The international spillover effects of US Quality of Political Signals: A Global VAR approach

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The international spillover effects of US Quality of Political Signals: A Global VAR approach

Yinka S. Hammed[*], Afees A. Salisu[**], and Michael Akume[***]

Abstract

We investigate the influence of US quality of political signals (USQPOLS) on advanced and emerging markets using the Global Vector Autoregressive (GVAR) model that also accommodates the macroeconomic conditions of the shock recipient markets. We show an immediate negative impact on the equity markets with about 1.5% response to a 1 standard deviation shock due to the USQPOLS. However, we find impulse responses that transcend the immediate period for the high and low quality of political signals, albeit with contrasting evidence. Additional evidence involving Global Economic Policy Uncertainty (GEPU) suggests a direct and instantaneous effect on real equity prices. We are able to trace our evidence to the exchange rate channel and document important implications for policy and practice.

Keywords: Political signals, International Equity Markets, Global Vector Autoregressive Model, Impulse Responses
JEL Codes: P00, C32, G15

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1. Introduction

The theoretical guidance on political sentiment-market nexus suggests that larger opinion divergence among investors can potentially generate volatility in the market and reduce real prices and returns (see Dumas et al., 2009; Carlin et al., 2014; Andrei et al., 2015; Siganos et al., 2017; Białkowski et al., 2022). By implication, higher variations in investors' political sentiments may be an indication that each investor will individually operate in the direction with which they have foreseen the market situation. However, since investors would often update their beliefs about market conditions given the continuous flow of political news (see Pastor & Veronesi 2012, 2013; Białkowski et al., 2022), it becomes an issue of concern on how the equity market will react to such flow of news. Á príorì, when political news is precise, investors' opinions are more likely to converge or otherwise when the political environment is noisy. As a consequence, the shock emanating from political uncertainty could generate a mixed effect on stock prices and market volatility (Białkowski et al., 2022).

Further connection has been established between political uncertainty and stock prices (Pastor & Veronesi, 2012, 2013, 2017), where higher political uncertainty tends to raise equity market volatility. The extent of fluctuation of political news in a country like the US can potentially influence other global equity markets in the globe, particularly the developed and emerging market economies given its strong ties with these markets. The size and level of political situation and uncertainty in the US would have wider implications on other economies (see Ko and Lee, 2015; Yin and Han, 2018; and Bialkowski et al., 2021). However, the literature has suggested the exchange rate channel as one of the important paths through which such international propagation can be globally transmitted (see Montes, 2013)

Interestingly, some studies have investigated the international spillover effect of US policy uncertainties on the stock markets and macroeconomic variables of other developed and emerging economies (Chortereas & Noikokyris, 2016; Trung, 2018, 2019; Gupta et al., 2019, 2020; Aor et al., 2021; Salisu et al., 2021). At the country level, there are also studies which have equally investigated how fluctuations in political news and economic policy uncertainty can contribute to changing equity market conditions (see Pastor & Veronesi, 2013; Dakhlaoui and Aloui, 2016; Christou et al., 2017; Das & Kumar, 2018; Bhattarai et al., 2020; Białkowski et al., 2022). Our interest is, however, to keenly investigate the possible international shock propagation of the quality of political signals across equity markets in developed and emerging market economies.

The quality of the political signal index [Q-index] developed by Bialkowski et al. (2021) is an in-text measurement of the quality of political news as to whether the information is precise or imprecise (noisy). When the information is precise, the index is low, and the quality is high. On the other hand, noisy news gives rise to higher index values and, correspondingly, low-quality signals. Consequently, we demonstrate the signalling effect of the quality of political news on equity markets of both developed and emerging economies.

To further expand our contribution, we emphasize our stance by categorizing the countries into high and low financial development. For this categorization, we use IMF data on the financial development index, available for all the countries considered in this analysis. We use a threshold of 50, where an index above the threshold signifies high financial development and, below, lower financial development. With this arrangement, 20 out of the 33 countries are found as high and 13 as low financially developed. In the second categorization, the countries are grouped into advanced and emerging market economies (this is built in the GVAR modelling), while the last categorization is based on the choice of exchange rate regimes as adopted in each country. Specifically, we have countries operating free-floating exchange rate systems and others on managed-floating exchange rate regimes. More importantly, as in the second categorization, many of the emerging economies engage in managed-floating exchange rates while the highly-developed countries operate free-floating. Nevertheless, our presentation of our findings reflects the country's grouping mechanism that we emphasized here.

This study employs the Global Vector Autoregressive (GVAR) model to obtain the impulse responses to shock due to the quality of political signals. This approach is more helpful for global, regional and country specific shocks while also controlling the macroeconomic conditions of the individual economies. We further partition the Q-index into high and low-quality political signals, producing distinct results for them. By implication, we are able to evaluate any possible asymmetry in the nexus. We hypothesize that a positive shock to US quality of political signals has larger positive effects on real equity prices when the quality is low and otherwise when it is high. We demonstrate this via the exchange rate channel where low US quality of political signals (high political tensions) may cause portfolio investment to shift from the US to other developed and emerging markets, thereby weakening the US dollar. The improved portfolio investment inflow to other developed and emerging markets renders their equity markets more competitive, increasing their prices across these countries. However, lending credence to safety-seeking theory (see Ahnert

& Perotti, 2021), with high-quality signals, the dollar becomes stronger due to higher demand for US real equity relative to other equities of other countries. In this way, equity prices in other countries fall.

Our first results involving a one standard deviation shock due to the quality of political signals reveal a transient and negative impact on the real equity markets of some of the selected countries, particularly countries that share close ties with the US. On average, we find a 1.5% reduction in real equity prices due to the shock. However, when the quality signals are decomposed into high and low-quality political signals, the impact of the shock becomes more apparent in the equity markets across the regions and countries. Shock due to the low quality of political signals manifests in real equity prices with higher prices, and the response of shock to high-quality signals is found to reduce the equity prices. Again, the responses of real exchange rates of these countries to both high and low US quality of political signals (as provided in the appendix) further suggest the efficacy of the exchange rate channel as the possible route for this international shock propagation.

The remainder of this paper consists of Section 2, which describes the basics of the GVAR model and provides information on the study's data. Section 3 presents the empirical findings, and Section 4 concludes the paper.

2. Methodology and Data

In this analysis, this study takes reference from the works of Chudik & Pesaran (2013) and Smith & Galesi (2014) on the GVAR framework to investigate the propagation of shock associated with US quality of political signals on equity markets of other advanced and emerging countries. In modelling the GVAR framework, the approach usually begins by analyzing the individual countries' $\mathrm{VARX}^*(p_i, q_i)$ models across $N+1$ group of countries [in this case, a group of emerging and developed countries] such that: $i = 1, 2, ..., N+1$. The $(N+1)^{th}$ country is the US, where its inclusion is to serve as the reference country through which the political quality signal shock is propagated to the global financial system. The $VARX^*(p_i, q_i)$ model for each country expresses the endogenous variables as functions of the foreign and global/common variables. In our model, the country-specific endogenous variables are real GDP, inflation, real equity prices, real exchange rate, short interest rate and economic uncertainties for the individual countries. The global variables are commodity prices, metal prices, and a measure of US quality of political signal

(which is further partitioned into the high (below median) or low (above median) quality of political signals. With this analysis, our GVAR framework is presented in the following form:

$$x_{it} = \sum_{\lambda=1}^{p_i} \Lambda_{i\lambda} x_{i,t-\lambda} + \Gamma_{i0} x_{it}^{*} + \sum_{\lambda=1}^{q_i} \Gamma_{i\lambda} x_{i,t-\lambda}^{*} + \Phi_{i0} G_{it} + \sum_{\lambda}^{s_i} \Phi_{i\lambda} G_{i,t-\lambda} + \mu_{it} \qquad (1)$$

where x_{it} is a $k_i \times 1$ vector of country-specific variables denoted with i where i runs from 1 to N+1 (such that $N = 32$) in a particular period t (where $t = 1,2,3,...,T$). Also, x_{it}^{*} is the corresponding $k_i^{*} \times 1$ vector of foreign variables constructed as trade-weighted counterparts of the domestic variables. Therefore, $x_{it}^{*} = \sum_{j=1}^{N} w_{ij} x_{jt}$ where $\sum_{j=1}^{N} w_{ij} = 1$,[1] and $w_{ii} = 0$. The external common (global) factors are represented with G_{it} and their values are repeated for all the cross-sections. Again, $\Lambda_{i\lambda}$, which runs as $\lambda = 1,2,3,...,p_i$, is a $k_i \times k_i$ matrix of unknown parameters for domestic variables; Γ_{i0} (where $\lambda = 0,1,2,...,q_i$) is a $k_i^{*} \times k_i^{*}$ matrix of unknown parameters for foreign variables, and Φ_{i0} (where $\lambda = 0,1,2,...,s_i$) is a $r_i \times r_i$ matrix of unknown parameters for external common factors which are repeated for all the cross-sections; while μ_{it} is a vector (i.e., $k_i \times 1$) of error terms. However, all the foreign and common factor variables are factored in our model as weakly exogenous.

As indicated in equation (1), the estimated country-specific model is stacked together to form a large GVAR model, out of which the effect of the US quality of political signal shock on international equity markets is formed. Our estimation of the GVAR model is done with domestic variables for the developed and emerging economies with reference to the GVAR toolbox of Smith and Galesi (2014).[2] More importantly, the present also includes[3] log of real equity prices, short— and long-term interest rates, US dollar-based real exchange rate, inflation rate, economic

[1] w_{ij} is the weighting matrix obtained from the IMF Direction of Trade flows data.

[2] See the link to the data at: http://www.econ.cam.ac.uk/people-files/emeritus/mhp1/GVAR/GVAR.html.

[3] These variables are carefully selected by theories and align with different channels of shock transmission. Thus, our favoured covariates are relevant in the spillover analysis across countries, as indicated in the GVAR toolbox. Also, existing studies focusing on other areas of shock transmission (e.g., Eickmeier and Ng, 2015) have equally favoured a number of these variables.

uncertainties[4] and global variables (common factors), namely, global prices of oil, agricultural commodities, and the US quality of political signals. The quality of the political signal index (hence Q-index) for the US is an in-text measurement. The top ten leading newspapers were considered, focusing on articles that discuss political issues. The digital archives of these newspapers were scanned to retrieve the frequency of the mentioning of the words "quality", "signal", and "policy". For each of these words, emphasis is placed on some associated words (i.e., one that has a connection with each). For instance, words such as "false", "misleading", and "ambiguous" were aligned with quality while reference was on "signal", "declaration", and "claims" for the word signal. For policy, associated words are: "deficit", legislation" and "federal reserve". In calculating the Q-index, consideration is given to the number of times each of the aforementioned words appears in the newspaper articles with reference to the number of articles in the concerned newspaper for the month. The average of the share of the frequency of these words relative to the total number of articles that discussed political issues is then normalised and scaled to arrive at the index (see Bialkowski et al., 2022). A higher index is expected to imply a low-quality political signal for the concerned country and vice versa. Originally, the data appeared on a monthly basis, but given the frequency of data for other variables of this study, we aggregated the Q-index to quarterly data. Hence, the frequency of the data is quarterly, and it runs from 2000: Q1 to 2019:Q4. The technique used to calculate the Q-index follows the approach of Baker et al. (2016) for the EPU (Economic Policy Uncertainty) index.[5] To show the connection between the Q-index and global economic policy uncertainty, the author has demonstrated that the quality of political signals tends to widen the implied relationship between equity market volatility and economic policy uncertainty (see Białkowski, et al, 2022). This implies that the quality of the pollical signal tends to moderate the economic policy uncertainty index in explaining volatility in the equity market. We have taken this stance into consideration by using the economic policy uncertainty index in our analysis to further see how the index plays out in the current nexus [some technical details are provided in the results section].

[4] Data for the individual countries' economic uncertainties can be obtained from https://www.policyuncertainty.com/wui_quarterly.html

[5]See this linkhttps://www.qualityofpoliticalsignals.com /#Q-indices for technical details

To account for some salient features of the countries being examined, we categorize them by their level of financial development, general development status and their choice of exchange rate regimes. For instance, we use IMF data on the financial development index to group the countries into high and low financial development. The financial development index measures the extent of financial institutions and financial market development in any country using their depth, access and efficiency. Constructing the index focuses on normalizing and aggregating sub-unit variables into the overall index. An index with higher value signifies high financial development, and otherwise, a low-value index. Hence, in our categorization, we use 50 as the threshold for grouping the countries into high and low financial development. Countries with 50 or higher index values are regarded as highly developed by financial institutions and markets; otherwise, they are considered to be of a low level of financial development. Thus, this results in 20 high financially developed countries and 13 low financially developed countries. We equally feature country groupings by general development using the categorization in the GVAR model, where the countries are grouped as either advanced or emerging market countries. Lastly, we emphasize each country's choice of exchange rate regime as either running a managed-floating or free-floating exchange rate. However, most of the 15 countries engaged in managed floating are emerging economies, while many of the 18 adopting free-floating are developed countries. The essence of this grouping is to have a nuanced outcome from our analysis, which is believed to give a basis for possible variation in the findings across countries.

3. Some preliminary analyses

The descriptive statistics in Table 1 give some information about the background of the data for each of our variables. According to this information, the mean log value for Q-index is 4.6, while the values for the high- and low-quality index are respectively 2.2 and 2.3. The standard deviation provides further information about the series dispersion for the average value log. The level of dispersion for the aggregate index is as low as 0.172, with a value of 0.037 for the coefficient of variation, suggesting a possible absence of an outlier in the data composition. However, for the log of low- and high-quality values, the dispersion is very high, with respective values of 2.02 and 2.19, while having the same value of 0.915 for the coefficient of variation. As for the real equity prices, the average value (in this case, the risk-adjusted mean values) across these countries ranges between as low as 0.484 for Argentina and as high as 13507.544 for the

South Africa. Argentina, with the lowest average value for real equity, has the highest value for the coefficient of variation [2.066], while the South Africa, on the other hand, has the lowest value of 0.0001. Countries such as United Kingdom, Swedeen, Chile and France also have high risk-adjusted mean values of 1996.994, 671.824, 435.460 and 409.004, respectively, with corresponding coefficient of variation values of 0.001, 0.001, 0.002 and 0.002. Figure 1 presents the co-movement between the quality of political signals for the US and the real equity prices across the representative countries. We observe an inverse relationship between the two variables for many countries from the figure.

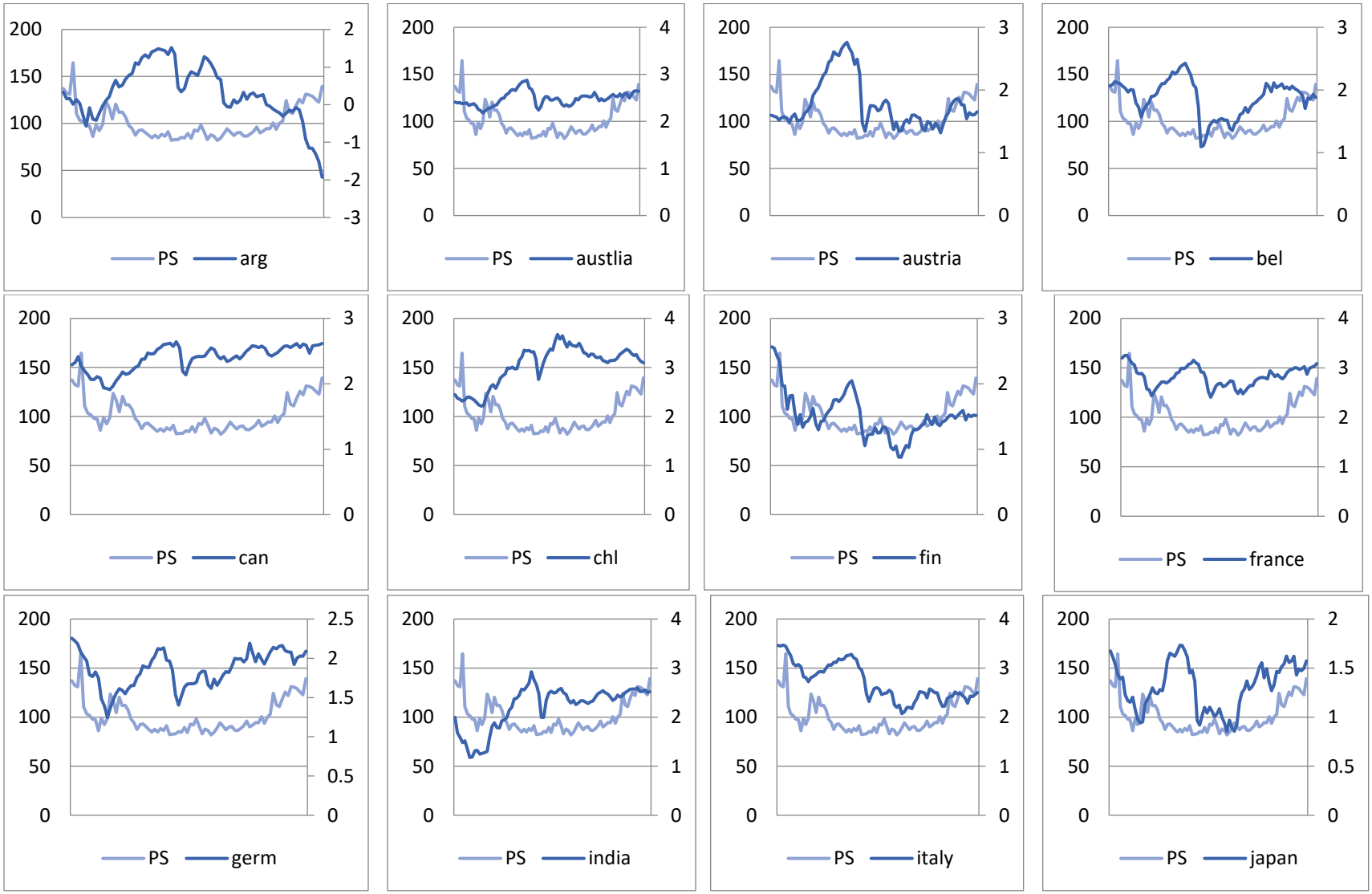
Table 1: Descriptive Statistics

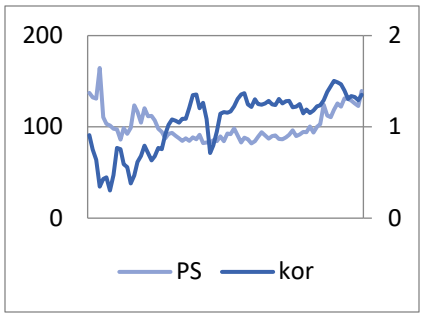
Real equity prices	Mean	Std. Dev.	RoM	CoV
Argentina	2.3	4.688	0.484	2.066
Australia	302.6	1.413	214.164	0.005
Austria`	60.8	2.517	24.155	0.041
Belgium	74.8	1.988	37.651	0.027
Canada	244.1	1.563	156.161	0.006
Chile	1107.2	2.543	435.460	0.002
Finland	30.9	2.116	14.593	0.069
France	650.3	1.590	409.004	0.002
Germany	70.2	1.688	41.571	0.024
India	158.5	2.822	56.149	0.018
Italy	499.5	2.394	208.688	0.005
Japan	20.1	1.751	11.498	0.087
South Korea	11.2	2.078	5.404	0.185
Malaysia	67.0	1.677	39.963	0.025
Netherlands	163.8	1.781	91.972	0.011
Norway	266.5	1.932	137.963	0.007
New Zealand	3.3	1.559	2.094	0.478
Philippine	108.9	2.474	44.026	0.023
South Africa	29892.9	2.213	13507.544	0.000
Singapore	13.3	1.583	8.377	0.119
Spain	14.4	1.601	9.019	0.111
Sweden	1336.7	1.990	671.824	0.001
Switzerland	115.1	1.559	73.862	0.014
Thailand	59.5	2.516	23.662	0.042
United Kingdom (UK)	2698.3	1.351	1996.994	0.001
United States (US)	221.2	1.781	124.194	0.008
Quality of Political Signals				
Composite	4.624	0.172	26.908	0.037
Low Quality	2.214	2.023	1.094	0.915

High Quality	2.393	2.189	1.093	0.915

Note: RoM is the risk adjustment mean, computed as the Mean divided by the corresponding standard deviation; CoV is the coefficient of variation, computed as the Standard deviation divided by the corresponding mean. Also, note that all the variables are expressed in natural logs.

Figure 1: co-movement of Quality of Political Signals for US and Real Equity Prices of advanced and emerging countries

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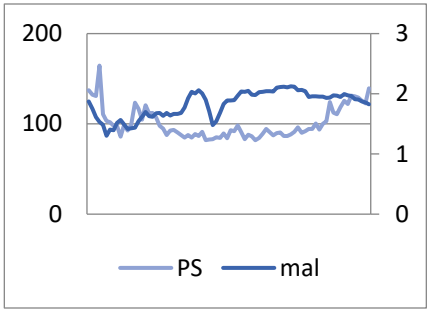
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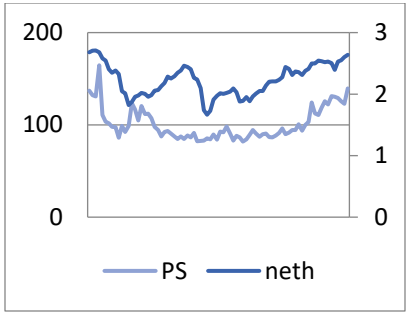
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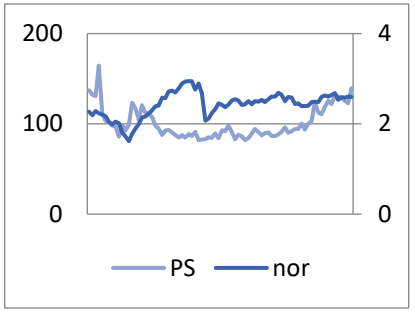
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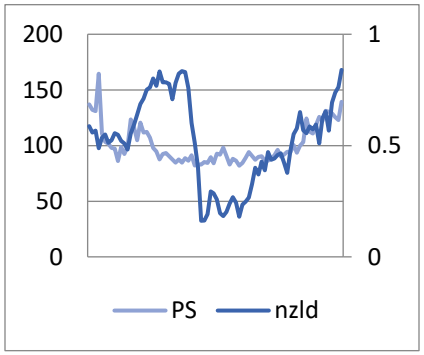
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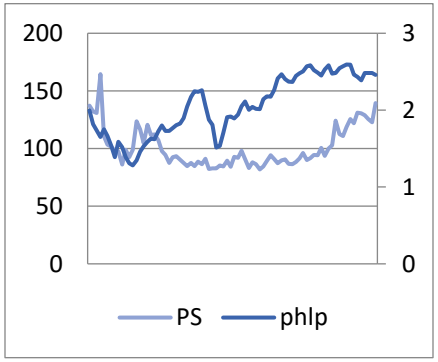
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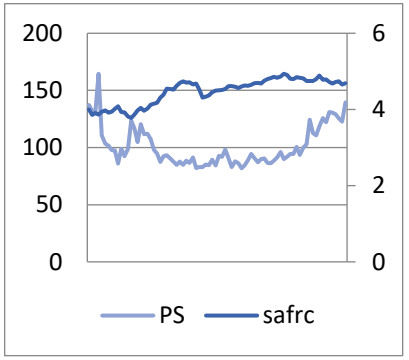
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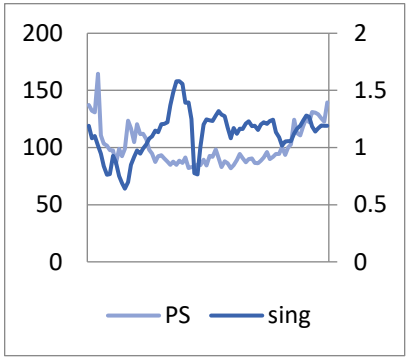
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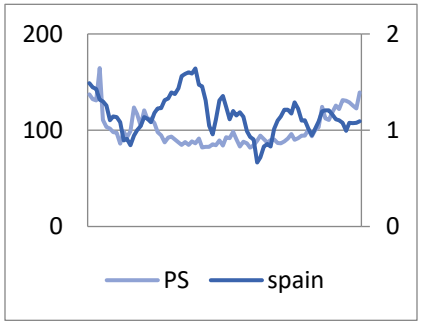
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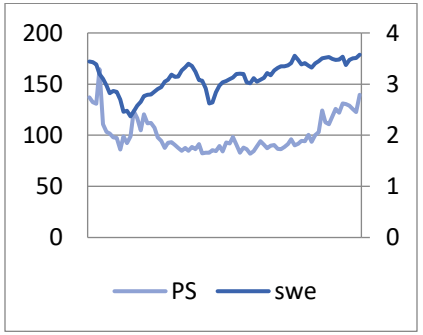
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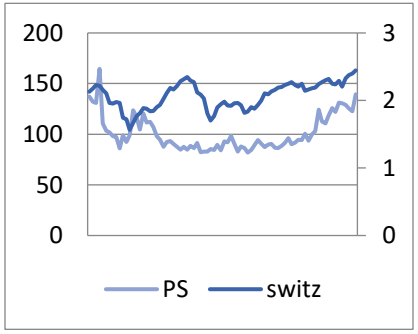
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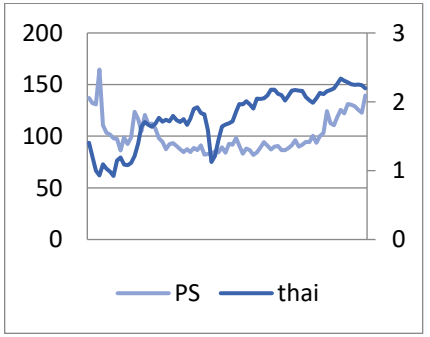
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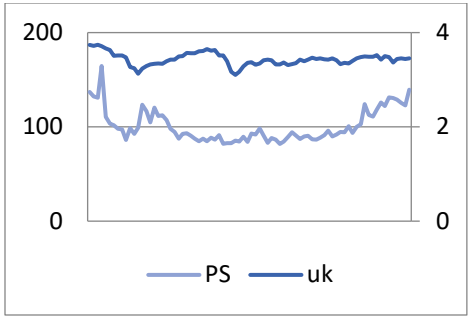
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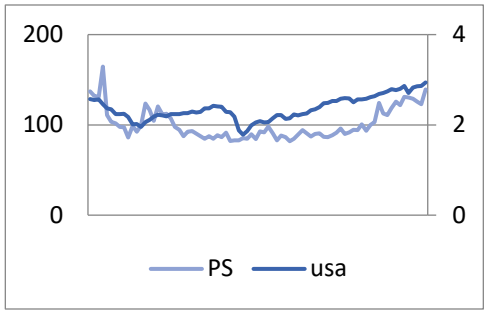
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4. Results and Discussion

4.1 Main Analysis

This study focuses on investigating the shock propagation with respect to US quality of political signals with its attendant impact on global equity markets. The shock is examined under three phases. In the first phase, the consideration is solely on the aggregate value of the quality of political signals with no partitioning, while in the second and third phases, the shock is evaluated as either high or low quality of political signals. A priori, the low-value index corresponds to a period of high-quality signals where the impact is expected to be negative, and the high-value index represents the low-quality signals and is expected to contribute positively to the real equity prices in advanced and emerging market countries. We present our results under these three scenarios, shown in Figures 2 to 7. The impulse response functions (IRFs with thick lines) represent the response to one standard deviation shock to US quality of political signals given the upper and lower bootstrapped 95% error bound (in this case, the broken lines) to show its statistical significance.

In Figure 2, where the composite quality of US political signals is considered, the initial response[6] of real equity prices to the shock is observed to be significant in more than half of the selected countries, particularly for those with strong ties with the US, such as those in Europe as well as Australia, Canada, Japan, Korea, and New Zealand. While the response is negative for these countries, its magnitude is about 1.5% on average. In other words, a one standard deviation unit shock to the quality of US political signals reduces real stock prices of the mentioned countries by about 1.5%.[7] However, the shock effect on real equity prices dissipates after the initial response implying that the US political signal has a transient effect on the equity prices of other developed as well as emerging markets. This suggests potential interference and global connectivity of the US economy on other economies and the dependability of many of these economies on US economic activities. Specifically, as US political noise becomes more precise, the index reduces and the quality soars. At this time, people begin to act with caution and reduce their interaction with the equity market. This action leads to low real-value equity, as in the case of the present study. Unlike other countries, the US response to its own shock is found to be delayed and

[6] This is the response coinciding with the immediate period after the shock.
[7] Note that the IRF values are multiplied by 100 to be able to express them in percentages since the real equity prices are logged.

permanent. The real equity prices respond with the magnitude of 2% and 4%. Thus, while the response is delayed for the US, it tends to have a permanent effect at a later period. At the group level, the countries are categorized using their general development status (into advanced and emerging market economies), financial development status (as either low or high financial development) and the choice of exchange rate being operated (free-floating or managed-floating exchange rate regime). This categorisation is believed to have the potential to explain possible differing stances on the extent of the shock impact across the concerned countries. However, despite this, the responses obtained from the group-level phases are similar to the individual countries' responses. Specifically, the response of all the group classifications, including the developed and emerging markets, is noticed to be instantaneous with a temporary effect, where the shock effect fizzles out immediately after the shock. By magnitude, the shock effect has a greater negative effect on the developed markets, including the Euro area (with about 1.5% response), than the emerging markets, with about 1% impact response (see Figure 3).

For more insightful outcomes, we consider the asymmetric effect that involves splitting the quality signal index into high and low signals rather than the absolute composite index. The results here are presented in Figures 4 and 5, respectively, for the individual countries and groups using a low signal index and Figures 6 and 7 using a high-quality index with the same scope of unit analysis. We find a positively significant impact (at least from the 6^{th} quarter) of the shock to low quality of political signals for the US on the real equity prices across virtually all the developed and emerging economies. This impact exhibits the same trend for both individual countries and groups. Specifically, the shock impact does not become evident immediately after the stock and was only transient beyond which it fizzles out completely for nearly all the countries and the regions considered. This outcome reflects the investors' optimism, which is more likely to be displayed when bad news about political activities is too often rampant. More importantly, the low-quality political signal is a reflection of negative sentiment about the US market, which may result in a weaker dollar (see Figure A1 in the appendix for the response of real exchange rates to low-quality political signal shock)[8] and therefore real equity prices measured in dollars in this

[8] The impulse response for the real exchange rate indicates that shock due to the low quality of political signals strengthens the exchange rates where the US dollar serves as the reference currency. This clearly implies that a weaker dollar due to this shock improves the dollar-referenced exchange rates, ceteris paribus. Consequently, real

instance will be higher relative to the benchmark when the dollar is stable. It is, therefore, not surprising why the real equity prices respond positively to the shock due to the low quality of political signals. The response, however, ranges between 3% and 12% for the individual countries while it ranges between 4% and 8% for the regions, on average, over the forecast horizon. The Euro area and the financially developed countries respond more to low-quality political signals with about 8% impulse response, while the emerging markets record a slightly lower magnitude of about 6%. Thus, limiting the empirical analysis to the composite index may undermine the effect of US quality of political signals on real equity prices of developed and emerging markets.

Regarding the US high quality of political signals, however, we find contrasting evidence with responses obtained from low-quality shock (see Figures 6 and 7) where a unit standard deviation shock, in this case, lowers real equity prices for both individual countries and regions. This direction of impact can also be justified via the exchange rate channel where a stronger dollar due to a high quality of political signals weakens the dollar-referenced categories, ceteris paribus (see Figure A2 in the appendix for the response of real exchange rates to high-quality political signal shock) and consequently, real equity prices measured in dollars will fall. However, the response here, which becomes noticeable in the second quarter, is faster than that of the low quality, where the response is not evident until after some forecast horizon. In other words, the markets respond more to bad news (via the exchange rate channel) resulting from high-quality political signals than good news associated with low-quality political signals. By implication, our results suggest a kind of asymmetric impact of US quality of political signals on the real equity markets. Like in the low-quality case, the Euro area and financially developed countries also respond more to high-quality political signals with about 8% impulse response, closely followed by emerging markets with about 7%. The consistently greater response of the Euro area to the US quality of political signals further underscores the strong political and economic ties between the two entities. As a matter of emphasis, to answer why the quality of political signals in the US could be more pronounced in its impact on real equity prices of other countries, we give an account of this to the exchange rate route. Most of these countries are US-allied trading partners and are financially dependent on the US economy. Hence, any political change that gives strength and

equity prices measured in dollars will rise, so the exchange rate channel offers a plausible explanation for the connection between political signals and equity prices.

weakness to the US economy is expected to correspondingly manifest in the economies of these countries (see Chuliá et al., 2017).

4.2 Additional Analysis

We further present additional evidence on the subject matter by considering the possible effect of Global Economic Policy Uncertainty (GEPU) on real equity prices. The computation of Global Economic Policy Uncertainty involves normalizing country-specific EPU indices to a mean of 100 between the starting period in 1997 and the year 2015. It considers 21 countries that typically include many countries in the GVAR model, such as Australia, Brazil, Canada, Chile, Columbia, France, Germany, India, Italy, Japan, Mexico, the Netherlands, Spain, Sweden, the UK and the US. Like in the case of US quality of political signal, GEPU is an in-text data whose computation involves using national articles that contain the trio terms: Economy (E), Policy (P) and Uncertainty (U). After normalization, the index is weighted using two variants of GDP: the current-price GDP and the PPP-Adjusted GDP. In the present analysis, we consider an index with PPP-adjusted so as to conform to other data compositions.

Like in the previous case, both symmetric and asymmetric shock effects are evaluated, and the results are presented in Figures 8 to 13. For the composite shock, the response of real equity prices to GEPU shock is found to reduce real equity prices instantaneously and lingers till long run. However, while it is instantaneous in all the countries considered, the effect becomes permanent in more than 75% of these countries. Additionally, the response from group-level consideration is further found to exhibit a similar trend, albeit for emerging market countries, low financially developed countries and countries operating managed floating exchange rates. This outcome is not surprising as the computation of GEPU considers the economic activities of many of these countries.

Consequently, the effect is expected to be direct and strong. Unlike the US quality of political signal, whose shock impact is transmitted via the exchange rate route and, as a result, with inverse effect, the presence of economic policy uncertainty in an economy constitutes a form of negative sentiment whose impact is expected to reduce real equity prices regardless of country of concern. Our outcome in this case goes with this stance (see Figures 8 and 9).

However, we find contrasting evidence for the asymmetric analysis. For the low GEPU (see Figures 10 and 11), the shock impact results in an instantaneous increase in real equity prices for all the countries and regions considered, albeit with a transient effect (mostly lingers for 2 quarters and

with less than 10% impact magnitude). While this foregoing becomes evident for low GEPU, shock responses to High GEPU (see Figures 12 and 13) lead to an immediate and temporary reduction in real equity prices (the effect only manifests within 2 quarters). This additional analysis provides more evidence that suggests an asymmetric effect between low and high GEPU. Therefore, while the route of shock impact for US quality of political signal comes from the exchange rate channel, shock GEPU appears to be more direct and stronger as its computation involves others than the US economy.

5. Conclusion

This study employs a Global Vector Autoregressive (GVAR) framework to investigate the impact of shock emanating from the quality of political signals in the US on equity markets of 32 advanced and emerging countries (besides the US). Aside from taking its impact on the aggregate level concerning the equity market, further analysis was made by decomposing the signals into low and high-quality political signals for the US economy. Our data frequency is defined by the availability of data on the index of quality of political signals covering the period of 2002Q1 to 2023Q3.

Our finding suggests the asymmetric impact of a shock on the quality of political signals on real equity prices. When the aggregate index was used, the impact was transient and only apparent in the real equity market for some selected countries, particularly those with strong ties with the US. However, after decomposing the quality of political signals into low and high, the impact of the shock becomes pronounced on the equity market across the regions and countries. Shock to low quality of political signals manifests in real equity prices with higher prices, though with a slightly delayed impact and the shock response to high-quality, signals were found to reduce the equity prices with immediate impact. By implication of the response with high- and low-quality signals, the shock impact varies significantly across the countries and regions. However, additional analysis involving shock to GEPU directly increases real equity prices for low GEPU and otherwise for high GEPU. This outcome is better explained given the GEPU computation involving country-specific features.

Our results imply that when the political situation in the US becomes rather stable, the quality of political signals turns high, which improves the exchange rate via the US dollar, and this effect gets transmitted into the global equity market with a fall in prices. At the same time, lower-quality signals (more imprecise news/bad news) weaken the dollar in relation to the reference

category, thus leading to rising equity prices. By implication, the investors possibly induce their portfolio risks by diversifying more into developed equity markets (more of European countries) than those of other emerging countries when the US political situation becomes tense and otherwise when it becomes stable. This explains the high prices of real equities in the period of low-quality political risk in developed countries, particularly the Euro area and the low prices of real equity in the period of high-quality signals. For policy implication, since stock market prices rise with low political quality signals and fall with high-quality political signals, the shock effect in this regard is likely to be immediate and prolonged via the equity markets, and hence the need for monetary authorities to respond swiftly via monetary policy to maintain stable exchange rate as a way to keep the relevance of their equity market and equity prices.

Availability of data and material (data transparency):

The data that support the findings of this study are available at http://www.econ.cam.ac.uk/peoplefiles/emeritus/mhp1/GVAR/GVAR.html for the GVAR database and https://www.qualityofpoliticalsignals.com/#Qindices for US Quality of Political Signals.

Declaration of Conflict of Interest

The authors do not have any conflict of interest in the subject matter or materials discussed in this manuscript.

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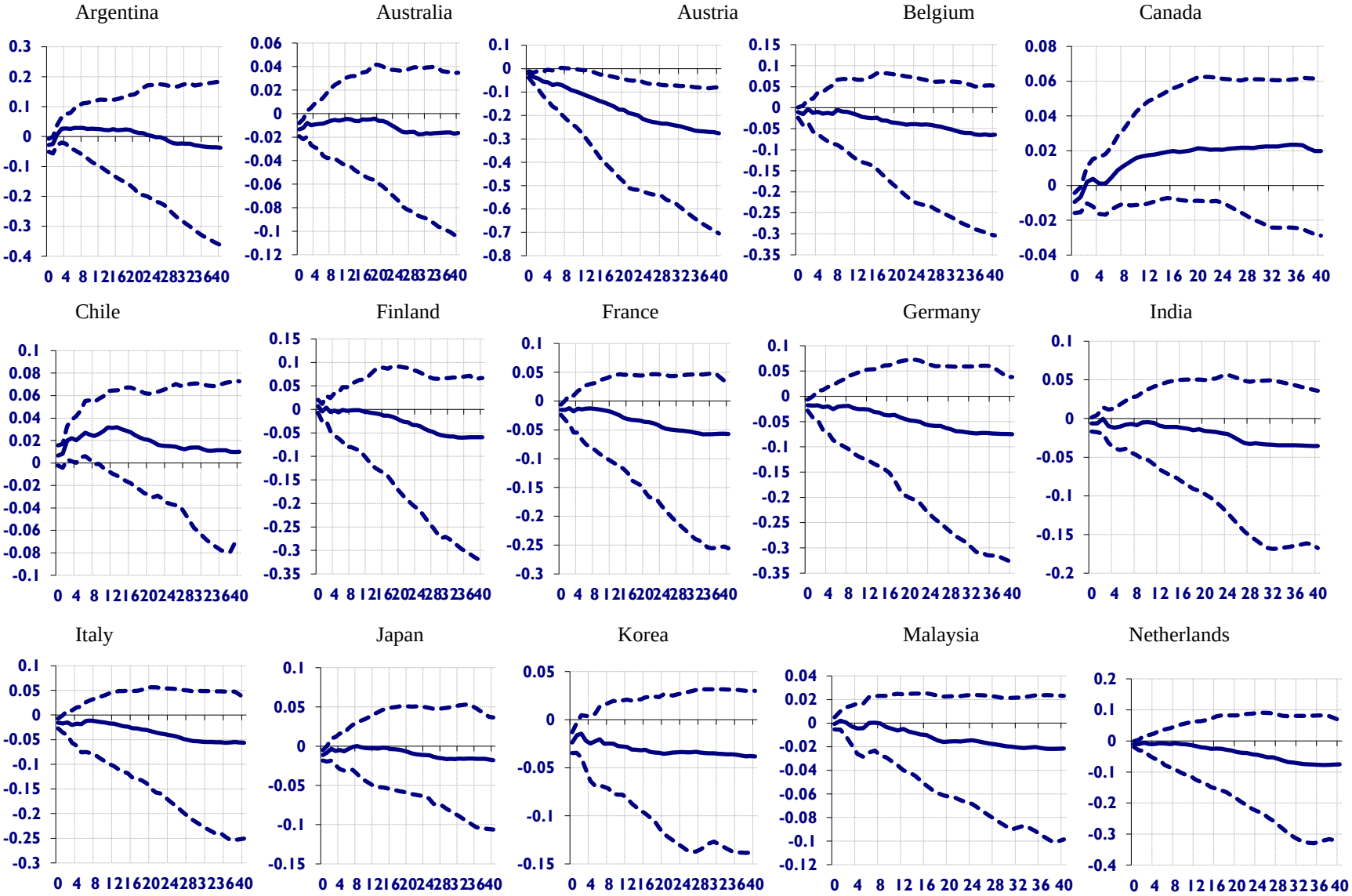
Figure 2: Country-specific Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to US Quality of Political Signals



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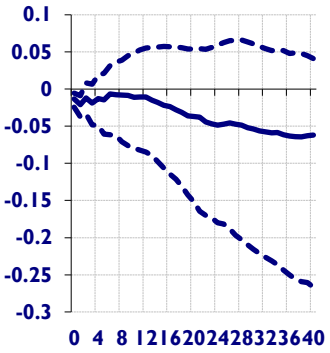

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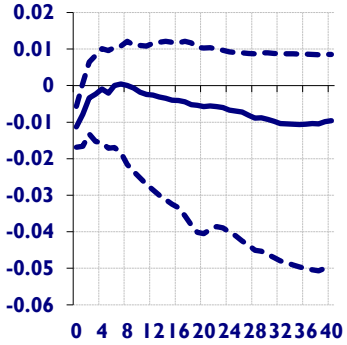

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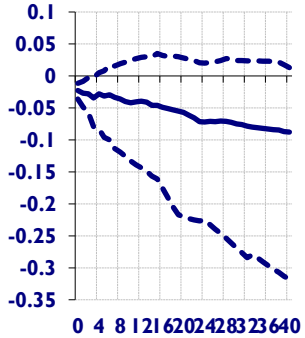
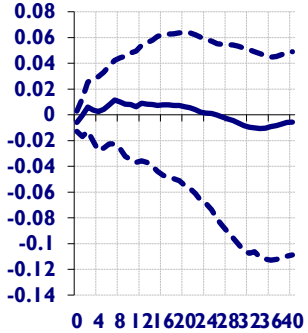


South Africa



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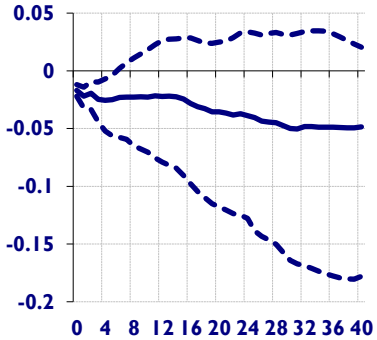

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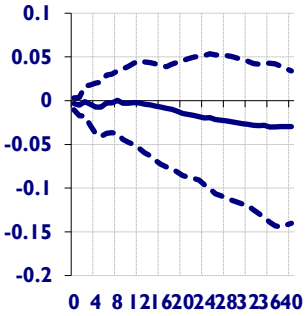
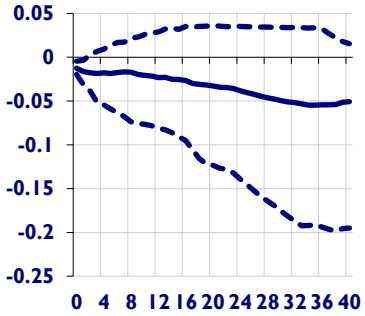
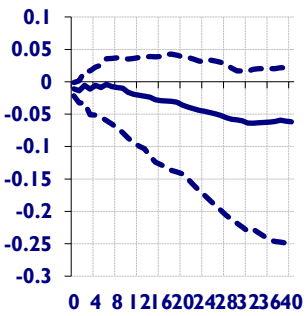


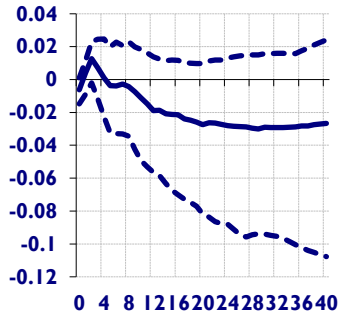
Sweden



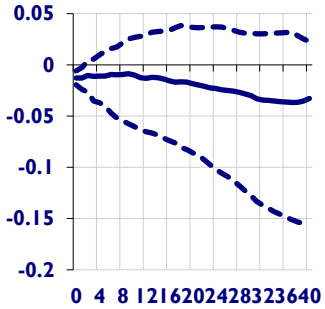
Switzerland



Thailand



UK



USA

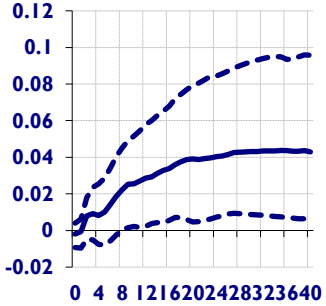
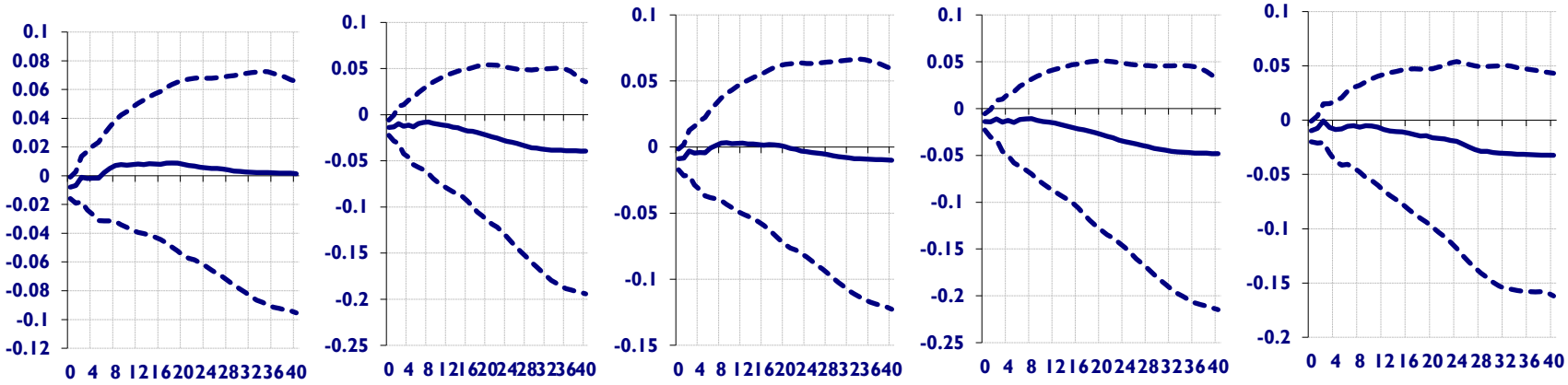


Figure 3: Group Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to US Quality of Political Signals

G-7 G-7 less US Developed market Dev. Market less US Emerging market



Euro High Fin. Development Low Fin. Development Free-Floating Ex. Rate Mangd-Floating Ex. Rate

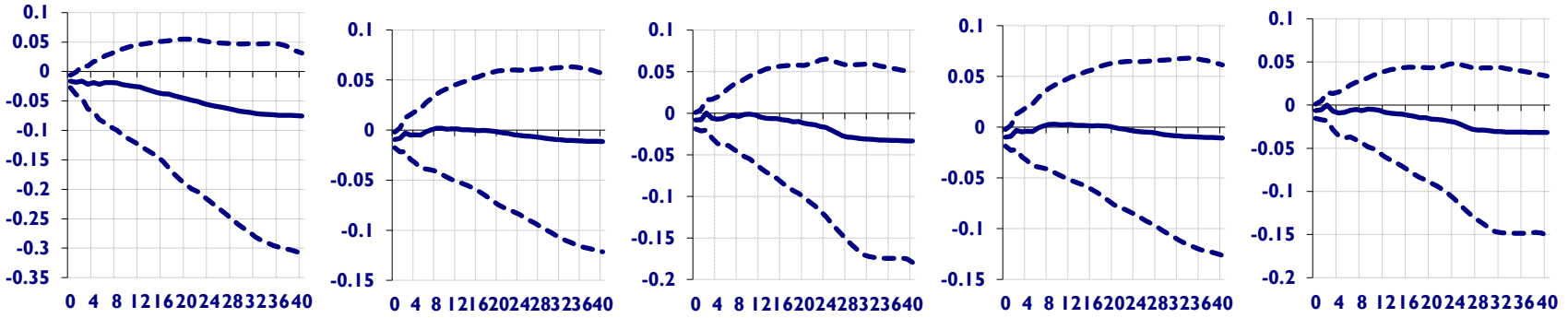
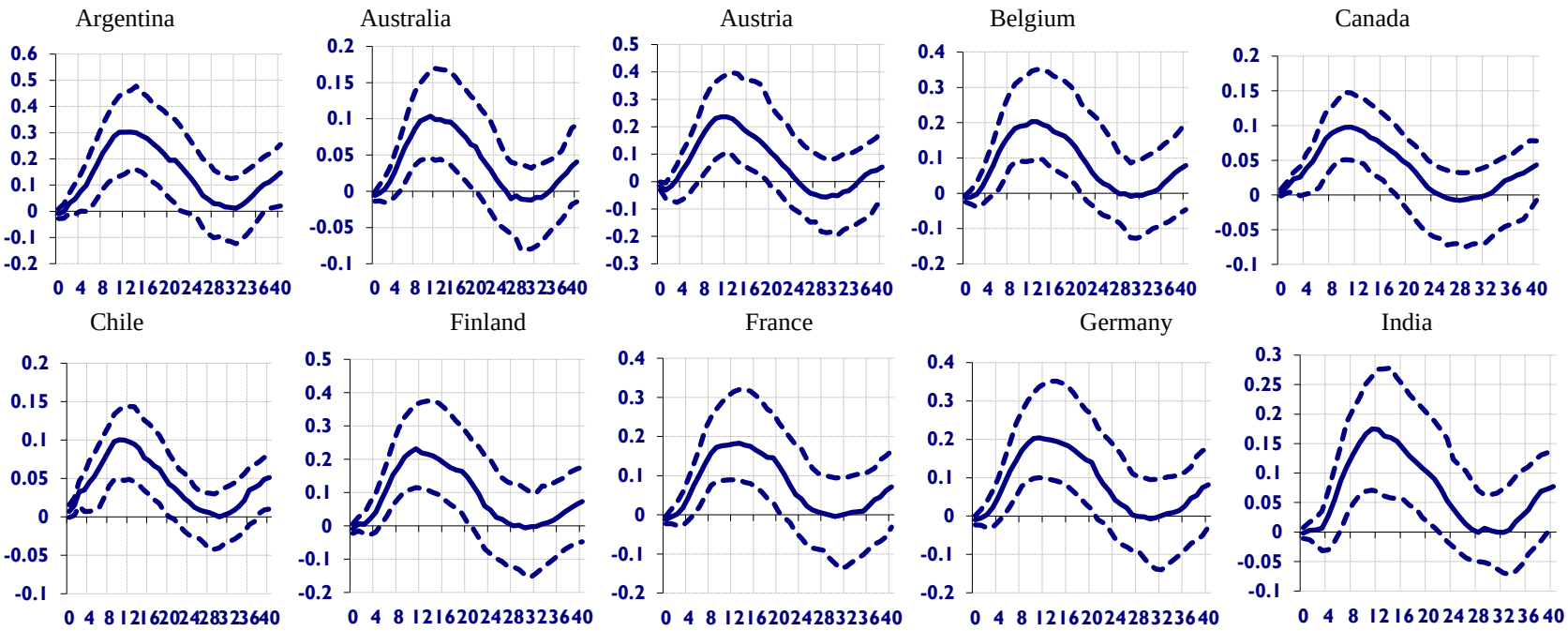
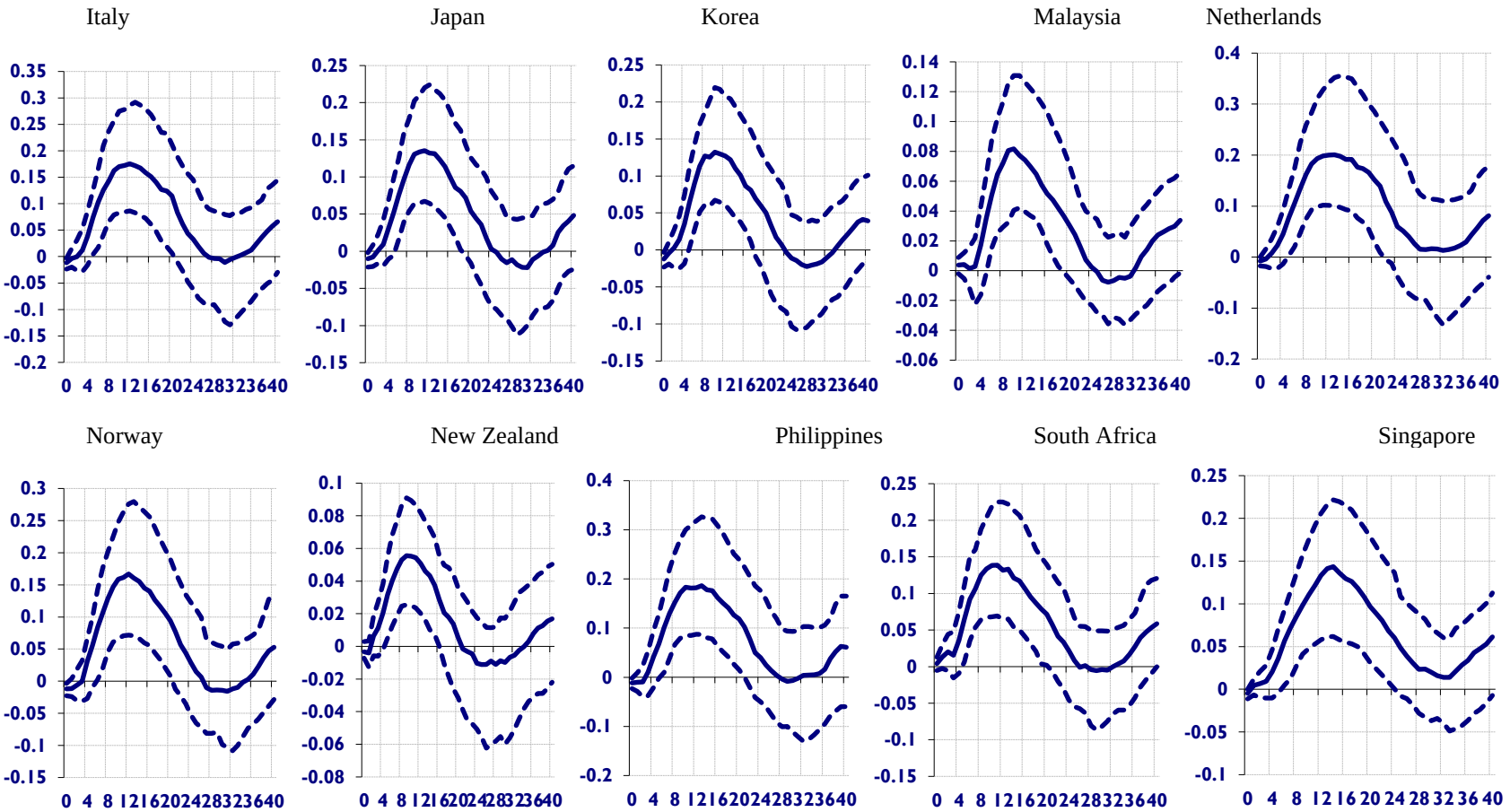


Figure 4: Country-specific Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to US Low Quality of Political Signals

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Norway
New Zealand
Philippines
South Africa
Singapore

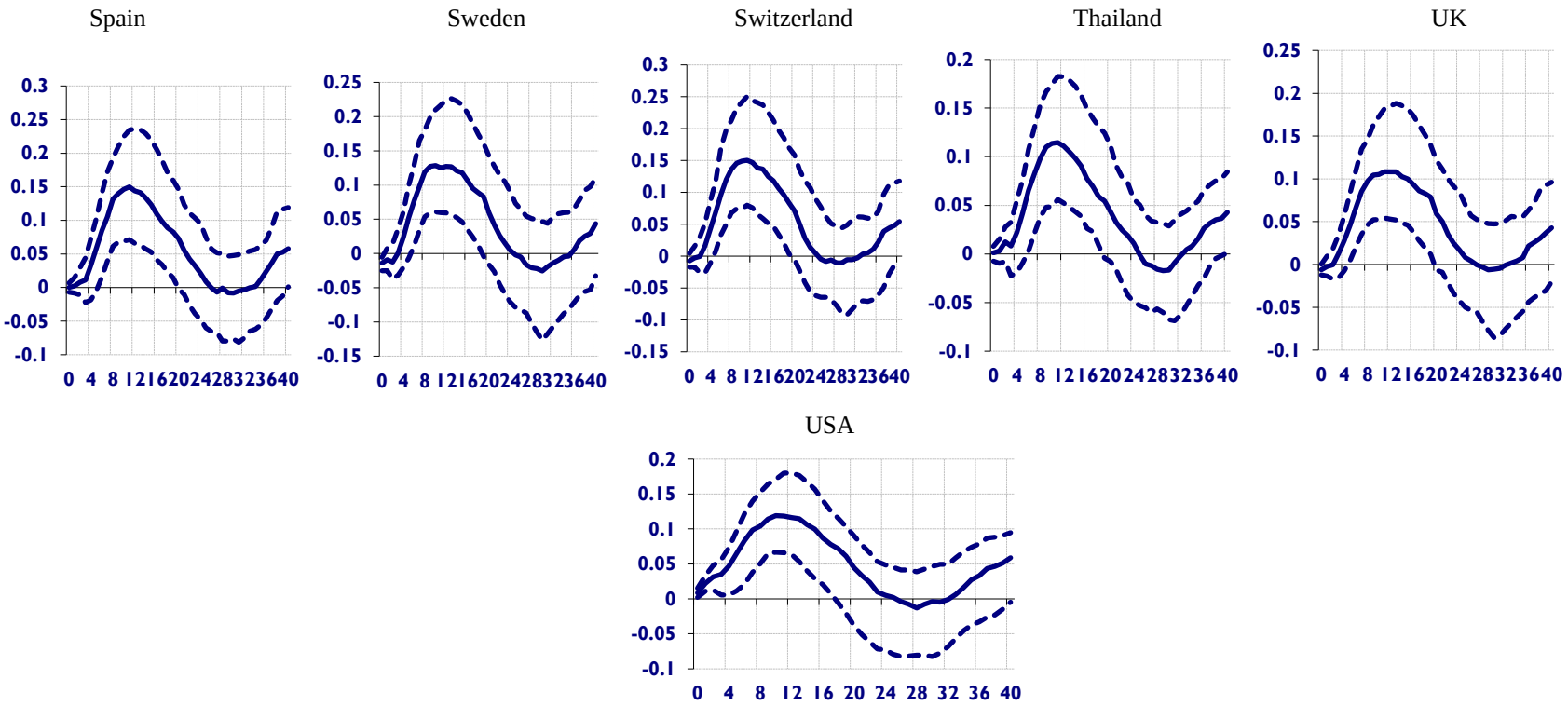


Figure 5: Group Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to US Low Quality of Political Signals

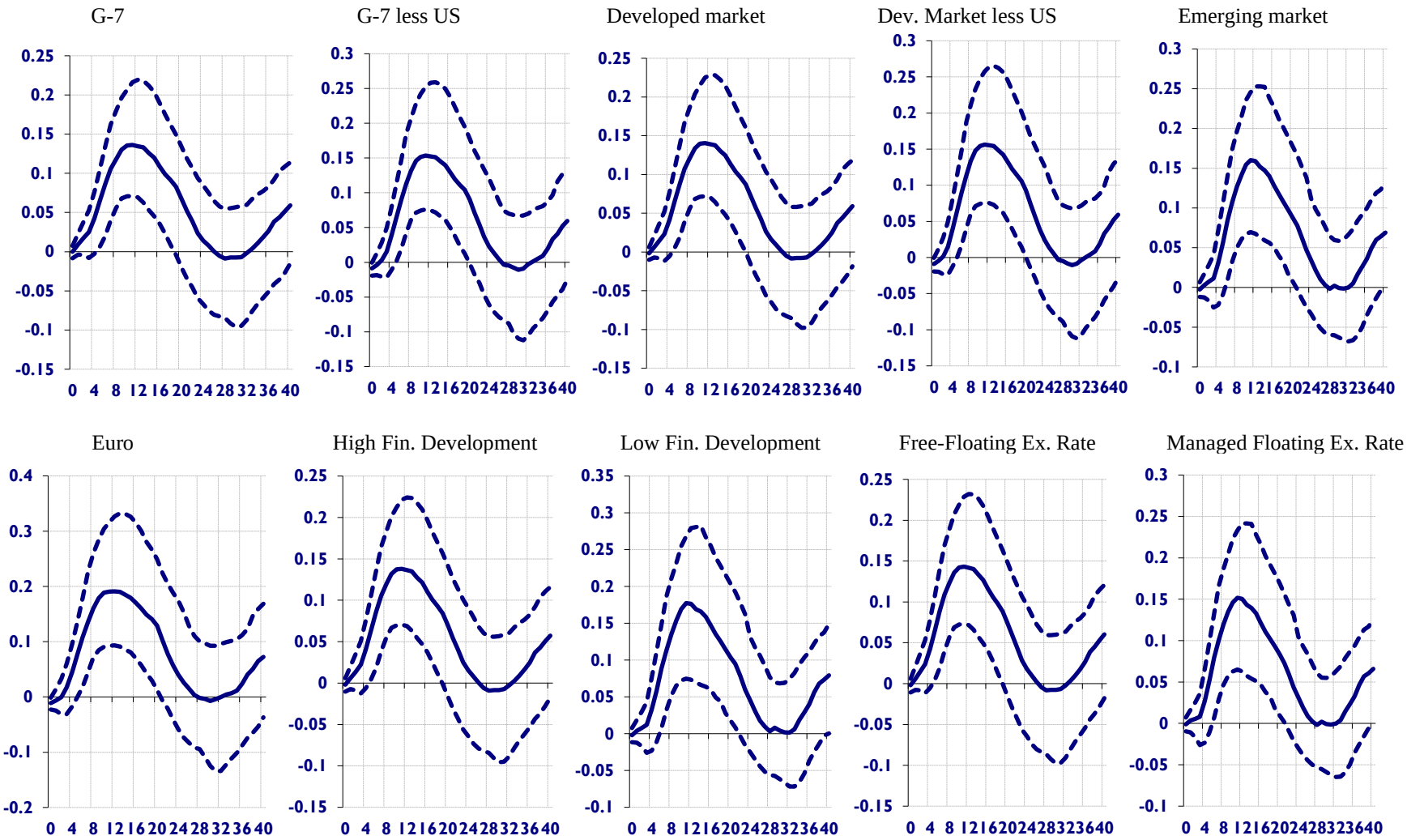
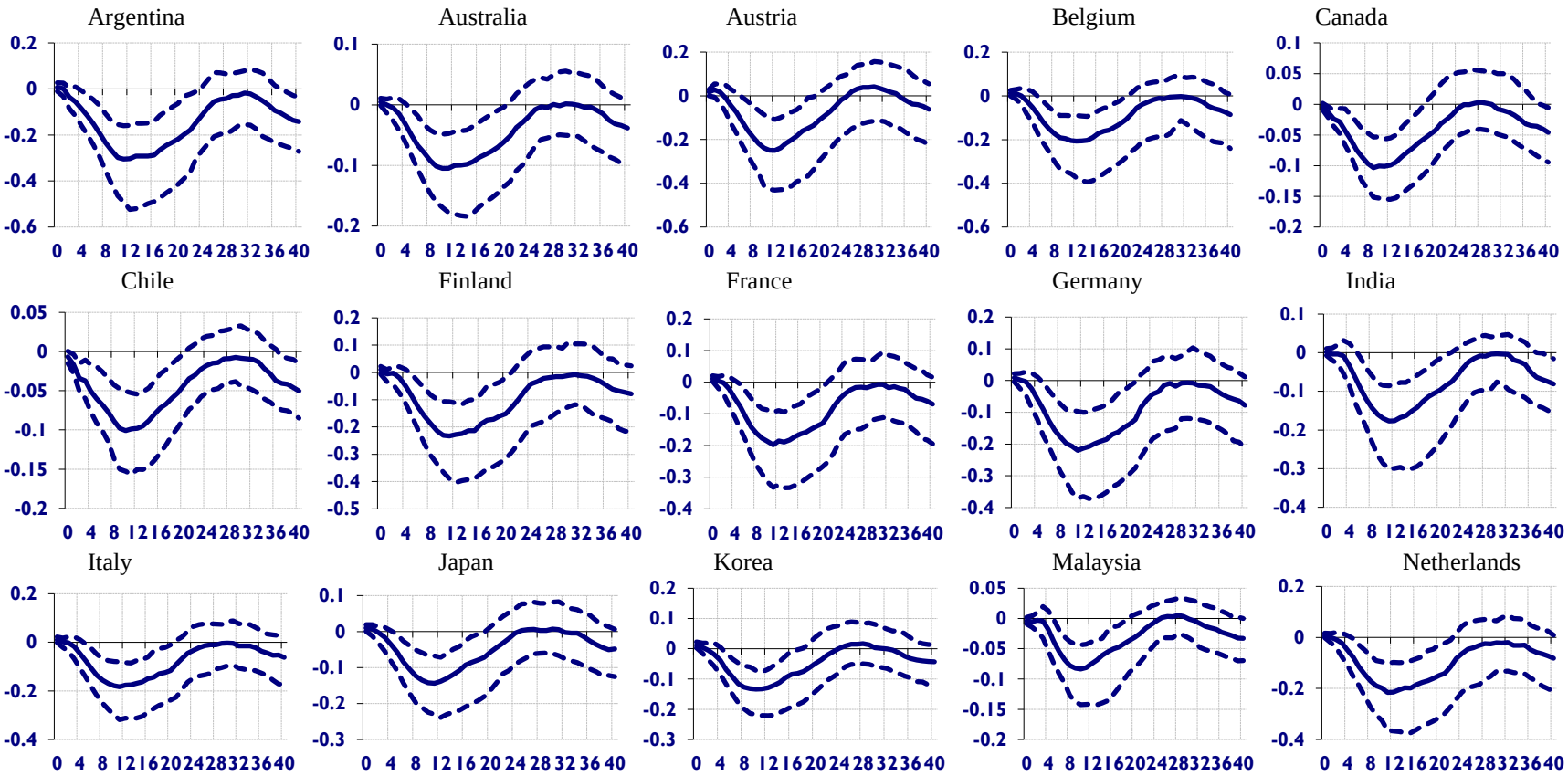


Figure 6: Country-specific Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to US High Quality of Political Signals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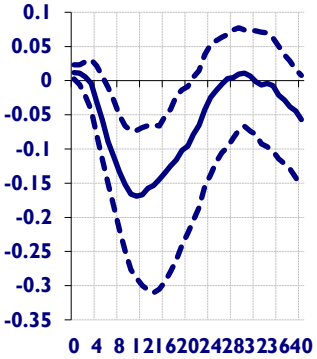
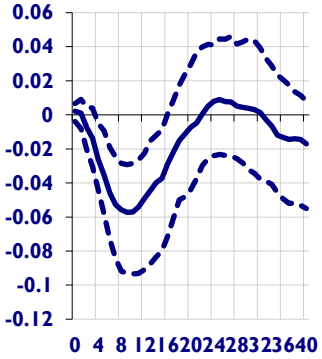
Netherlands

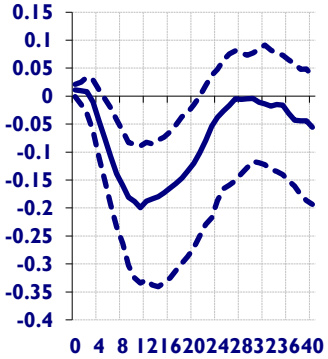
Norway



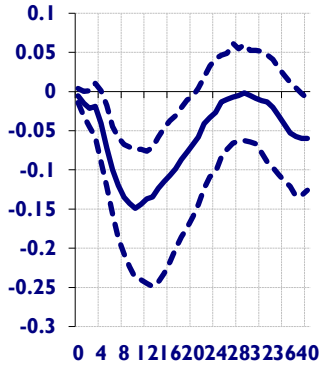
New Zealand



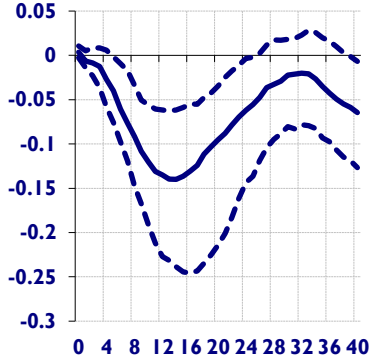
Philippines



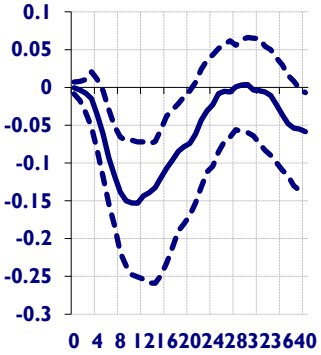
South Africa



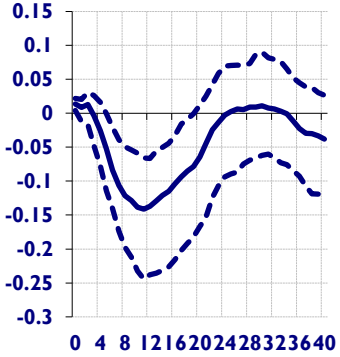
Singapore



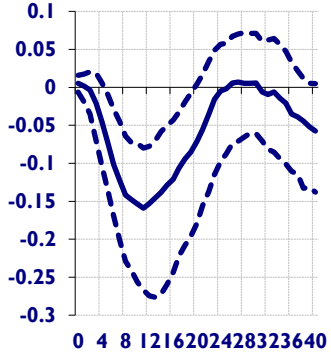
Spain



Sweden



Switzerland



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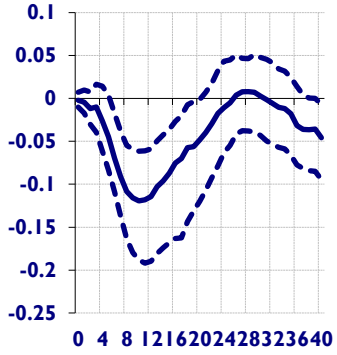
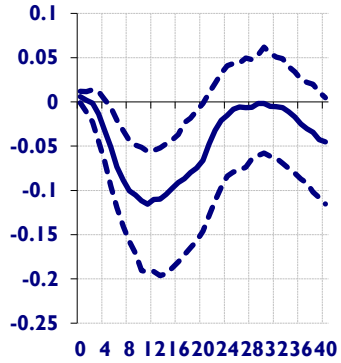


UK



USA

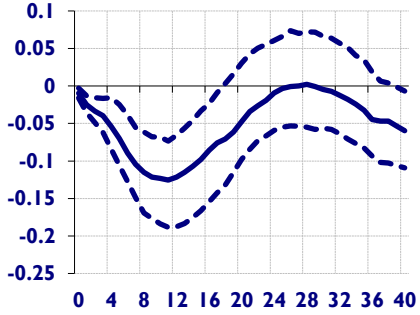


Figure 7: Group Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to US High Quality of Political Signals

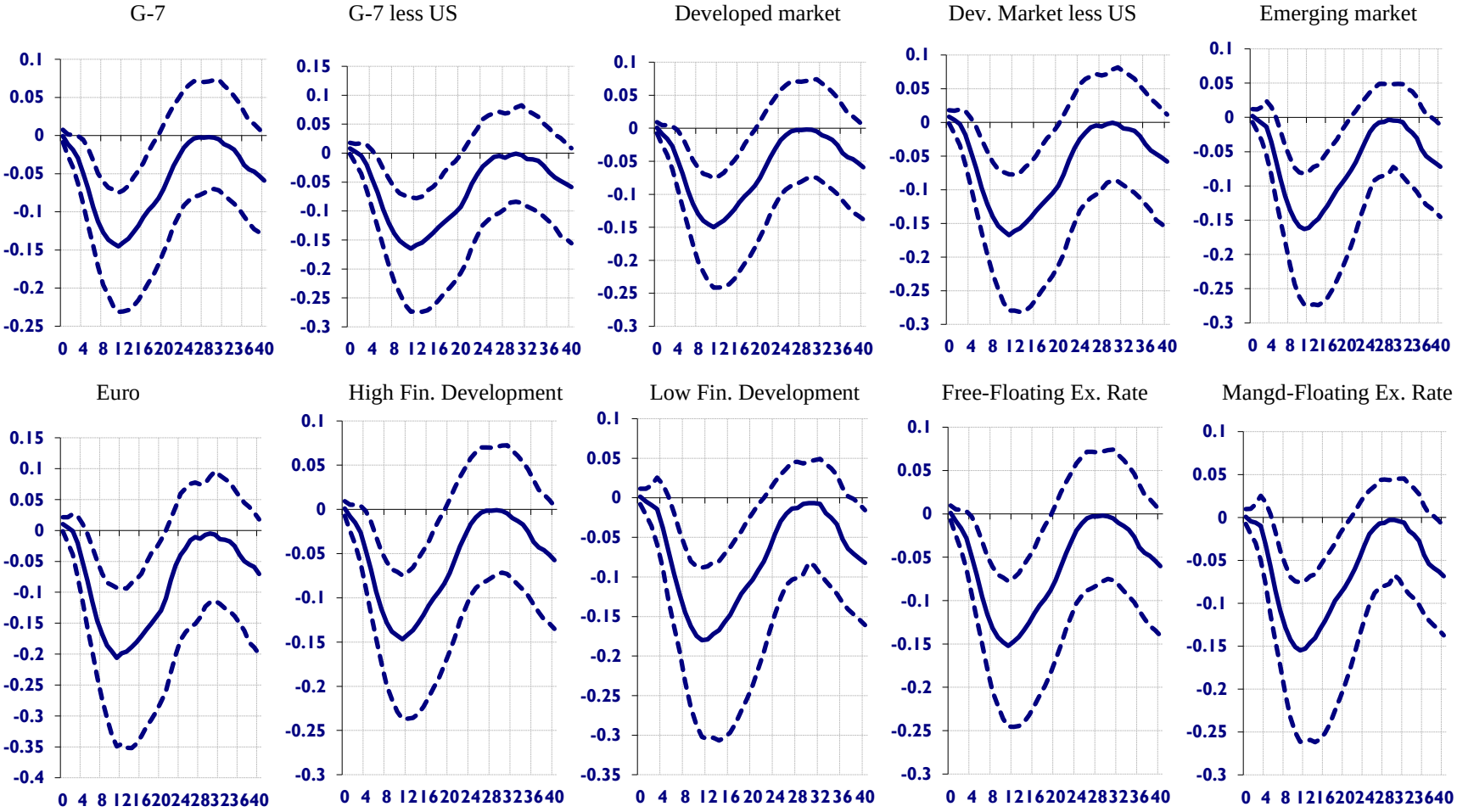
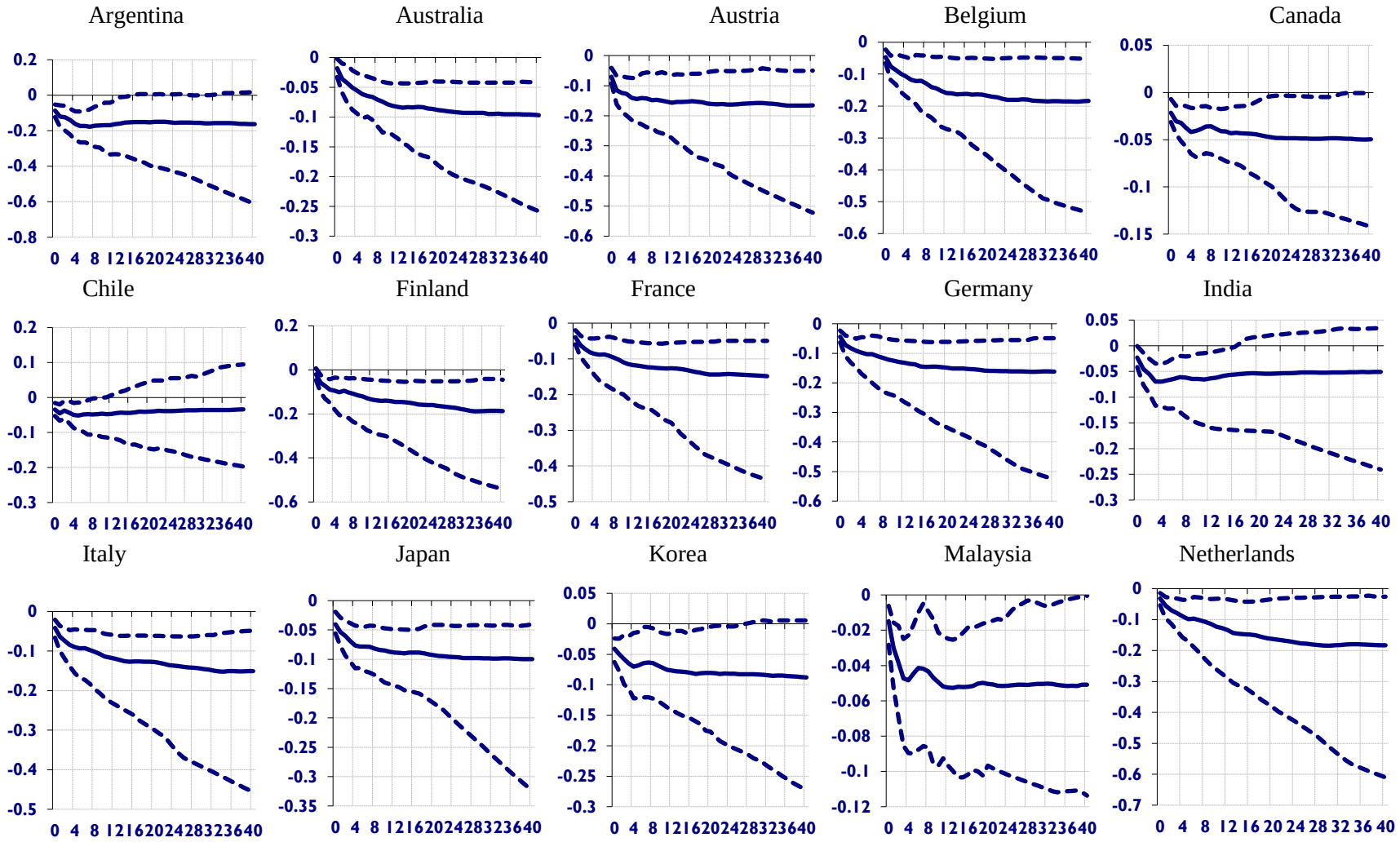


Figure 8: Country-specific Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to EPU



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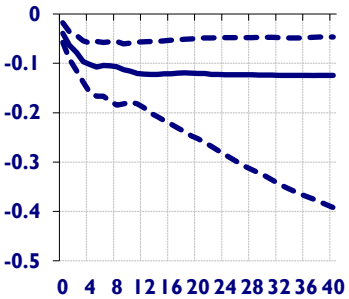

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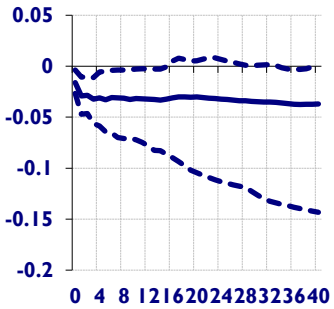

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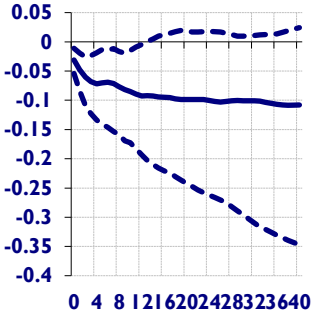

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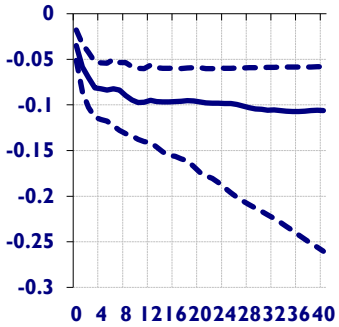

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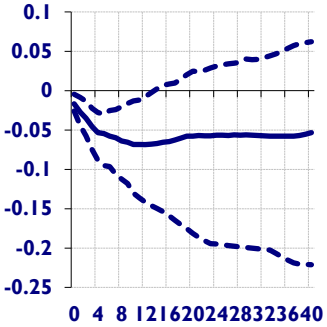

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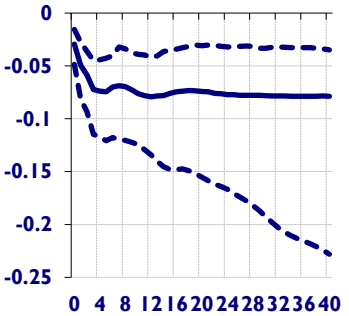

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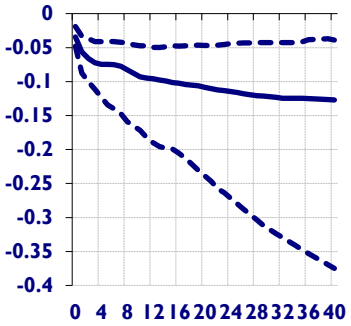

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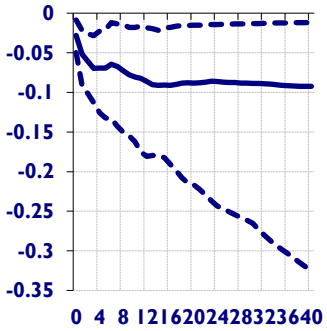

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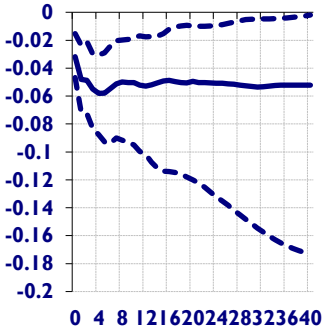

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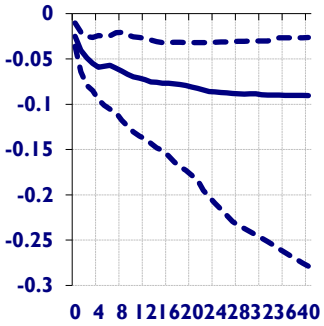

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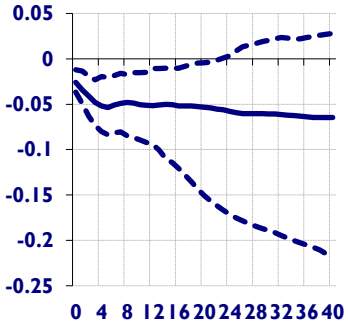


Figure 9: Group Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to EPU

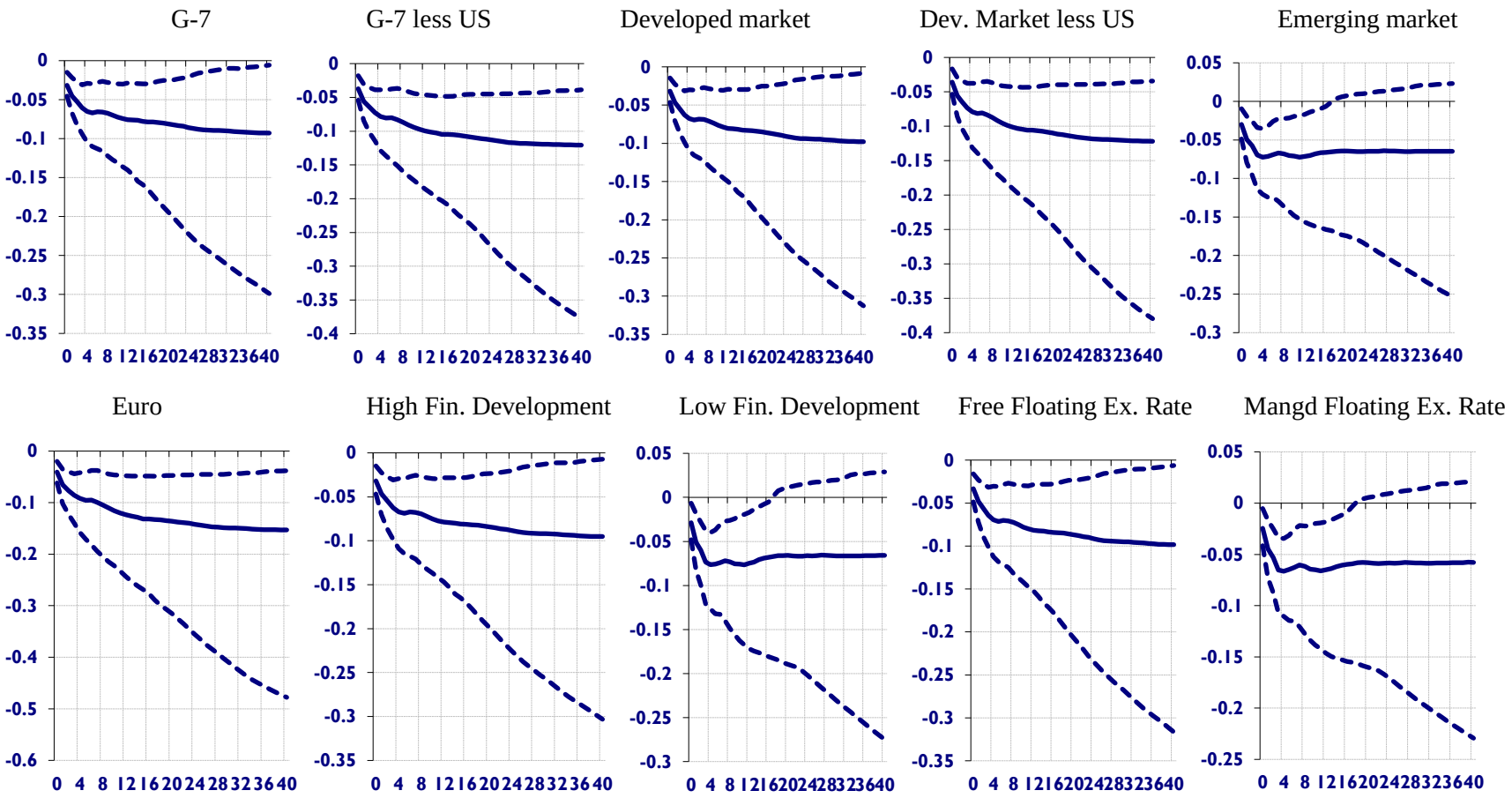
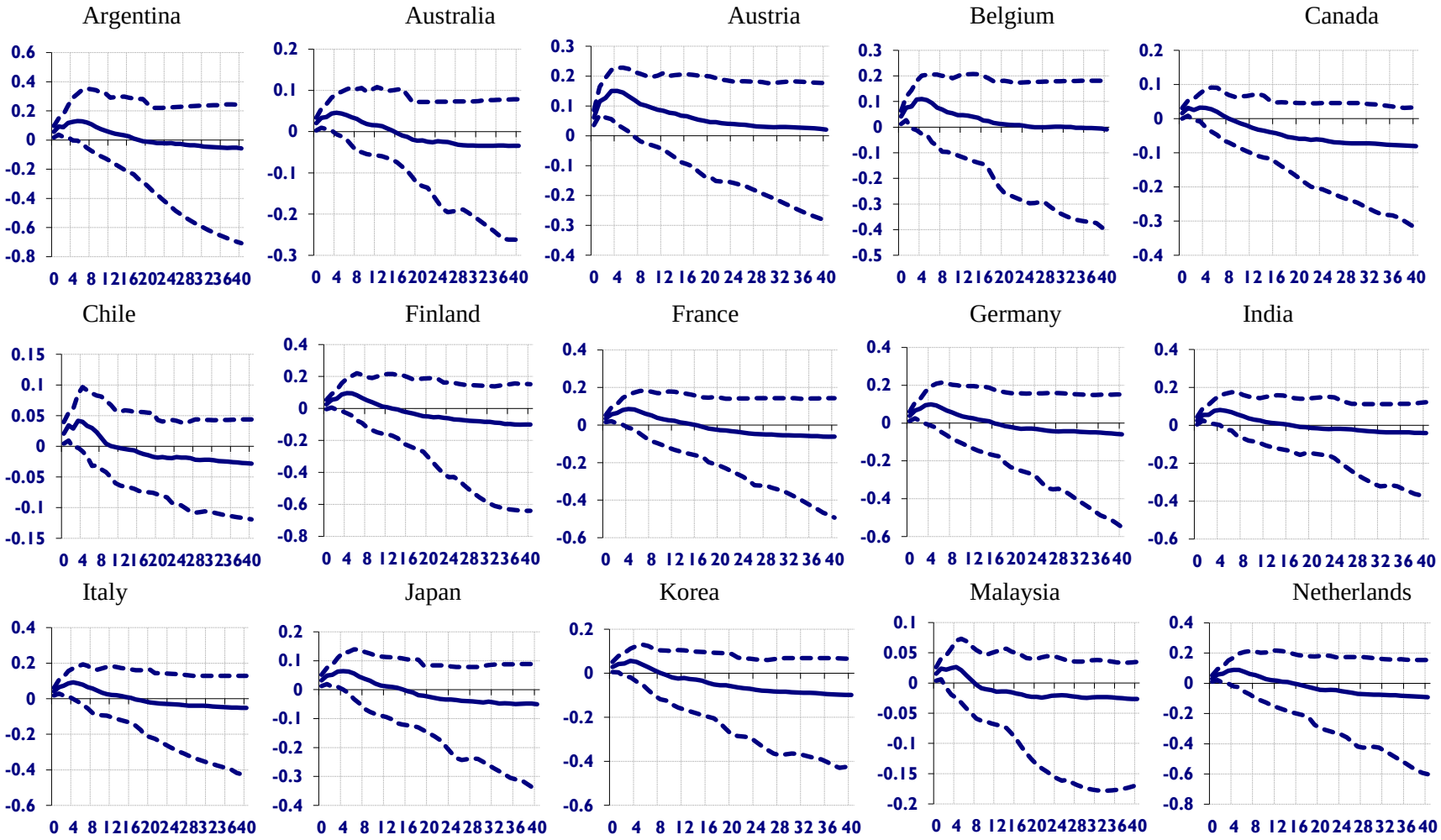


Figure 10: Country-specific Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to Low EPU



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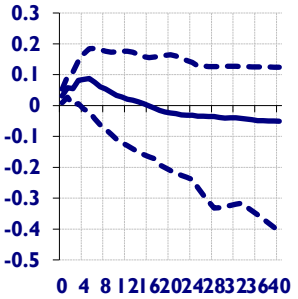

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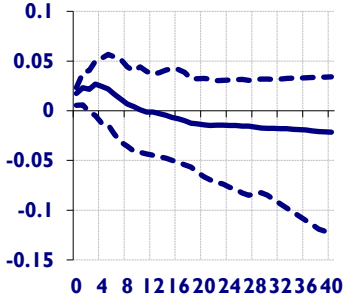

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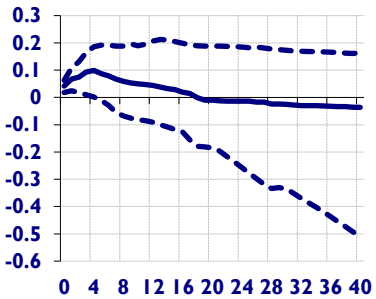

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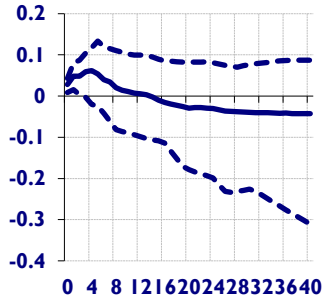

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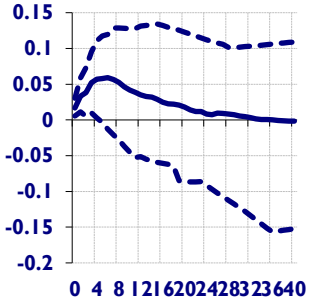

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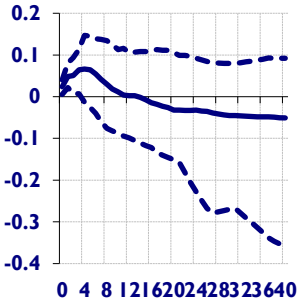

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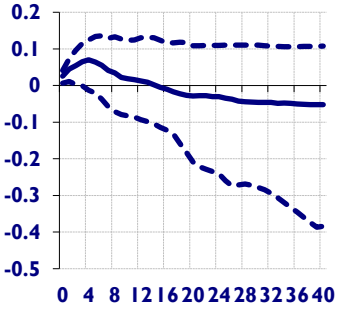

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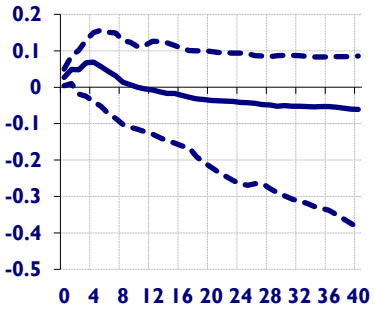

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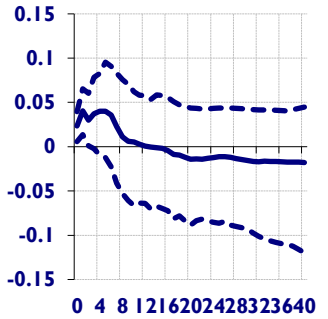

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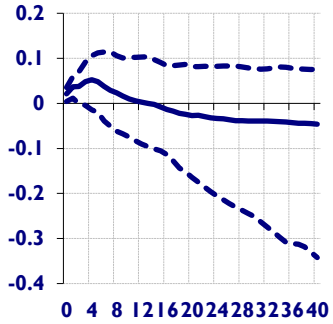

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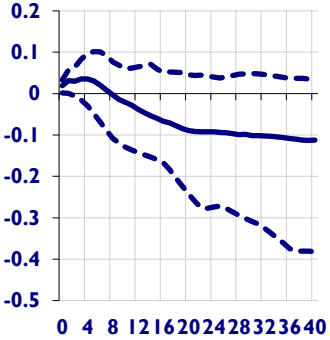


Figure 11: Group Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to Low EPU

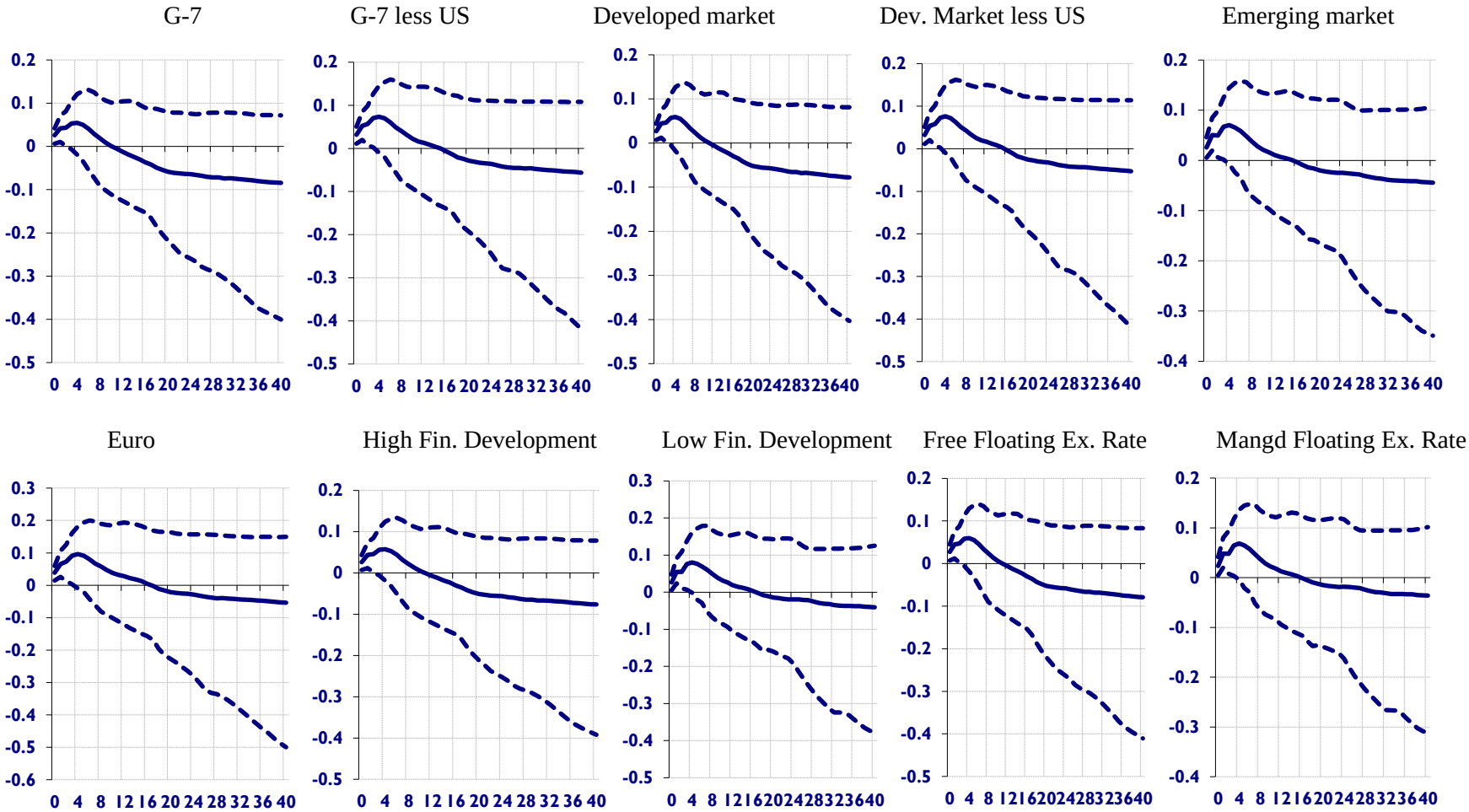
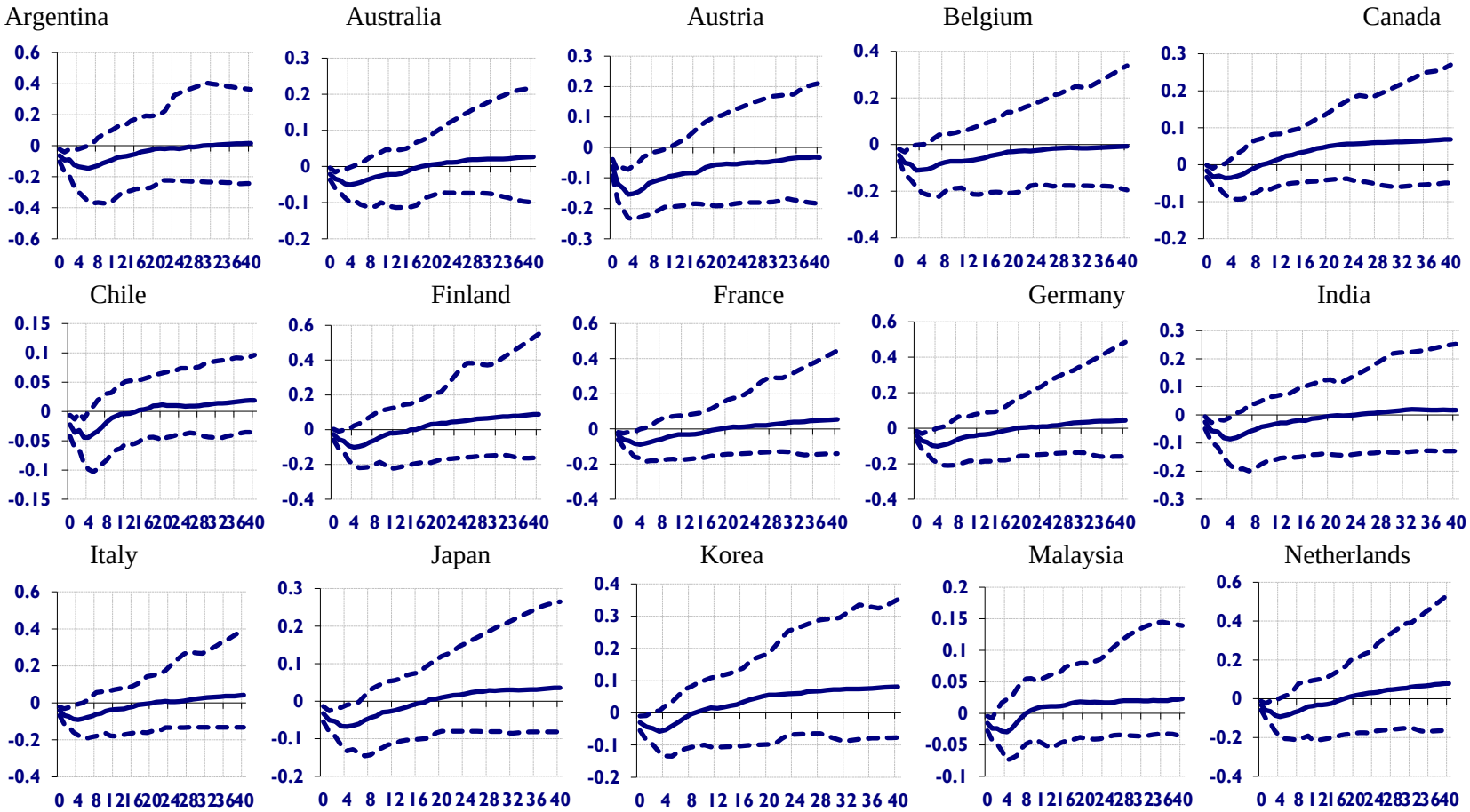


Figure 12: Country-specific Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to High EPU



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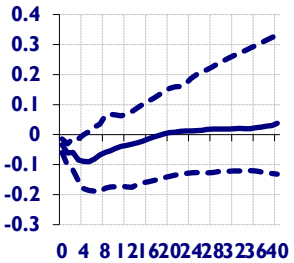

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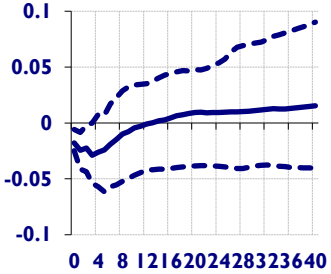

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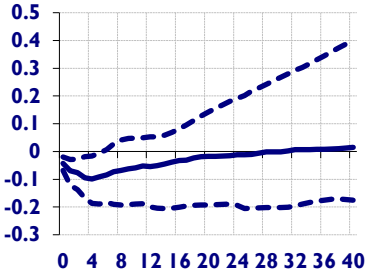

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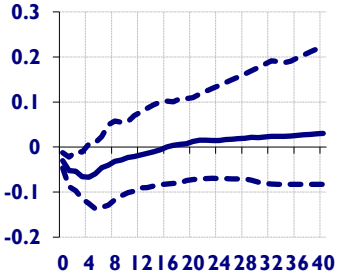

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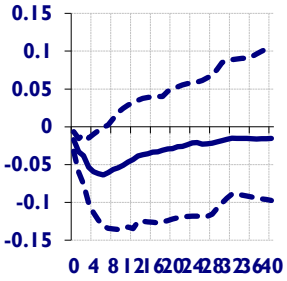

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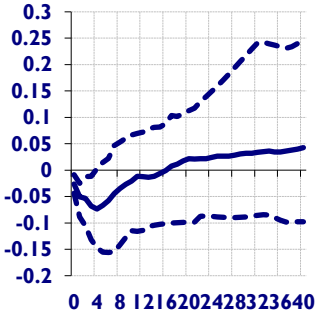

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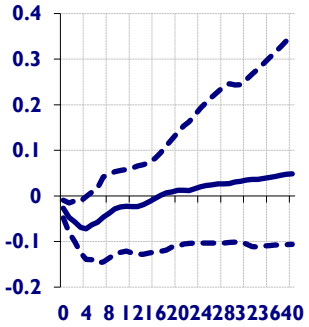

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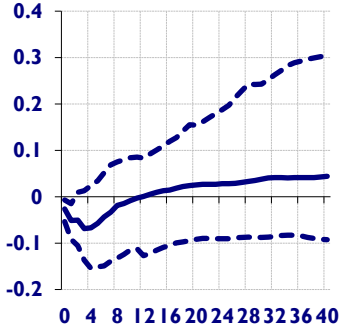

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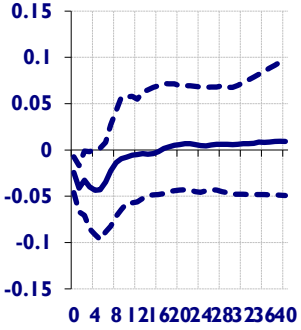

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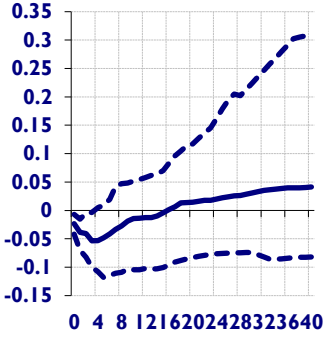

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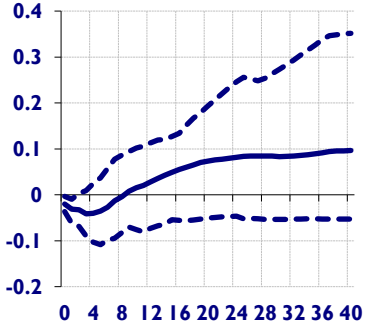


Figure 13: Group Impulse Response Functions of Real Equity Prices to a One Standard Deviation Unit Shock to High EPU

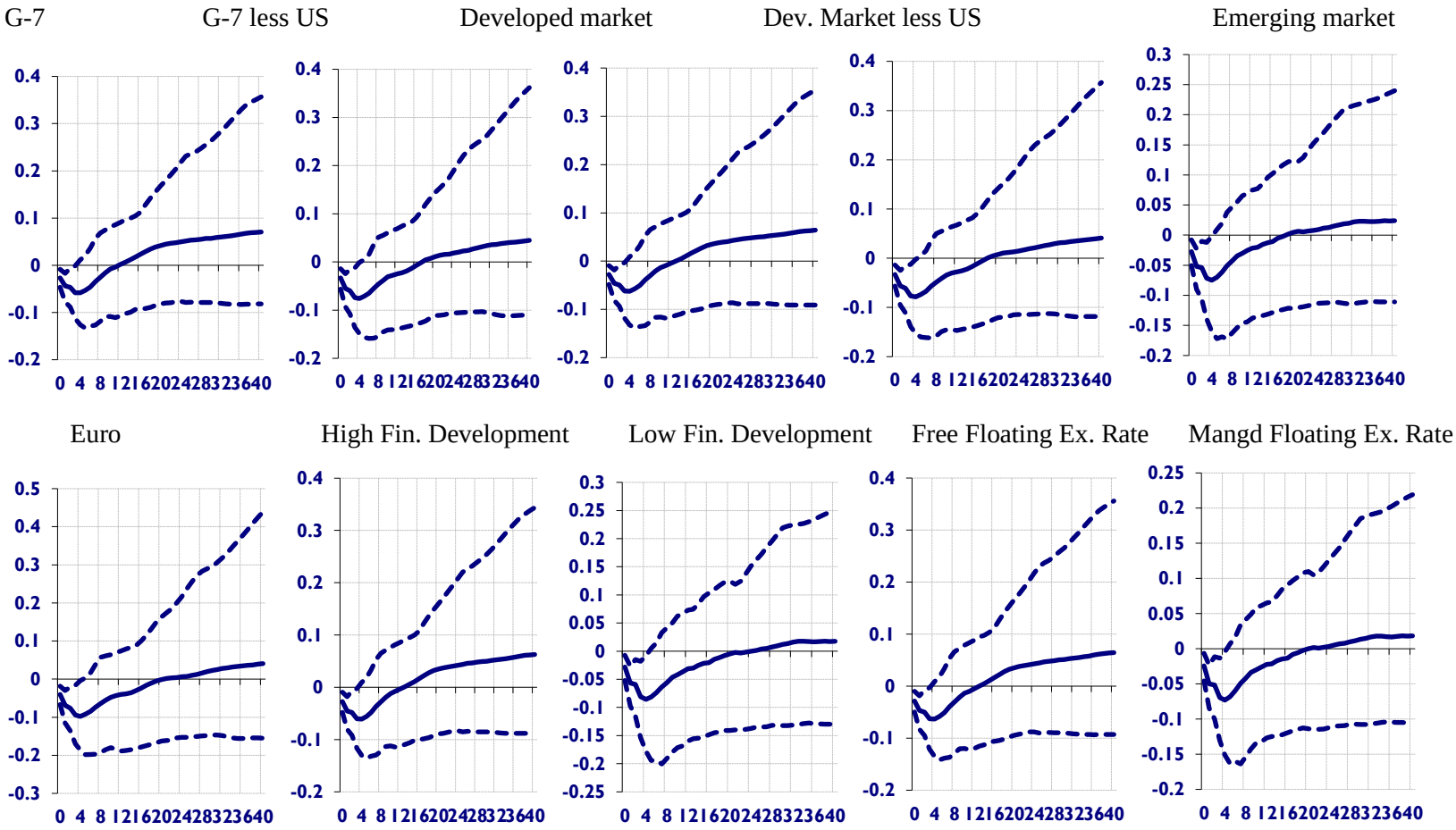
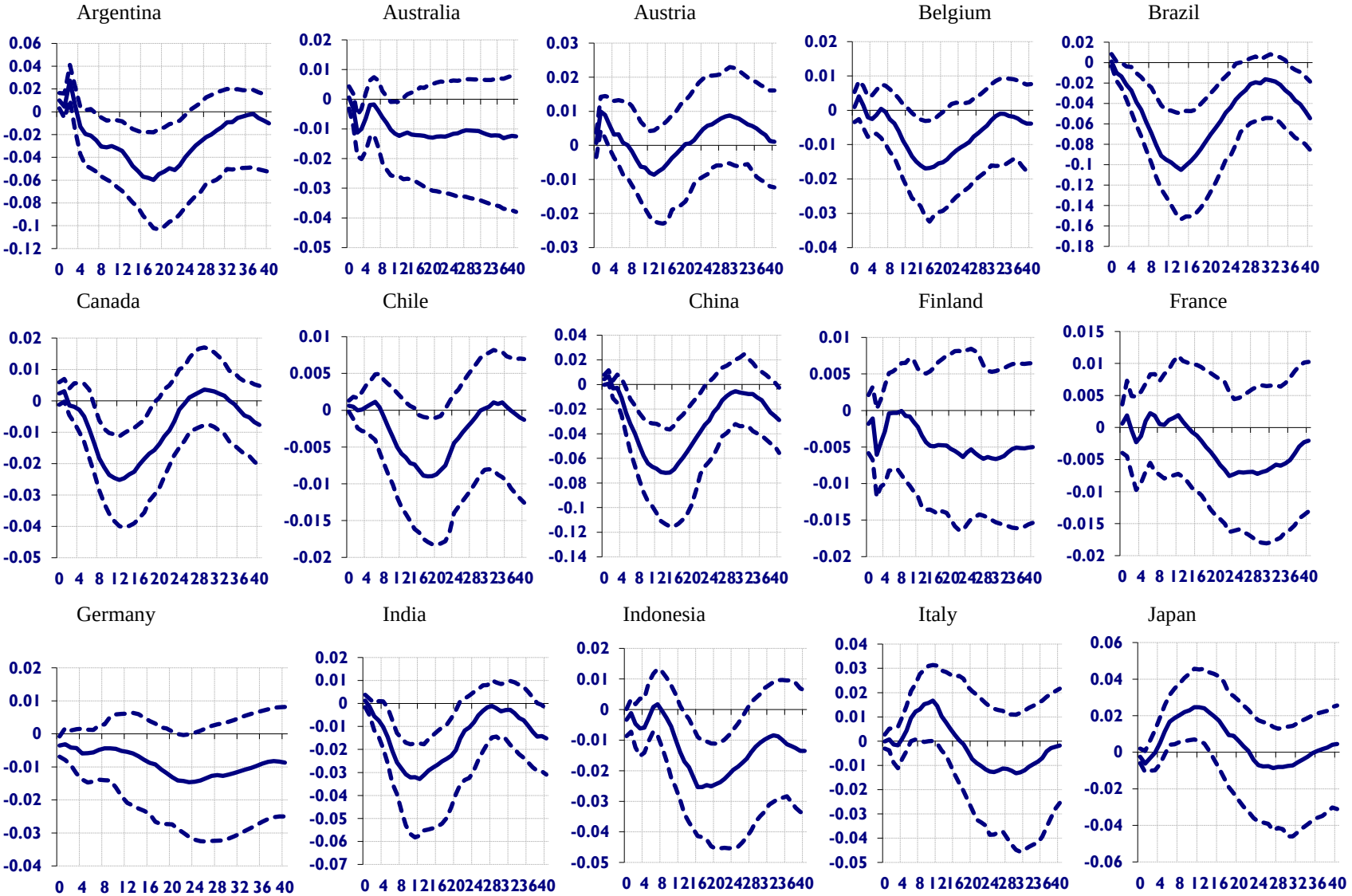
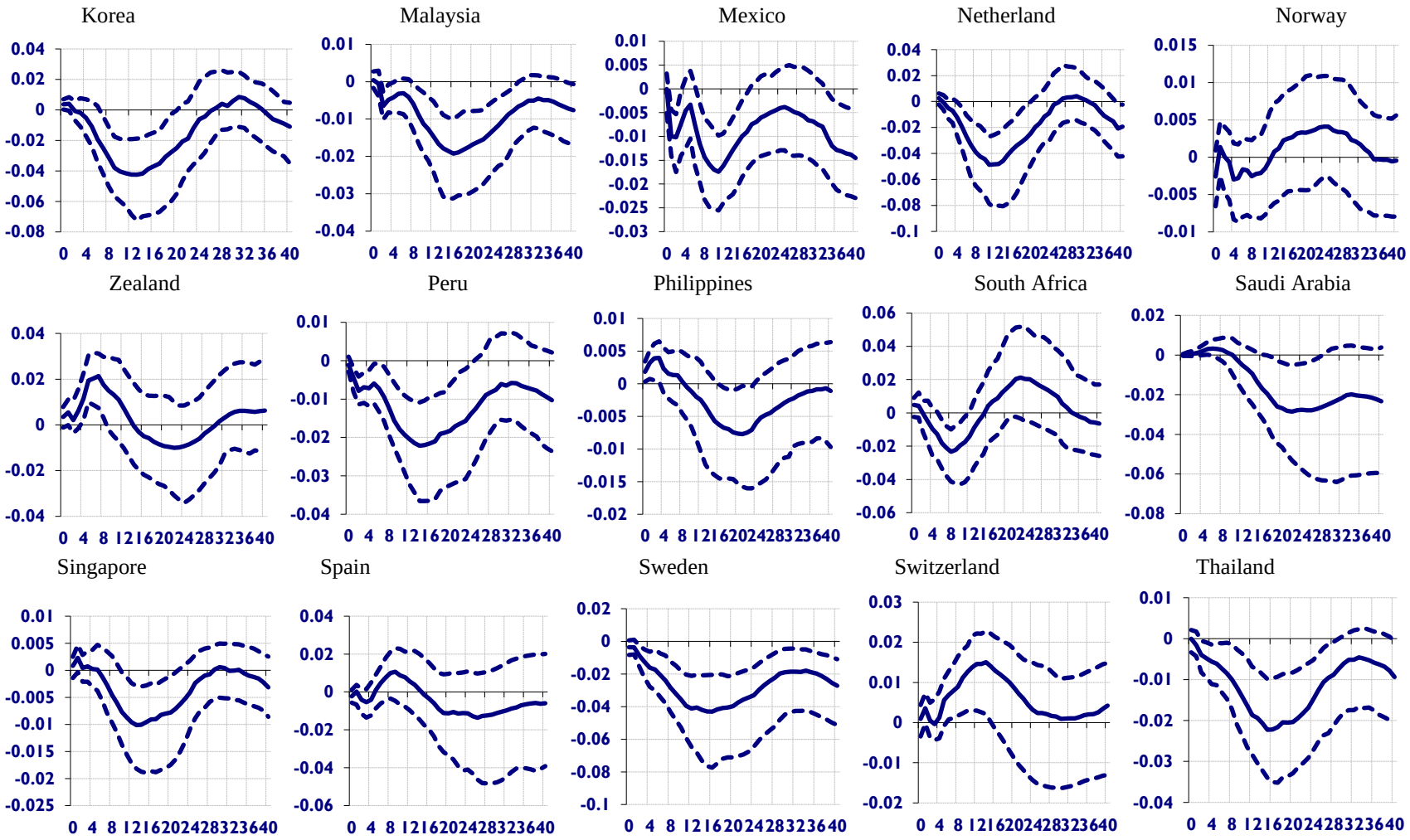


Figure A1: Country-Level Impulse Response Functions of Real Exchange Rate to a One Standard Deviation Unit Shock to US Low Quality of Political Signals

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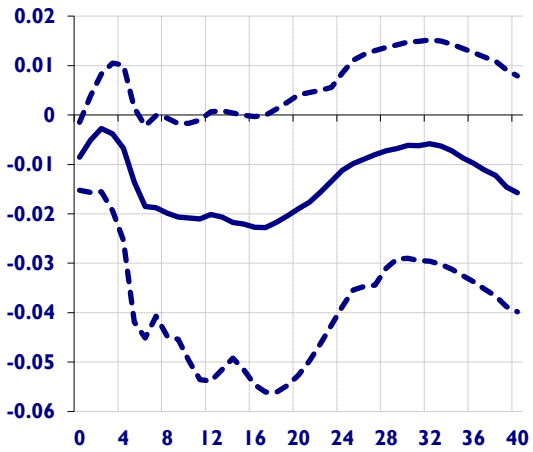
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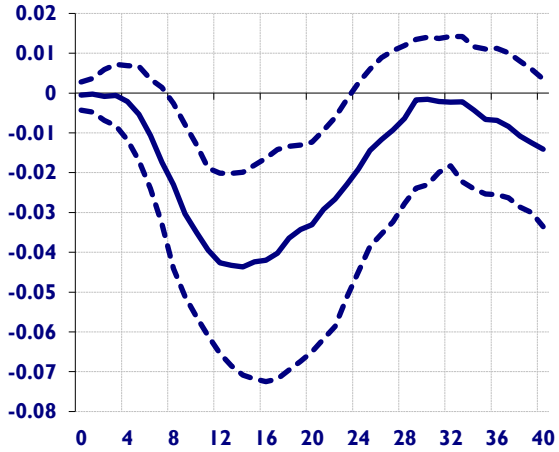
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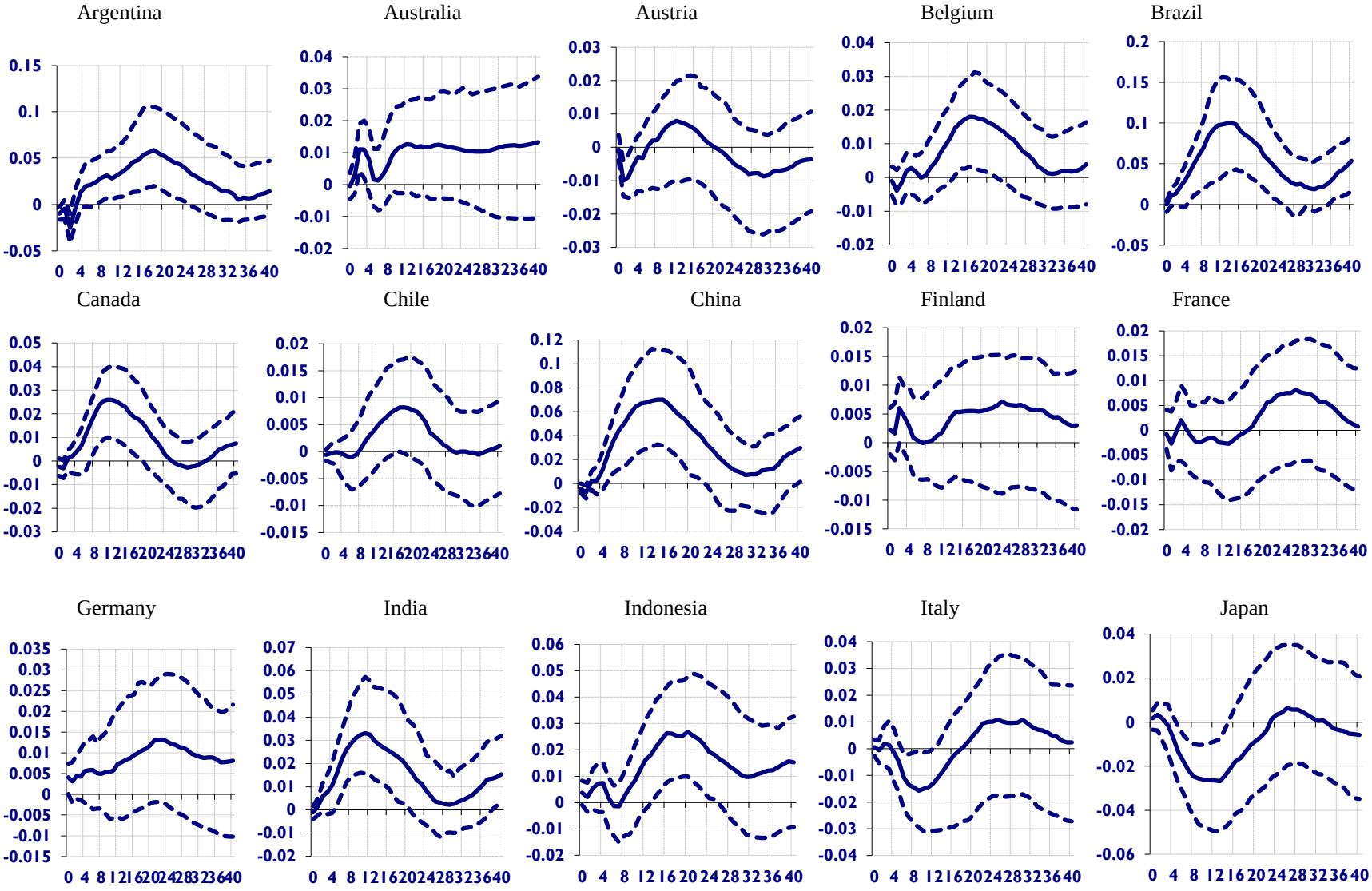
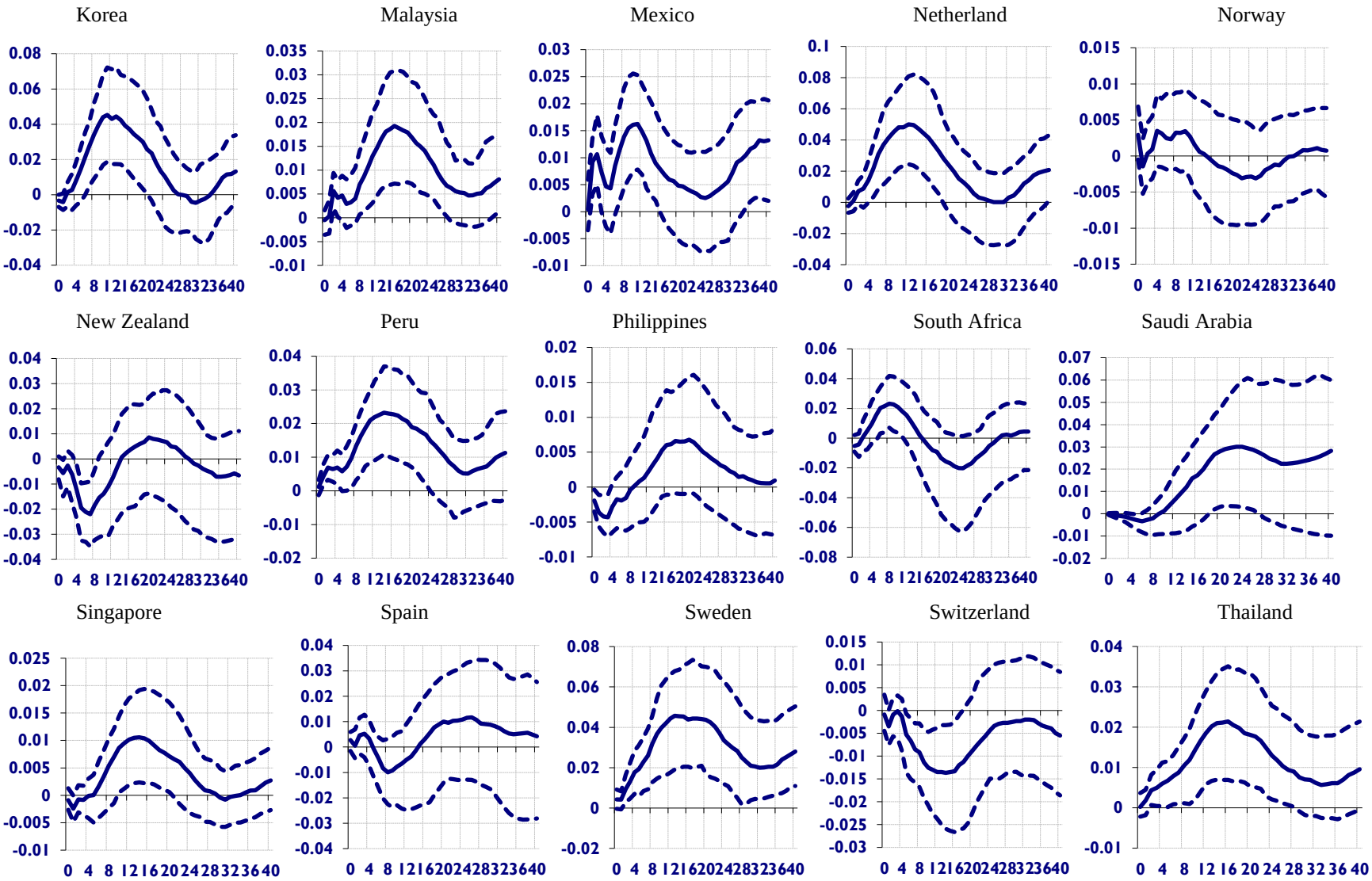
Figure A2: Country-Level Impulse Response Functions of Real Exchange Rate to a One Standard Deviation Unit Shock to US High Quality of Political Signals

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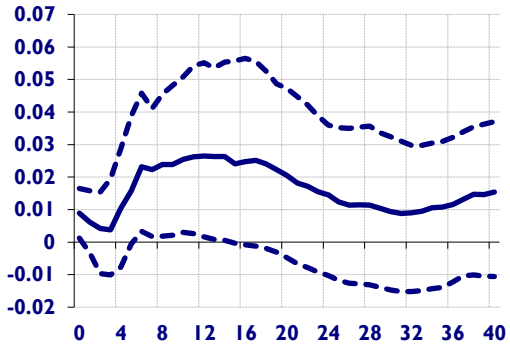
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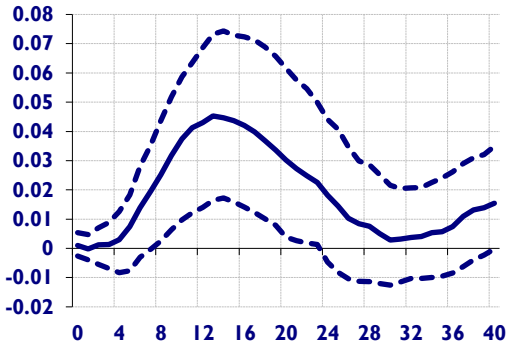
UK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