

# Global and Regional Risk Indices

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## Abstract

The following report compiles a variety of regional (US, EU and Switzerland) as well as a global risk index. The purpose is to highlight which events had what influence on the regional financial markets and which regional event in turn had an impact on the stability of global financial markets.

*Keywords:* risk index; global risk; United States; Europe; Switzerland

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## 1. Introduction

There are many ways to judge the health of financial markets. One possibility to do so, is in the light of a continuously calculated risk index, that takes into account variables of interest. The task of the risk index is then, to depict deviations from the status quo of such variables in a timely and accurate manner. To interpret such a risk index, its current levels can either be related to historical index levels or current levels of other financial markets. One such risk index for global private investors has been suggested by Stöckl, Hanke, and Angerer (2017), based on a modified version of the financial turbulence measure of Kritzman and Li (2010; see Stöckl and Hanke 2014).

In the current report, we choose a similar approach to relate changes in the risk structure of three regional (US, EU and Switzerland) financial markets against each other and against a global index that combines the regional data. Thereby, we determine (i) which events had the largest impact on the regional financial markets, (ii) which variables were the main drivers of these events and (iii) the impact of these events and variables on the risk structure of global financial markets. To achieve (i), we take a normalized version of financial turbulence (cf. Stöckl and Hanke 2014), that is able to deal with varying number of variables within indices (due to missing values). For (ii), we split this measure into its (weighted) parts in a way that the sum of the parts determines the overall index level. This will help us to determine which variable(s) drive the index. For (iii) we combine all regional financial variables weighing them by their respective regional GDP (cf. Stöckl and Hanke 2014, Stöckl, Hanke, and Angerer (2017)). As we will elaborate later, sometimes it is not extreme movements of single variables that drive these indices, but merely the movement of several variables “against” each other. To this end, we will make use of results by Kinlaw and Turkington (2013) to determine if the index is driven by volatile variables and/or unusual correlational movements of several variables. The variables we use are the respective major stock indices (S&P 500, EuroStoxx 50, SMI), their implied volatility indices (e.g. VIX), the regional rate of inflation (CPI), the 2 and 10 year government bond yields and the real effective exchange rate calculated by the BIS.<sup>1</sup>

Risk Indices to capture shifts in the risk structure of financial markets have been suggested by a variety of authors.<sup>2</sup> Many of these risk indices focus on specific asset classes (e.g. volatility indices like the VIX) or specific industries (e.g. health of the banking sector). Stöckl, Hanke, and Angerer (2017) develop a risk index for global private investors, that measures changes in the risk structure of multiple asset classes based on an extension of the turbulence measure of Kritzman and Li (2010) to incorporate a weighting

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<sup>1</sup>Calculated as trade-weighted average of exchange rates with all major currencies.

<sup>2</sup>Surveys of such risk indices were conducted by the US Department of Treasury (Bisias et al. 2012), the European Central Bank (ECB) (2010), De Bandt and Hartmann (2000), the International Monetary Fund (2009) and others (Billio et al. 2012, Acharya et al. (2010)).

scheme that allows to adapt the index to specific investor needs. Their index (called *PRIX*) has a variety of desirable features, in that it provides precise, easy-to-understand, transparent (non-proprietary) and timely information to globally active private investors. In their paper, Stöckl, Hanke, and Angerer (2017) also show, that the *PRIX* exhibits commonly expected properties of risk indices, such as proper reaction to well-known historical market events, persistence in time and forecasting power for both risk and returns to risk. Here, we want to take advantage of these features and the flexibility of the turbulence measure to calculate the aforementioned risk indices based on variables from different asset classes. Other authors have used turbulence successfully to e.g. forecast real economic activity based on the health of the 20 largest banks in the U.S. (Giglio, Kelly, and Pruitt 2016).

In the following section 2, we will describe our methodology, then present our results (section 3) before we conclude (section 4). The appendix holds a list of all identifiable events for all indices.

## 2. Data and Methodology

### 2.1. Methodology

To create the different risk indices we extend the basic financial turbulence of Kritzman and Li (2010), defined as:

$$FT_t = \sqrt{(r_t - \mu)' \Sigma^{-1} (r_t - \mu)}, \quad (1)$$

where  $r_t$  is a vector of returns in month  $t$ ,  $\mu$  a vector of reference (historical) means, and  $\Sigma$  the reference (historical) covariance matrix. The extension (called *Portfolio Turbulence*, *PFT*) additionally takes into account the (diagonal matrix of) possibly time-varying weights  $w_{t,D}$ :

$$PFT(r_t; w_t, \mu_t, \Sigma_t) := \sqrt{\frac{1}{\sum_{i=1}^n w_i^2} (w_{t,D}(r_t - \mu_t))' \Sigma_t^{-1} (w_{t,D}(r_t - \mu_t))}. \quad (2)$$

To understand the inner workings of *PFT*, note, that *PFT* not only measures deviations of current returns from historical means, but also deviations from historical correlations.<sup>3</sup> To better understand which component(s) is (are) driving *PFT*, we replace the last matrix multiplication in (2) by the componentwise Hadamard product  $\circ$  and immediately get the single components of (that sum to) *PFT*.<sup>4</sup>

$$PFT_{comp}(r_t; w_t, \mu_t, \Sigma_t) := \frac{1}{PFT(r_t; w_t, \mu_t, \Sigma_t)} \frac{1}{\sum_{i=1}^n w_i^2} (w_{t,D}(r_t - \mu_t))' \Sigma_t^{-1} \circ (w_{t,D}(r_t - \mu_t)). \quad (3)$$

Last, to get a feeling, whether it is (at least) one component that deviates from its (their) mean or several components that move against their correlation to drive *PFT*, we calculate a variant *PFT.v* of *PFT* that disregards correlations by assuming a diagonal covariance:

$$PFT_{t.v} := \sqrt{\frac{1}{\sum_{i=1}^n w_i^2} (w_{t,D}(r_t - \mu_t))' \Sigma_{t,D}^{-1} (w_{t,D}(r_t - \mu_t))}, \quad (4)$$

$$\Sigma_D := \begin{pmatrix} \sigma_1^2 & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & \sigma_n^2 \end{pmatrix} \quad (5)$$

and

$$PFT_{t.c} := \frac{PFT_t}{PFT_{t.v}} \quad (6)$$

that is supposed to capture the movement of variables against their usual correlation.

<sup>3</sup>For a very detailed example, see Stöckl and Hanke (2014).

<sup>4</sup>For the final calculation of *PFT*, one only needs to sum the components  $PFT_t = \sqrt{\sum_{comp} PFT_{comp,t}^2}$  before taking the square root.

## 2.2. Data

In Table 1, we give additional information on and depict descriptive statistics for all time series, Table 2 gives the full sample correlation matrix. To enable comparability across plots, we calculate all indices based on a sample period starting in January, 1990 and depict all indices based on (3-month moving averages of) monthly data from January 1995 until September 2018. All input data (stock indices) is taken in (log) differences and comes from Bloomberg. GDP information for calculating the global (weighted) risk index is from the OECD.

Table 1: Descriptive statistics for all input variables used for the regional and global indices. This table reports variables (Bloomberg notation), type, region, start/end date and descriptive statistics for the (log) differences of all input variables.

rowname	Region	type	start date	end date	mean	sd	min	max	skewness	kurtosis
SPX	US	stock index	02/1990	09/2018	0.01	0.04	-0.18	0.10	-0.99	2.50
SX5E	EU	stock index	02/1990	09/2018	0.01	0.05	-0.16	0.15	-0.56	0.70
SMI	CH	stock index	02/1990	09/2018	0.01	0.04	-0.11	0.10	-0.44	0.20
VIX	US	impl. volatility	02/1990	09/2018	-0.03	4.92	-15.28	20.50	0.83	3.82
V2X	EU	impl. volatility	01/1999	09/2018	-0.10	5.06	-13.02	20.29	0.81	2.65
V3VI	CH	impl. volatility	06/1999	09/2018	-0.05	4.33	-11.40	22.78	1.32	6.38
CPI	US	CPI	02/1990	09/2018	-0.01	0.47	-2.60	2.00	-0.71	7.73
ECCPEMUY	EU	CPI	01/1997	09/2018	0.00	0.28	-1.10	0.70	-0.32	1.44
SZCPIYOY	CH	CPI	02/1990	09/2018	-0.01	0.29	-1.10	0.80	-0.45	1.74
USGG10YR	US	10y gov. yield	02/1990	09/2018	-0.02	0.25	-1.03	0.64	-0.47	1.86
EUGB10	EU	10y gov. yield	02/1990	09/2018	-0.03	0.20	-0.59	0.53	0.35	0.35
GTCHF10Y	CH	10y gov. yield	03/2007	09/2018	-0.02	0.15	-0.56	0.30	-0.29	0.41
USGG2YR	US	2y gov. yield	02/1990	09/2018	-0.02	0.20	-0.95	0.67	-1.42	6.81
EUGB2	EU	2y gov. yield	02/1990	09/2018	-0.03	0.84	-7.44	2.40	-5.72	48.33
GTCHF2Y	CH	2y gov. yield	03/2007	09/2018	-0.02	0.18	-0.93	0.95	-0.28	9.46
BISBUSR	US	REER	01/1994	09/2018	0.04	1.37	-3.19	5.68	0.54	1.20
BISBEUR	EU	REER	01/1994	09/2018	-0.02	1.43	-4.82	5.45	0.08	1.82
JBDCCHF	CH	REER	01/1994	09/2018	0.02	2.32	-7.57	15.44	2.30	13.89

Table 2: Correlations of all input variables used for the regional and global indices. This table reports Pearson correlation coefficients of all input variables.

rowname	SPX	SX5E	SMI	VIX	V2X	V3VI	CPI	ECCPEMUY	SZCPIYOY	USGG10YR	EUGB10	GTCHF10Y	USGG2YR	EUGB2	GTCHF2Y	BISBUSR	BISBEUR	JBDCCHF
SPX																		
SX5E	.76																	
SMI	.68	.77																
VIX	-.70	-.58	-.49															
V2X	-.67	-.72	-.61	.82														
V3VI	-.62	-.65	-.61	.79	.90													
CPI	.05	-.01	-.04	.04	.02	.04												
ECCPEMUY	.10	.06	.00	-.04	.00	-.00	.65											
SZCPIYOY	.00	.03	-.00	.09	.10	.11	.52	.59										
USGG10YR	.10	.22	.13	-.11	-.28	-.23	.19	.18	.09									
EUGB10	-.09	-.15	-.13	.04	-.01	-.02	.14	.11	.08	.43								
GTCHF10Y	.21	.17	.15	-.11	-.12	-.11	.22	.19	.11	.73	.35							
USGG2YR	.15	.27	.22	-.17	-.37	-.37	.11	.09	.03	.80	.34	.43						
EUGB2	.02	.04	-.01	-.02	-.06	-.06	.09	.08	.01	.06	.29	-.03	.11					
GTCHF2Y	.30	.26	.34	-.25	-.36	-.37	.14	.10	.00	.39	.15	.55	.53	.04				
BISBUSR	-.32	-.19	-.12	.24	.18	.20	-.13	.01	-.01	.01	.05	-.12	.01	-.03	-.16			
BISBEUR	.04	-.13	-.15	-.08	-.03	-.04	.15	-.06	-.03	-.07	.01	.20	-.13	-.08	.12	-.44		
JBDCCHF	-.17	-.23	-.34	.12	.17	.24	-.03	-.04	.05	-.16	.10	-.12	-.21	-.01	-.35	-.04	.10	

### 3. Results

In the following we depict the three regional (US, EU and Swiss) risk indices as well as the global risk index. For all indices we have highlighted global events that have influenced the respective index (a list of all events that have caused spikes in the index can be found in the appendix). Each figure consists of three panels, where in the first panel we depict the risk index in black. In the second panel, we show the contributions (3) of individual variables to the overall index, where the coloring of the variables is according to the legend on the bottom of the figure. Note that the sum of the contributions gives the level of the index. Also note, that it is either one or more variables that spike and cause a rise in the index, or the movement of variables against each other that causes a spike in the index. To distinguish between these cases, in the third panel we depict  $PFT.v$  and  $PFT.c$  to help us get an even better understanding whether it is the volatility (deviation from the mean) of one (or more) single components of the index that drives  $PFT$  (brown) or the deviation of several components from their covariance (purple).

In Figure 1 we show the risk index for the US, that is compiled from the S&P500, its implied volatility and the other US variables given in Table 1. We clearly find the most prominent spikes in the index to be caused by the [Asian](#), [Russian](#) and [Global financial crisis](#), as well as the burst of the [Burst of the dot-com bubble](#) and the [9-11 terror attacks](#). Most often the elevated levels of the index are due to the stock index (S&P500, red) and its implied volatility index (VIX, green), but in some cases (e.g. the [2007 US bear market](#)) it is an inflation shock or a drastic change in the short term interest government bond yield that drives spikes in the index.

The European index in Figure 2 is compiled from log-returns of the EuroSTOXX50, differences of its implied volatility index, and changes in the 2 and 10 year government bond yield, the inflation rate and the real effective exchange rate. We clearly find some crises (like the [Asian](#), [Russian](#) and [Global financial crisis](#)) to drive the index to similar levels as its US counterpart, however, the largest spike in the European risk index can be observed during the [European sovereign debt crisis](#) when the sharpe rise in short term interest rates (magenta) drive the European index to its maximum level after the final decision on the [2nd Greek Bailout](#).

In Figure 3 we depict the Swiss risk index, that is compiled from the SMI, its implied volatility and the variables according to Table 1. The Swiss index has a variety of very interesting features. It reaches its highest levels during the [Russian financial crisis](#), closely followed by the [Early 1990s recession](#) and the [Global financial crisis](#). All of these are driven by the stock market (in red, also due to missing information in some of the variables). Since the global financial crisis, there have been only two very specific “Swiss” events that have been driving the risk index, both caused by the real effective exchange rate (in yellow): The 2012 setting of the [CHF cap](#) and the [removal of the CHF cap](#) in January 2015.

Finally, we put together the global index in Figure 4. We clearly observe the [Global financial crisis](#) to be the event with the largest impact on the risk structure of global financial markets (the largest spike in the index). Most interestingly, the 2nd largest event is the [Russian financial crisis](#) that has affected all three markets simultaneously. Other important large impact events are the [European sovereign debt crisis](#) or the [2015 Stock market selloff](#) when the Dow Jones fell by 588 points during a two-day period largely impacting all three implied volatility indices. From a Swiss perspective, we find that the [setting/ removal](#) of the CHF cap had the largest individual influence on the global index, even taking into account the relatively small GDP (170 bn USD) in relation to the EU (2'859 bn USD) and the US (5'010 bn USD).<sup>5</sup>

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<sup>5</sup>Q1 2018, Data from OECD.

# US Risk Index

1990-02-28 / 2018-09-28

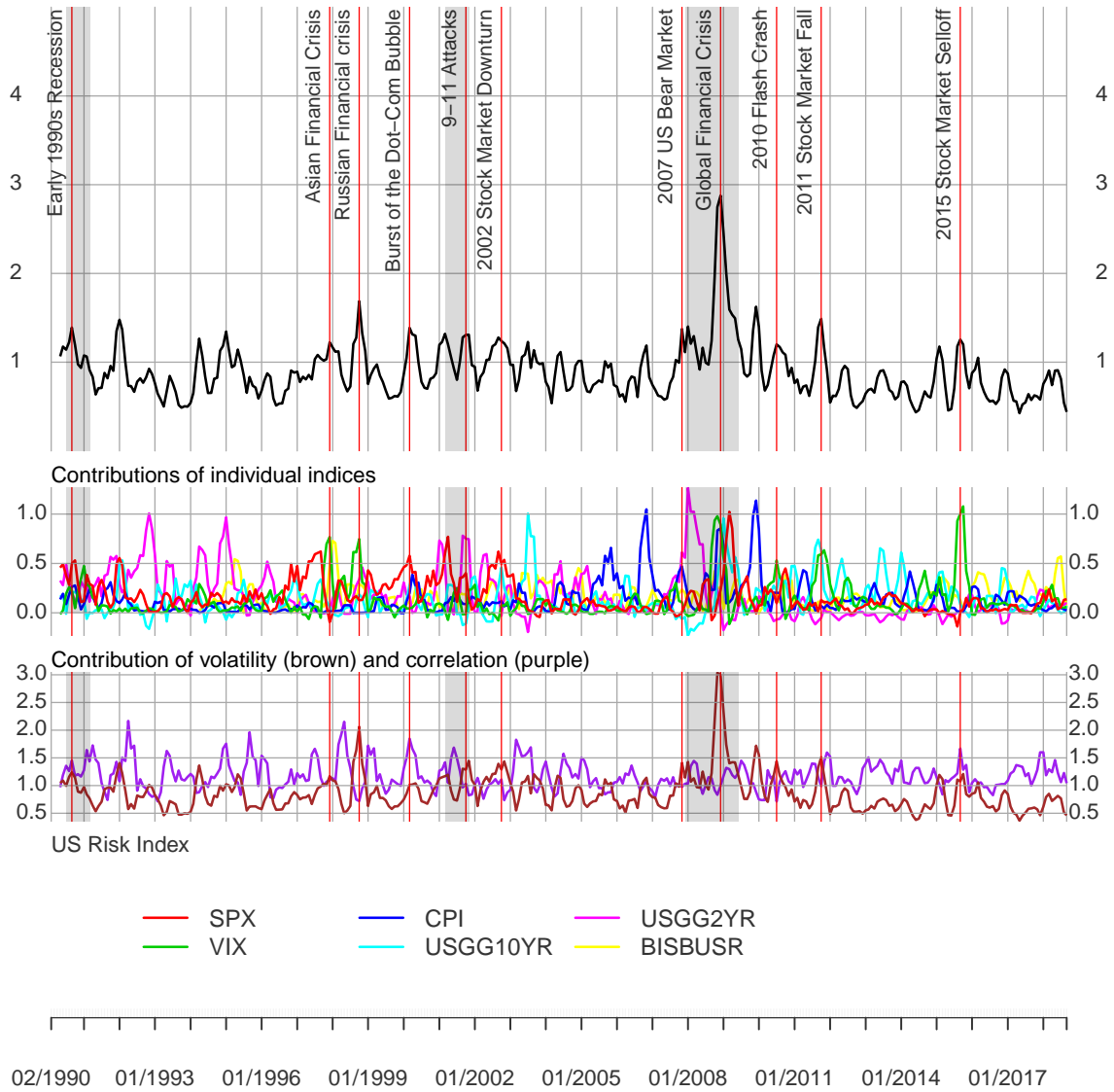


Figure 1: Risk Index build using US Data. Data was retrieved from Bloomberg. The sample period is 1990:01-2018:06, the plotting period is 1995:01-2018:06.

# EU Risk Index

1990-02-28 / 2018-09-28

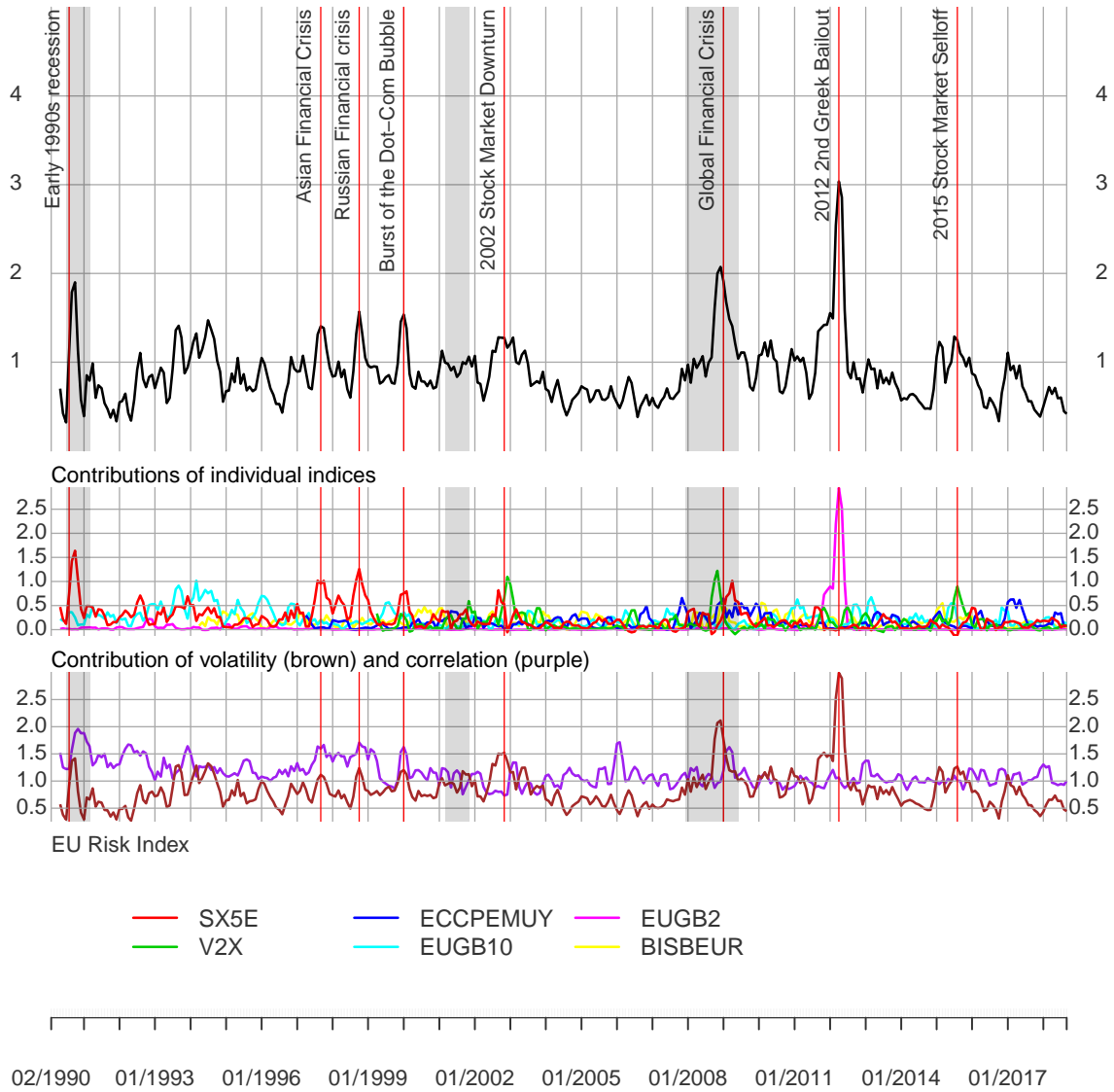


Figure 2: Risk Index build using European Data. Data was retrieved from Bloomberg. The sample period is 1990:01-2018:06, the plotting period is 1995:01-2018:06.

### Swiss Risk Index

1990-02-28 / 2018-09-28

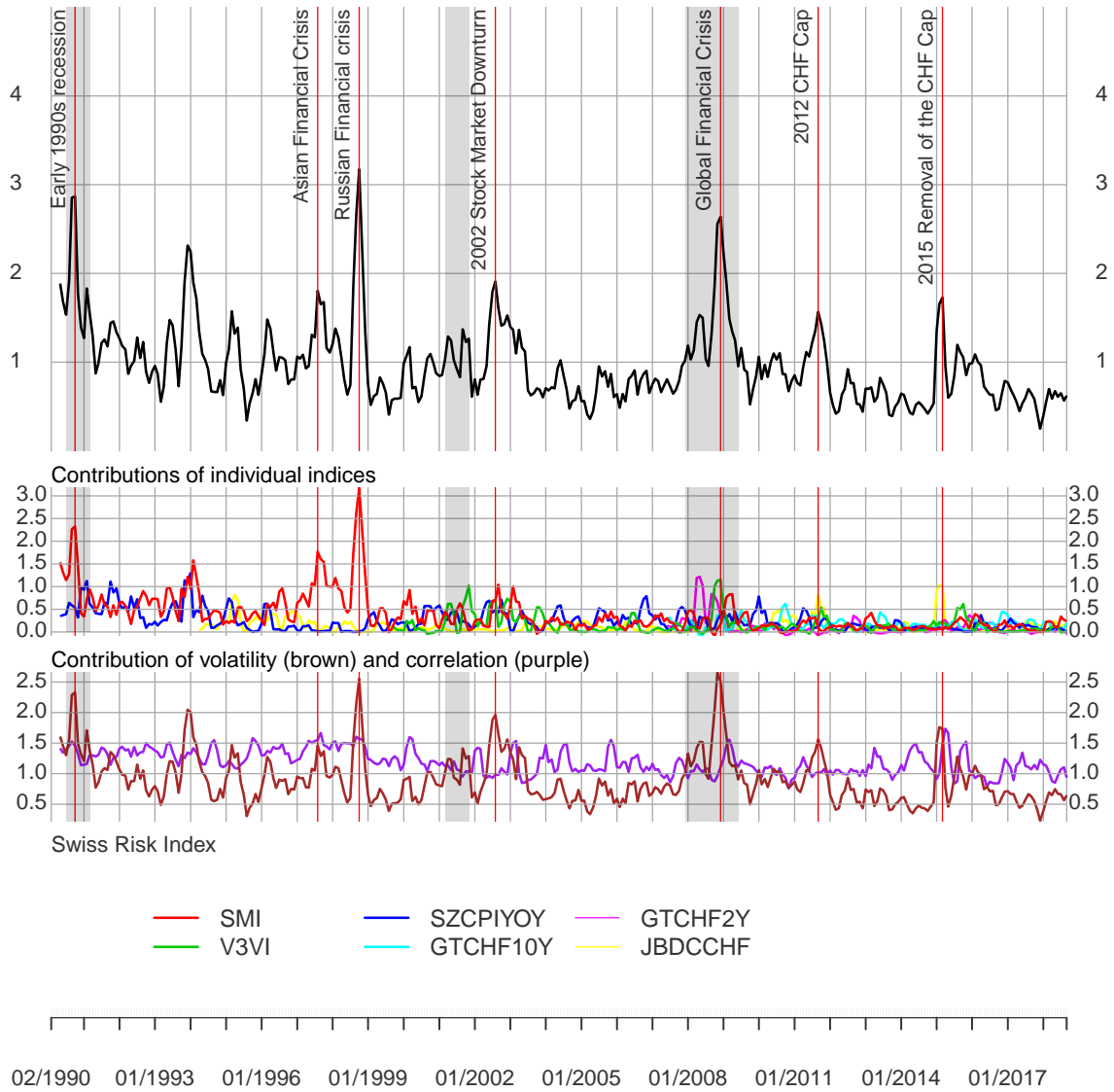


Figure 3: Risk Index build using Swiss Data. Data was retrieved from Bloomberg. The sample period is 1990:01-2018:06, the plotting period is 1995:01-2018:06.



# Global Risk Index

1990-02-28 / 2018-09-28

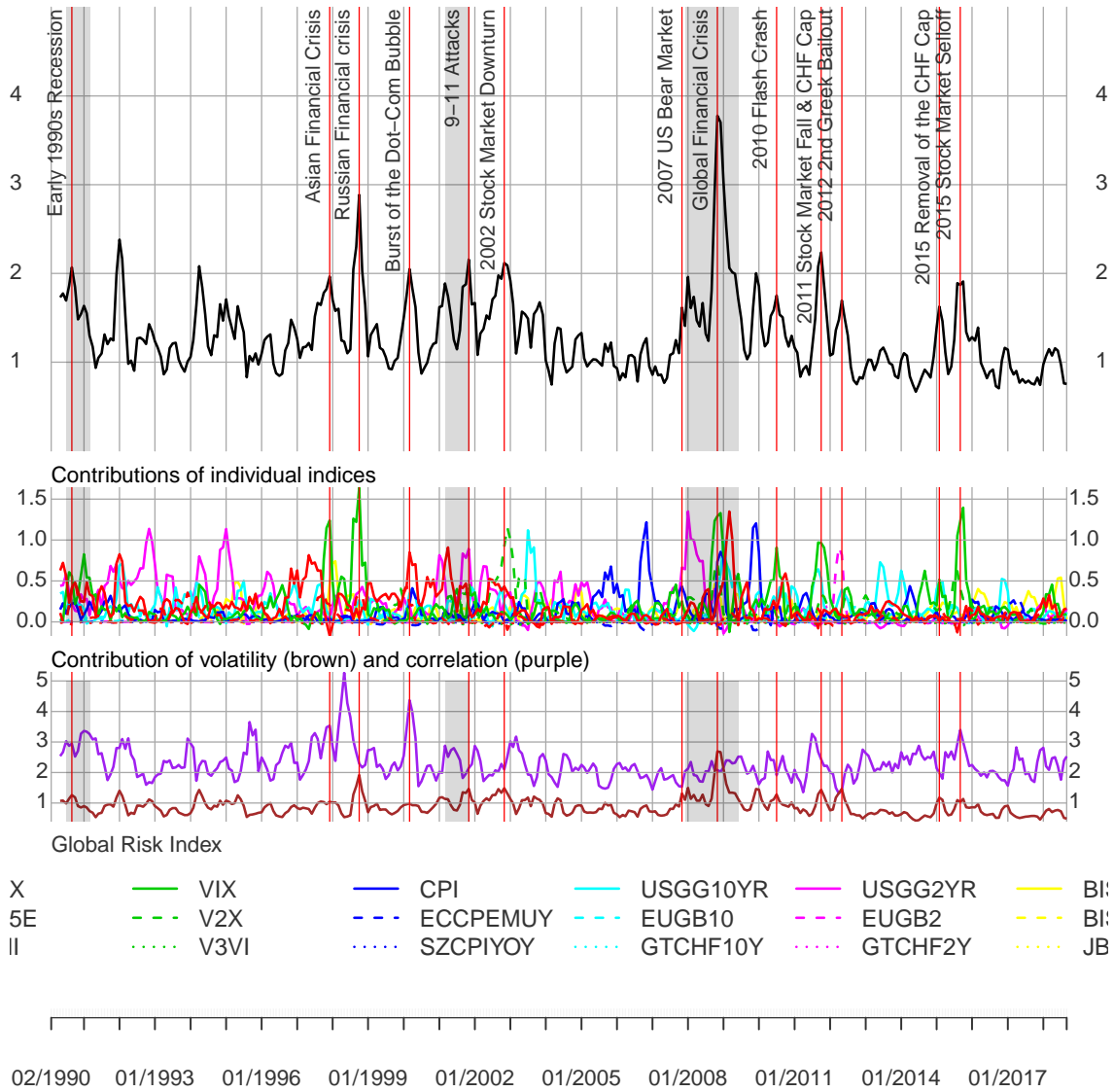


Figure 4: Risk Index build from everything we have. Data was retrieved from Bloomberg. The sample period is 1990:01-2018:06, the plotting period is 1995:01-2018:06.

#### 4. Conclusion

All in all, we observe, that for the three regional indices a variety of different events have caused the indices to spike with varying impact, for example the Russian crisis had a larger influence on Switzerland than any of the other two regions. Other events, such as the global financial crisis have had an impact on all regional indices and therefore cause the highest spike in the global index. Last, some events only had an impact on one of the regions but was severe enough to be also noticed in the global index, such as the European sovereign debt crisis, or the setting/removal of the Swiss Franc cap.

## Appendix A. Details on individual events

### Appendix A.1. US risk index

- 1990/08: **Early 1990s recession**: Iraq invaded Kuwait in July 1990, causing oil prices to increase. The Dow dropped 18% in three months, from 2,911.63 on July 3 to 2,381.99 on October 16, 1990. This recession lasted approximately 8 months. (VIX, S&P500)
- 1997/10: **Asian Financial Crisis**: Global stock market crash that was caused by an economic crisis in Asia. (VIX, exchange rate)
- 1998/10: **Russian financial crisis**: The Russian government devalues the ruble, defaults on domestic debt, and declares a moratorium on payment to foreign creditors. (VIX)
- 2000/03: **Burst of the dot-com bubble**: Collapse of the technology bubble. (S&P 500)
- 2001/11: **9-11 Attacks**: The September 11 attacks caused global stock markets to drop sharply. The attacks themselves caused approximately \$40 billion in insurance losses, making it one of the largest insured events ever. (S&P 500, VIX and 10yr interest rate)
- 2002/10: **2002 Stock market downturn**: Downturn in stock prices during 2002 in stock exchanges across the United States, Canada, Asia, and Europe. After recovering from lows reached following the September 11 attacks, indices slid steadily starting in March 2002, with dramatic declines in July and September leading to lows last reached in 1997 and 1998. (S&P500, 10yr interest rate)
- 2007/11: **2007 US Bear Market**: Till June 2009, the Dow Jones Industrial Average, Nasdaq Composite and S&P 500 all experienced declines of greater than 20% from their peaks in late 2007. (CPI, 2yr interest rate)
- 2008/11-2009/02: **Global financial crisis** (Driven by everything)
- 2010/05: **2010 Flash crash**: The Dow Jones Industrial Average suffers its worst intra-day point loss, dropping nearly 1,000 points before partially recovering.
- 2011/08: **2011 Stock market fall**: S&P 500 entered a short-lived bear market between 02nd May 2011 (intraday high: 1,370.58) and 04 October 2011 (intraday low: 1,074.77), a decline of 21.58%. The stock market rebounded thereafter and ended the year flat. (10Yr interest rate, VIX)
- 2015/08: **2015 Stock market selloff**: The Dow Jones fell 588 points during a two-day period, 1,300 points from August 18-21. On Monday, August 24, world stock markets were down substantially, wiping out all gains made in 2015, with interlinked drops in commodities such as oil, which hit a six-year price low, copper, and most of Asian currencies, but the Japanese yen, losing value against the United States dollar. With this plunge, an estimated ten trillion dollars had been wiped off the books on global markets since June 3. (VIX)

### Appendix A.2. EU risk index

- 1990/09: **Early 1990s recession**: Iraq invaded Kuwait in July 1990, causing oil prices to increase. The Dow dropped 18% in three months, from 2,911.63 on July 3 to 2,381.99 on October 16, 1990. This recession lasted approximately 8 months. (EuroStoxx 50)
- 1997/10: **Asian Financial Crisis**: In August and October 1997 the EuroStoxx 50 lost more than 10% in one month due to the Asian Financial Crisis. (EuroStoxx 50)
- 1998/09: **Russian financial crisis**: The Russian government devalues the ruble, defaults on domestic debt, and declares a moratorium on payment to foreign creditors. (EuroStoxx 50)
- 2000/03: **Burst of the dot-com bubble**: Collapse of the technology bubble. (EuroStoxx 50, VSTOXX)
- 2002/10: **2002 Stock market downturn**: Downturn in stock prices during 2002 in stock exchanges across the United States, Canada, Asia, and Europe. After recovering from lows reached following the September 11 attacks, indices slid steadily starting in March 2002, with dramatic declines in July and September leading to lows last reached in 1997 and 1998. (VSTOXX)
- 2008/11-2009/02: **Global financial crisis** (all variables)
- 2012/03: **Haircut for Greek debt (2nd bailout package)**: Large drop in 2 Year European Government Yields (from 13 to 6) due to “world’s biggest debt-restructuring deal in history”. The second bailout programme was ratified in February 2012. A total of EUR 240 billion was to be transferred in regular tranches through December 2014. The recession worsened and the government continued to dither over bailout program implementation. In December 2012 the Troika provided Greece with more debt

relief, while the IMF extended an extra EUR 8.2bn of loans to be transferred from January 2015 to March 2016. (2yr interest rate)

- 2015/08: **2015 Stock market selloff**: The Dow Jones fell 588 points during a two-day period, 1,300 points from August 18-21. On Monday, August 24, world stock markets were down substantially, wiping out all gains made in 2015, with interlinked drops in commodities such as oil, which hit a six-year price low, copper, and most of Asian currencies, but the Japanese yen, losing value against the United States dollar. With this plunge, an estimated ten trillion dollars had been wiped off the books on global markets since June 3. (VSTOXX)

#### *Appendix A.3. Swiss risk index*

- 1990/09: **Early 1990s recession**: Iraq invaded Kuwait in July 1990, causing oil prices to increase. The Dow dropped 18% in three months, from 2,911.63 on July 3 to 2,381.99 on October 16,1990. This recession lasted approximately 8 months. (SMI)
- 1997/10: **Asian Financial Crisis**: In August and October 1997 the EuroStoxx 50 lost more than 10% in one month due to the Asian Financial Crisis. (SMI)
- 1998/09: **Russian financial crisis**: The Russian government devalues the ruble, defaults on domestic debt, and declares a moratorium on payment to foreign creditors. (SMI)
- 2002/10: **2002 Stock market downturn**: Downturn in stock prices during 2002 in stock exchanges across the United States, Canada, Asia, and Europe. After recovering from lows reached following the September 11 attacks, indices slid steadily starting in March 2002, with dramatic declines in July and September leading to lows last reached in 1997 and 1998. (Eurostoxx 50, VSTOXX)
- 2008/11-2009/02: **Global financial crisis** (all variables)
- 2011/09: **CHF Cap put in place**. (real effective exchange rate)
- 2015/01: **End of CHF Cap**: On January 15, 2015 the Swiss National Bank abandoned the ceiling exchange rate of the Swiss Franc against the Euro which was followed by a 30% increase of the exchange rate.<sup>6</sup> (real effective exchange rate)

#### *Appendix A.4. Global risk index*

- 1990/08: **Early 1990s recession**: Iraq invaded Kuwait in July 1990, causing oil prices to increase. The Dow dropped 18% in three months, from 2,911.63 on July 3 to 2,381.99 on October 16,1990. This recession lasted approximately 8 months. (VIX, S&P500)
- 1997/10: **Asian Financial Crisis**: Global stock market crash that was caused by an economic crisis in Asia. ()
- 1998/10: **Russian financial crisis**: The Russian government devalues the ruble, defaults on domestic debt, and declares a moratorium on payment to foreign creditors. (VIX)
- 2000/03: **Burst of the dot-com bubble**: Collapse of the technology bubble.
- 2001/11: **9-11 Attacks**: The September 11 attacks caused global stock markets to drop sharply. The attacks themselves caused approximately \$40 billion in insurance losses, making it one of the largest insured events ever.
- 2002/10: **2002 Stock market downturn**: Downturn in stock prices during 2002 in stock exchanges across the United States, Canada, Asia, and Europe. After recovering from lows reached following the September 11 attacks, indices slid steadily starting in March 2002, with dramatic declines in July and September leading to lows last reached in 1997 and 1998.
- 2007/11: **2007 US Bear Market**: Till June 2009, the Dow Jones Industrial Average, Nasdaq Composite and S&P 500 all experienced declines of greater than 20% from their peaks in late 2007.
- 2008/11-2009/02: **Global financial crisis** (Driven by everything)
- 2010/05: **2010 Flash crash**: The Dow Jones Industrial Average suffers its worst intra-day point loss, dropping nearly 1,000 points before partially recovering. ()
- 2011/08: **2011 Stock market fall**: S&P 500 entered a short-lived bear market between 02nd May 2011 (intraday high: 1,370.58) and 04 October 2011 (intraday low: 1,074.77), a decline of 21.58%. The stock market rebounded thereafter and ended the year flat. (Driven by 10Yr interest rate and VIX)

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<sup>6</sup>This was often called “Francogeddon” by the media. <https://www.bbc.co.uk/news/av/business-30845248/francogeddon-as-swiss-franc-ends-euro-cap>.

- 2015/08: [2015 Stock market selloff](#): The Dow Jones fell 588 points during a two-day period, 1,300 points from August 18-21. On Monday, August 24, world stock markets were down substantially, wiping out all gains made in 2015, with interlinked drops in commodities such as oil, which hit a six-year price low, copper, and most of Asian currencies, but the Japanese yen, losing value against the United States dollar. With this plunge, an estimated ten trillion dollars had been wiped off the books on global markets since June 3. (VIX very large)

**Appendix B. Figure to be used in Financial Stability Report Box**

Global and Regional (US, EU, Switzerland) Risk Indices 1995-01-31 / 2018-09-28

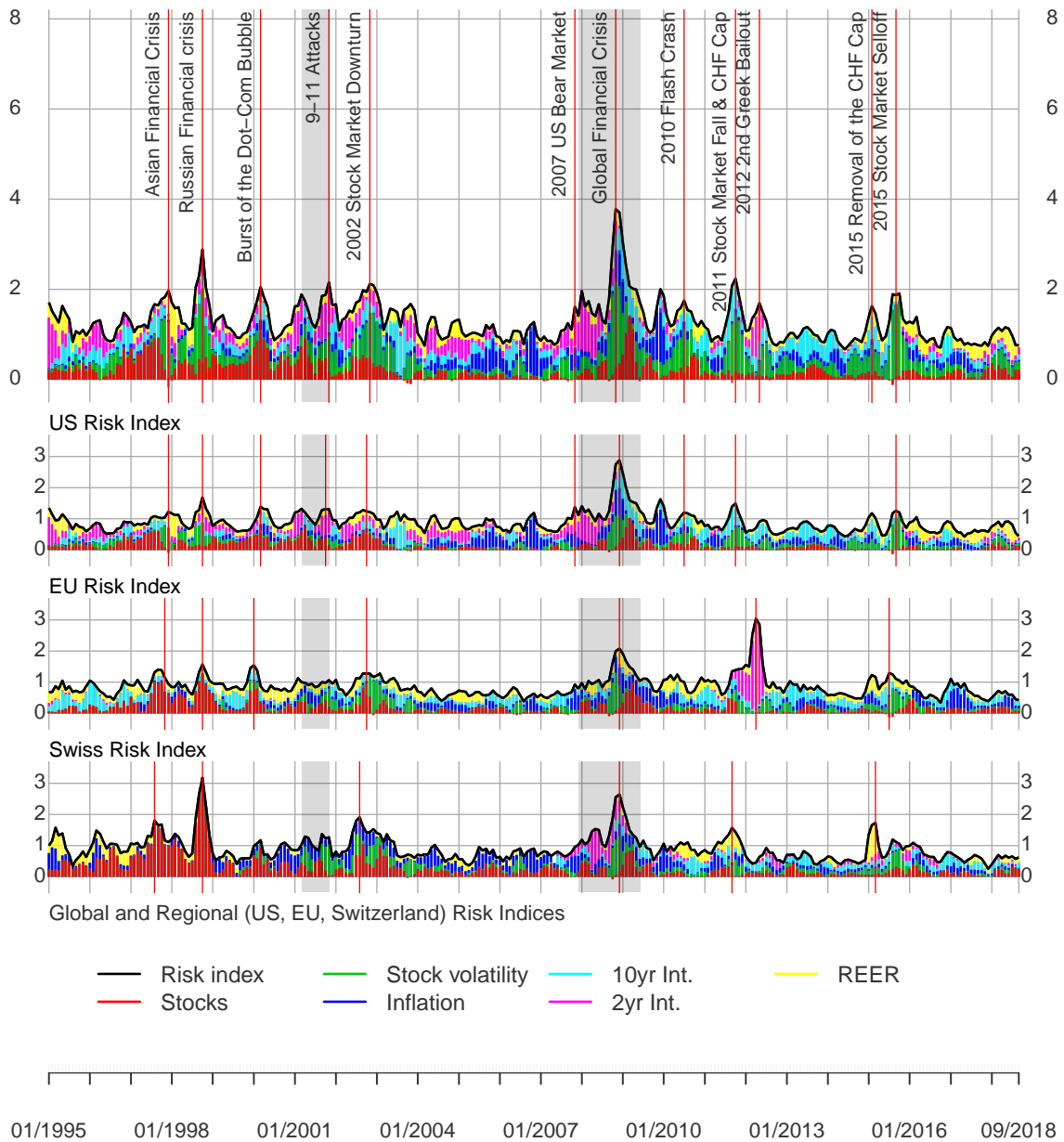


Figure B.5: Global and Regional (US, EU, Switzerland) Risk Indices. Data was retrieved from Bloomberg. The sample period is 1990:01-2018:06, the plotting period is 1995:01-2018:06.

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