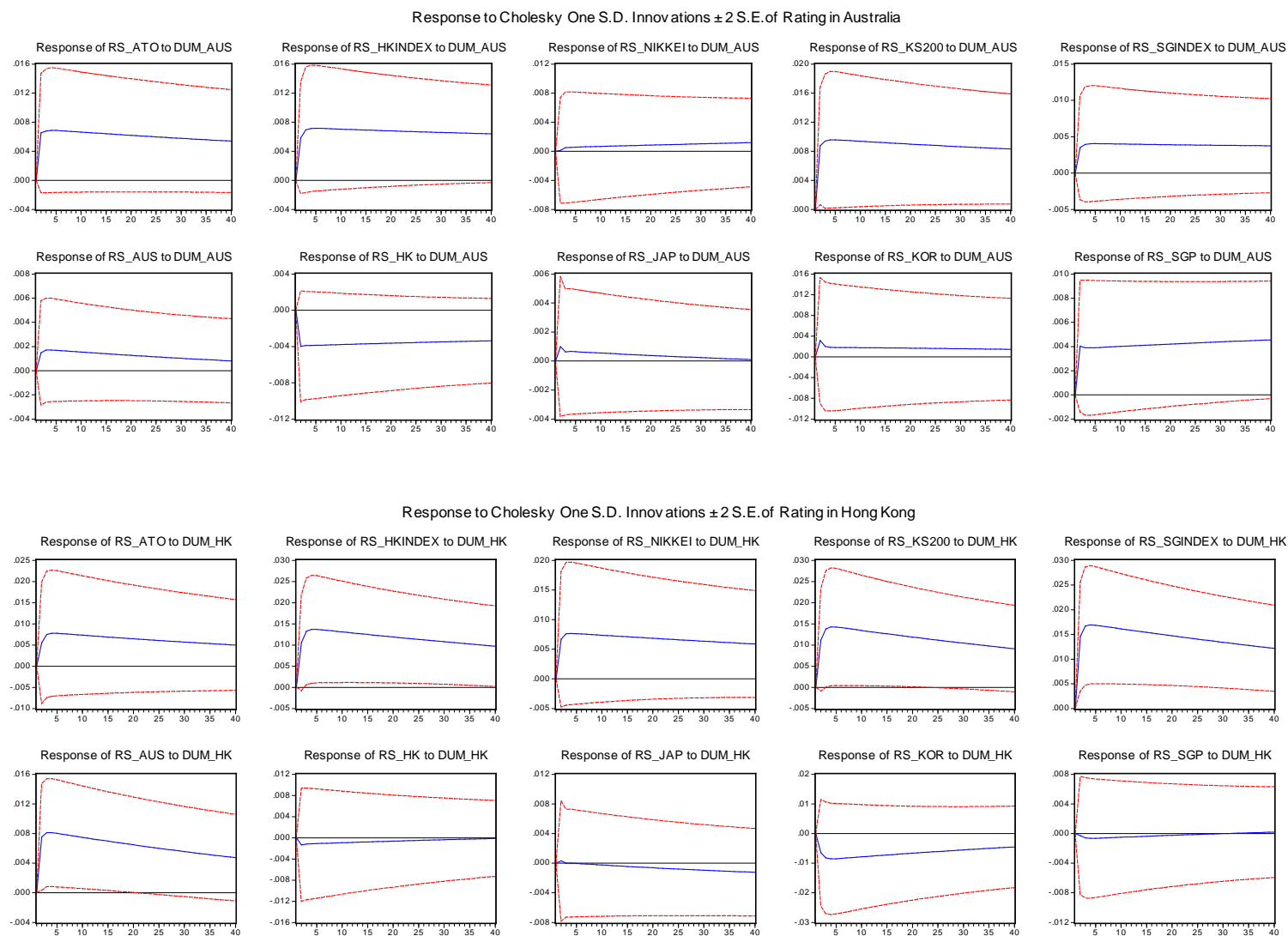
<sup>4</sup> To conserve space, we do not report the vector auto regression results and granger causality tests but these results are available upon request.

creditworthy countries do not impart any significant effects on either downside or upside risks within the Asia-Pacific region.

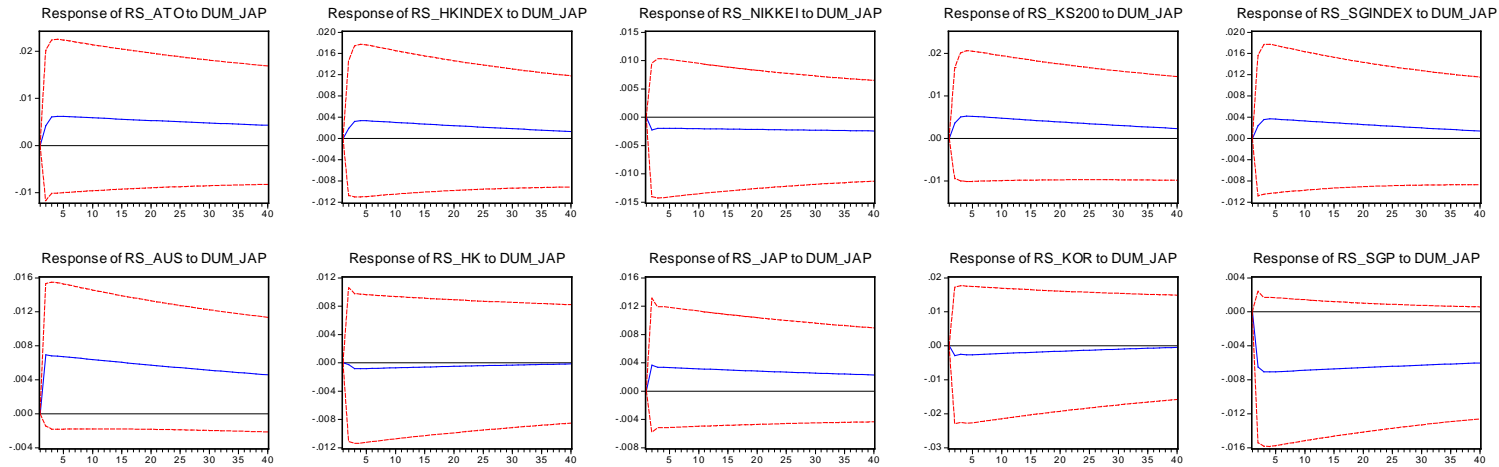
When we specifically conduct granger causality tests for our system of sovereign ratings and realized skewness series we find there are weak causal relationships across countries but significant ones within countries, particularly for stock markets.

Figure 1 plots the impulse response functions for our vector auto regressive system of ratings and stock and currency market realized skewness along with asymptotic standard errors. In general, we find a ratings shock for each country in the vector auto regression system not only has immediate effects on its own stock and currency market skewness but also that of other countries and these may last for up to four or five trading days afterwards. A ratings shock will mostly increase the degree of realized skewness in stock markets but may reduce skewness in currency markets within the Asia-Pacific region (with the exception of AAA rated Singapore). The impacts on stock markets are generally of a larger magnitude than in currency markets. Again, we see evidence of a heterogeneous response to ratings information in stock and currency markets.

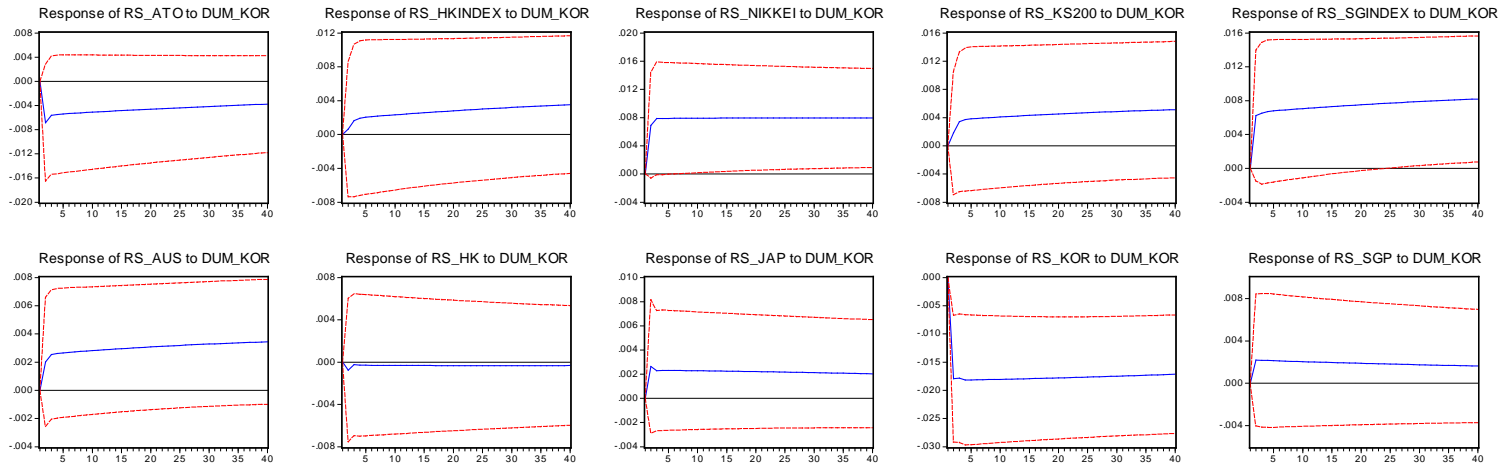
**Figure 1. Impulse Response Functions For Rating Shocks On Stock and Currency Market Realized Skewness**



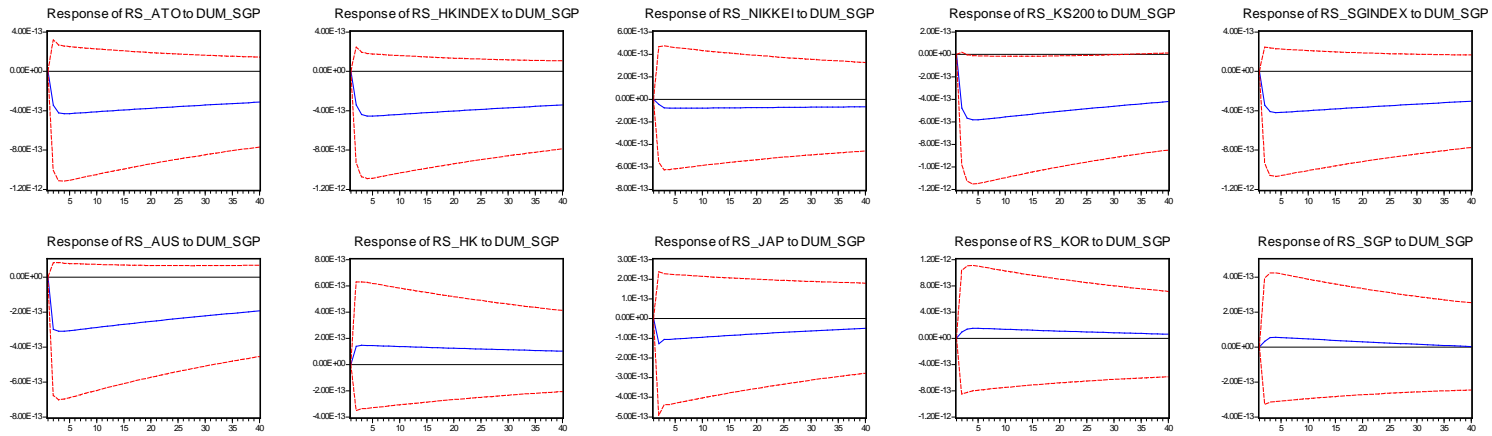
Response to Cholesky One S.D. Innovations  $\pm 2$  S.E. of Rating in Japan



Response to Cholesky One S.D. Innovations  $\pm 2$  S.E. of Rating in Korea



Response to Cholesky One S.D. Innovations  $\pm 2$  S.E. of Rating in Singapore



## 4.2 Panel Regression Results

Table 1 reports the estimates of the panel regression models represented in Eq. (3)-(5) for realized stock and currency market skewness as measured by the Hutson, Kearney and Lynch (2008) ‘down-to-up’ (DU) skewness measure. Consistent with their interpretation, a higher value of this measure corresponds with more left (negatively)-skewed return distributions.

We find evidence that rating events have significant impacts on the third moments of both stock and currency returns. However, there is a different relationship in the two asset markets as rating events are negatively related to stock market skewness but positively related to currency market skewness and the effect is clearly more persistent in the former. We find evidence of heterogeneous responses in these two different asset markets. Interestingly, the skewness of neither asset markets is affected by financial crises with the exception of the currency market being significantly affected by the AFC at the 10% significance level. This suggests that region specific financial crises play a greater role than general international financial crises. In terms of asymmetries, stock market skewness responds significantly to upgrade phases but currency skewness responds asymmetrically. The signs are consistent across asset markets in that upgrades reduce skewness whilst downgrades increase skewness towards the left. The results suggest that most rating downgrades may already be anticipated by stock but not currency market participants. We find that outlook changes are also significant on market skewness measures, albeit more so for stock market skewness. Interestingly, currency market skewness is more significantly affected by actual ratings changes (5% level) than outlook changes (10% level). Again, this presents evidence of heterogeneous market responses to agency ratings guidance.



**Table 1. Impact Of Sovereign Ratings On The Realized Skewness Of Stock And Currency Markets**

This table presents the panel estimation results for stock and currency market realized skewness over the sample 7/1/1997 to 30/8/2001. Model specifications (1)-(3) are based on Eq. (3)-(5). The crisis periods are from 1/7/1997-30/1/1998 (AFC); 1/8/1998-30/10/1998 (RFC) and the GFC includes the sum of the Asian, Russian, Brazilian (1/2/1999-28/2/1999) and Turkish (1/2/2001-28/2/2001) financial crises. The GFC; RFC; and UG coefficient are estimated from a separate regressions to avoid collinearity issues. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% levels.

|               | Stock market skewness  |                        |                        | Currency market skewness |                        |                        |
|---------------|------------------------|------------------------|------------------------|--------------------------|------------------------|------------------------|
|               | (1)                    | (2)                    | (3)                    | (1)                      | (2)                    | (3)                    |
| Const         | -1.744***<br>{0.0019}  | -1.8534***<br>{0.0011} | -1.7927***<br>{0.0017} | 1.9640***<br>{0.0004}    | 2.3767***<br>{0.0001}  | 1.9858***<br>{0.0001}  |
| Event         | -0.7976***<br>{0.0047} | -0.8150***<br>{0.0048} |                        | 0.5567***<br>{0.0033}    | 0.5313***<br>{0.0089}  |                        |
| Lag Event     | -1.1129***<br>{0.0006} | -1.1304***<br>{0.0006} |                        | -0.7520<br>{0.3962}      | -0.7775<br>{0.3852}    |                        |
| DUM           | 0.0994***<br>{0.0021}  | 0.1024***<br>{0.0016}  | 0.1021***<br>{0.0019}  | -0.1133***<br>{0.0004}   | -0.1352***<br>{0.0001} | -0.1146***<br>{0.0001} |
| AFC           | -0.0744<br>{0.5693}    | -0.0565<br>{0.6636}    | -0.0596<br>{0.6499}    | -0.1082*<br>{0.0980}     | -0.1077*<br>{0.0985}   | -0.0997<br>{0.1467}    |
| GFC           | 0.1148<br>{0.1877}     |                        |                        | -0.0587<br>{0.2299}      |                        |                        |
| RFC           | 0.0979<br>{0.6259}     |                        |                        | -0.0619<br>{0.4927}      |                        |                        |
| DG            |                        | 0.1333<br>{0.2555}     |                        |                          | 0.2873***<br>{0.0001}  |                        |
| UG            |                        | -0.1913**<br>{0.0213}  |                        |                          | -0.1383**<br>{0.0348}  |                        |
| Outch×Event   |                        |                        | -1.0220***<br>{0.0010} |                          |                        | 0.3494*<br>{0.0530}    |
| Ratch×Event   |                        |                        | -0.2357<br>{0.4616}    |                          |                        | 0.8453**<br>{0.0112}   |
| Adj. R-square | 0.0048                 | 0.0057                 | 0.0032                 | 0.0099                   | 0.1361                 | 0.0082                 |
| No. Obs.      | 6065                   | 6065                   | 6070                   | 6065                     | 6065                   | 6065                   |

#### 4.4 Rating Spillover Effects On Realized Skewness

Table 2 presents the panel estimation results for Eq. (6). We find that within our sample, the other markets in the Asia-Pacific region were marginally affected by Korea's rating events but there were no spillovers from the other four markets' rating events into stock and currency markets.<sup>5</sup> This is not surprising given that of the more developed Asian financial markets studied, Korea was the worst affected during the AFC. In spite of positive granger causality results from the vector auto regression analyses, we find Hong Kong's rating events did not have consistent spillover effects across all other sample countries. We only find evidence that realized skewness in stock markets were particularly responsive to rating spillover effects from Korea. However, the market impact of ratings spillovers are economically and statistically less significant than own country rating effects discussed above. Interestingly, Korean rating events had no spillover effects on other advanced Asian currency markets. These findings suggest that whilst the ratings events of advanced markets in the Asia-Pacific are generally interpreted by market participants as country-specific news, there were common rating information spillovers from Korea into the other developed Asian stock markets. As Korea's sovereign rating performance declined, the perception of riskiness in other Asian stock markets also increased.

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<sup>5</sup> Only rating spillover results from Korea are presented for brevity.

**Table 2. Rating Spillover Effects From Korea To Other Countries' Stock and Currency Market Skewness**

This table presents the rating spillover effects from Korea to other sample countries in the Asia-Pacific region. The model specification is based on Eq. (6). The AFC crisis period is from 1/7/1997-30/1/1998. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% levels.

|                 | RS-stocks              | RS-currency         |
|-----------------|------------------------|---------------------|
| Constant        | -4.0567**<br>{0.0106}  | 0.0077<br>{0.9919}  |
| Event_Korea     | -0.5731***<br>{0.0005} | 0.0591<br>{0.4585}  |
| Lag Event_Korea | -0.0809<br>{0.6246}    | -0.0246<br>{0.7581} |
| Dum_Korea       | 0.0125<br>{0.3238}     | 0.0086<br>{0.1569}  |
| Dum_others      | 0.2097**<br>{0.0147}   | -0.0076<br>{0.8549} |
| AFC             | 0.0064<br>{0.9479}     | -0.0131<br>{0.7804} |
| Adj. R-square   | 0.0031                 | 0.0015              |
| No. obs.        | 4852                   | 4852                |

## 5. Conclusions

We have examined the impact of different types of sovereign rating announcements on the realized skewness of stock and currency returns in the Asia-Pacific region over 1997-2001 using high frequency data. We study the cross-country and same country rating impacts on market return skewness using vector auto regression and panel regression analyses.

We find evidence of heterogeneous market responses to agency ratings guidance in currency and stock markets with the latter being more responsive and experiencing more persistent effects. Changes on sovereign credit outlooks have more significant impact on the realized skewness of stock markets but actual rating changes are more important in currency markets. We also find clear evidence that rating events have significant and asymmetric impacts

on higher moments of both asset market returns. That is, realized skewness increases with downgrades and declines with upgrades. Further, we find mute effects of global financial crises on the realized skewness of stock and currency returns in the Asia-Pacific and only marginal effects of the 1997-1998 regional Asian Financial Crisis on the realized skewness of currency returns. Finally, there were marginal rating spillover effects from Korea on other markets' realized measures. More developed and stable financial markets are less inclined to impart rating spillover effects into other asset markets in the region.

In summary, we find new evidence that national sovereign rating events have significant impacts on the higher moments of stock and currency returns. Future research into the impacts of credit ratings on international financial markets need to recognize and account for this to fully capture the true extent of rating influence on asset returns.

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