Federal Reserve Speeches and Sovereign Credit Risk

INTERNET APPENDIX

Appendix A List of valence shifters

Table A.1: List of Valence Shifters, taken from Schulder et al. [2018].

Word	Classification	Weight	Word	Classification	Weight
almost	de-amplifier	0.8	not	negator	-1
although	adversative-conjuction	0.8	only	de-amplifier	0.8
barely	de-amplifier	0.8	particular	amplifier	0.8
but	adversative-conjuction	0.8	particularly	amplifier	0.8
cannot	negator	-1	partly	de-amplifier	0.8
certain	amplifier	0.8	purpose	amplifier	0.8
certainly	amplifier	0.8	quite	amplifier	0.8
colossal	amplifier	0.8	rarely	de-amplifier	0.8
considerably	amplifier	0.8	real	amplifier	0.8
deep	amplifier	0.8	really	amplifier	0.8
deeply	amplifier	0.8	seldom	de-amplifier	0.8
definitely	amplifier	0.8	serious	amplifier	0.8
dont	negator	-1	seriously	amplifier	0.8
enormous	amplifier	0.8	severe	amplifier	0.8
enormously	amplifier	0.8	severely	amplifier	0.8
especially	amplifier	0.8	significant	amplifier	0.8
extreme	amplifier	0.8	significantly	amplifier	0.8
extremely	amplifier	0.8	slightly	de-amplifier	0.8
few	de-amplifier	0.8	somewhat	de-amplifier	0.8
greatly	amplifier	0.8	sure	amplifier	0.8
hardly	de-amplifier	0.8	surely	amplifier	0.8
heavily	amplifier	0.8	totally	amplifier	0.8
heavy	amplifier	0.8	true	amplifier	0.8
high	amplifier	0.8	truly	amplifier	0.8
highly	amplifier	0.8	vast	amplifier	0.8
however	adversative-conjuction	0.8	very	amplifier	0.8
huge	amplifier	0.8	whereas	adversative-conjuction	0.8
hugely	amplifier	0.8	decidedly	amplifier	0.8
least	de-amplifier	0.8	definite	amplifier	0.8
little	de-amplifier	0.8	immense	amplifier	0.8

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Table A.1 – continued from previous page

Word	Classification	Weight	Word	Classification	Weight
massive	amplifier	0.8	immensely	amplifier	0.8
massively	amplifier	0.8	incalculable	amplifier	0.8
more	amplifier	0.8	incredibly	de-amplifier	0.8
most	amplifier	0.8	sparsely	de-amplifier	0.8
much	amplifier	0.8	vastly	amplifier	0.8
neither	negator	-1	uber	amplifier	0.8
never	negator	-1	cant	negator	-1
majorly	amplifier	0.8	faintly	de-amplifier	0.8
none	negator	-1	wont	negator	-1

Appendix B List of macroeconomic announcements

This table presents the inflation, economic activity and unemployment releases for all countries. 'Q' denotes Quarterly, 'M' denotes Monthly, 'B' denotes Bi-Weekly, 'W' denotes Weekly, 'SA' denotes Seasonally Adjusted and 'NA' denotes Not Available. Federal Reserve speeches delivered on these dates are removed from the sample of speeches and the results re-tested for their putative impact on sovereign CDS spreads.

Table B.1: Economic Release Description

Country	CPI	Activity	Unemployment
USA	CPI Urban Consumers (M)	Industrial Production (M)	Initial Jobless Claims SA (W)
AUS	CPI All Groups Goods (Q)	GDP (Q)	Unemployment rate SA (M)
CAD	CPI (M)	GDP All industries (M)	Unemployment rate SA (M)
CZE	CPI (M)	Industrial Production (M)	N/A
FRA	CPI EU Harmonized (M)	Industrial Production (M)	Unemployment rate SA (M)
GER	CPI EU Harmonized (M)	GDP (Q)	Unemployment rate SA (M)
ITA	CPI EU Harmonized (M)	Industrial Production (M)	Unemployment rate SA (M)
JPN	CPI Nationwide (M)	Industrial Production (M)	Unemployment rate SA (M)
NZL	CPI All Groups (Q)	GDP (Q)	Unemployment rate SA (Q)
NOR	CPI (M)	Industrial Production (M)	Unemployment rate SA (M)
SWE	CPI Headline (M)	Industrial Production (M)	Unemployment rate SA (M)
SWI	CPI (M)	GDP (Q)	Unemployment rate SA (M)
UKG	CPI EU Harmonized (M)	Industrial Production (M)	Claimant Count Rate SA (M)
CHI	CPI (M)	Monthly Economic Index (M)	Unemployment rate SA (M)
COL	CPI (M)	Industrial Production (M)	Unemployment rate SA (M)
HUN	CPI (M)	Industrial Production (M)	Unemployment rate SA (M)
IDO	CPI (M)	GDP (Q)	N/A
ISR	CPI (M)	GDP (Q)	N/A
KOR	CPI (M)	Industrial Production (M)	Unemployment rate SA (M)
MEX	Biweekly CPI (B)	Industrial Production (M)	Unemployment rate SA (M)
POL	CPI (M)	Industrial Goods & Services (M)	Unemployment rate SA (M)
SOA	CPI (M)	Manufacturing Production (M)	Unemployment rate SA (Q)
TWN	CPI (M)	Industrial Production (M)	Unemployment rate SA (M)
THA	CPI (M)	GDP (Q)	N/A

Appendix C Sovereign credit risk premiums

We follow Friewald et al. [2014] and Cochrane and Piazzesi [2005] to extract sovereign credit risk premia from observed sovereign CDS spreads.

We estimate sovereign credit risk premia using the term structure of CDS spreads, defined as the (log) difference between risk-neutral and physical expectations of future CDS spreads in line with Friewald et al. [2014]. We derive country-specific credit risk premium indicators from the term structure of CDS spreads for each country as a linear combination of forward CDS spreads. For a given forecast horizon $\tau = 30$ days, the forward CDS spread $F_t^{t\times\tau}$ contracting at t and effective at $t+\tau$ for T years contains information on the future expected T-year CDS spread at $t+\tau$. We compute countries' forward CDS spread $F_t^{t\times\tau}$ which represents the risk-neutral expectation of its future CDS spread. Specifically, we use a piecewise constant intensity model to fit the term structure of CDS spreads on a given day and compute the forward CDS spreads for various horizons using the estimated intensities. Next, we calculate monthly CDS spread changes $\Delta S_{t+\tau}^T = S_{t+\tau}^T - S^T$ and monthly forward-implied changes $\Delta F_t^{\tau\times T} = F_t^{\tau\times T} - S_t^T$ for the sample maturities $T_k \in T = 1, 3, 5, 7$. The difference between them gives us the relative excess return $EX_{t+\tau}^T$:

$$EX_{t+\tau}^T = \Delta S_{t+\tau}^T - \Delta F_t^{\tau\times T}$$

We then compute the average excess changes in cross maturities over all available maturities $T_k \in T = 1, 3, 5, 7$ as :

$$\overline{EX}_{t+\tau} = \frac{1}{K}\left(\sum_{T_K\in T} EX_{t+\tau}^{T_K}\right)$$

Furthermore, we regress $\overline{EX}_{t+\tau}$ on the full CDS term structure $\Re = (1, S_t^1, F_t^{1\times1}, F_t^{3\times1}, F_t^{5\times1}, F_t^{7\times1})$ for estimating the regression parameters β^{EX}. The sovereign credit risk premia are obtained based on the information available at time t as:

$$\widetilde{RP}_{t+\tau} = -(\beta^{EX})^\top \Re$$

We redeploy the regression specification with CDS spreads as the dependent variable, but now with the risk premium $\widetilde{RP}_{t+\tau}$ as the dependent variable in regression specifications in equations (4), (5) and (6) in this paper.

References

John H Cochrane and Monika Piazzesi. Bond risk premia. *American Economic Review*, 95 (1):138–160, 2005.

Nils Friewald, Christian Wagner, and Josef Zechner. The cross-section of credit risk premia and equity returns. *The Journal of Finance*, 69(6):2419–2469, 2014.

Marc Schulder, Michael Wiegand, Josef Ruppenhofer, and Stephanie Köser. Introducing a lexicon of verbal polarity shifters for English. In *Proceedings of the Eleventh International Conference on Language Resources and Evaluation (LREC 2018)*, Miyazaki, Japan, May 2018. European Language Resources Association (ELRA).