Business Sentiment in South Africa

Confidence and Uncertainty

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3. Confidence Results
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5. Relationship with GDP
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Introduction

Business Sentiment

Methods to create business sentiment indicators

Use the BER business tendency surveys

Try to improve on existing indicators

Confidence:

- Agents' perceptions of the current and expected business climate.

Uncertainty:

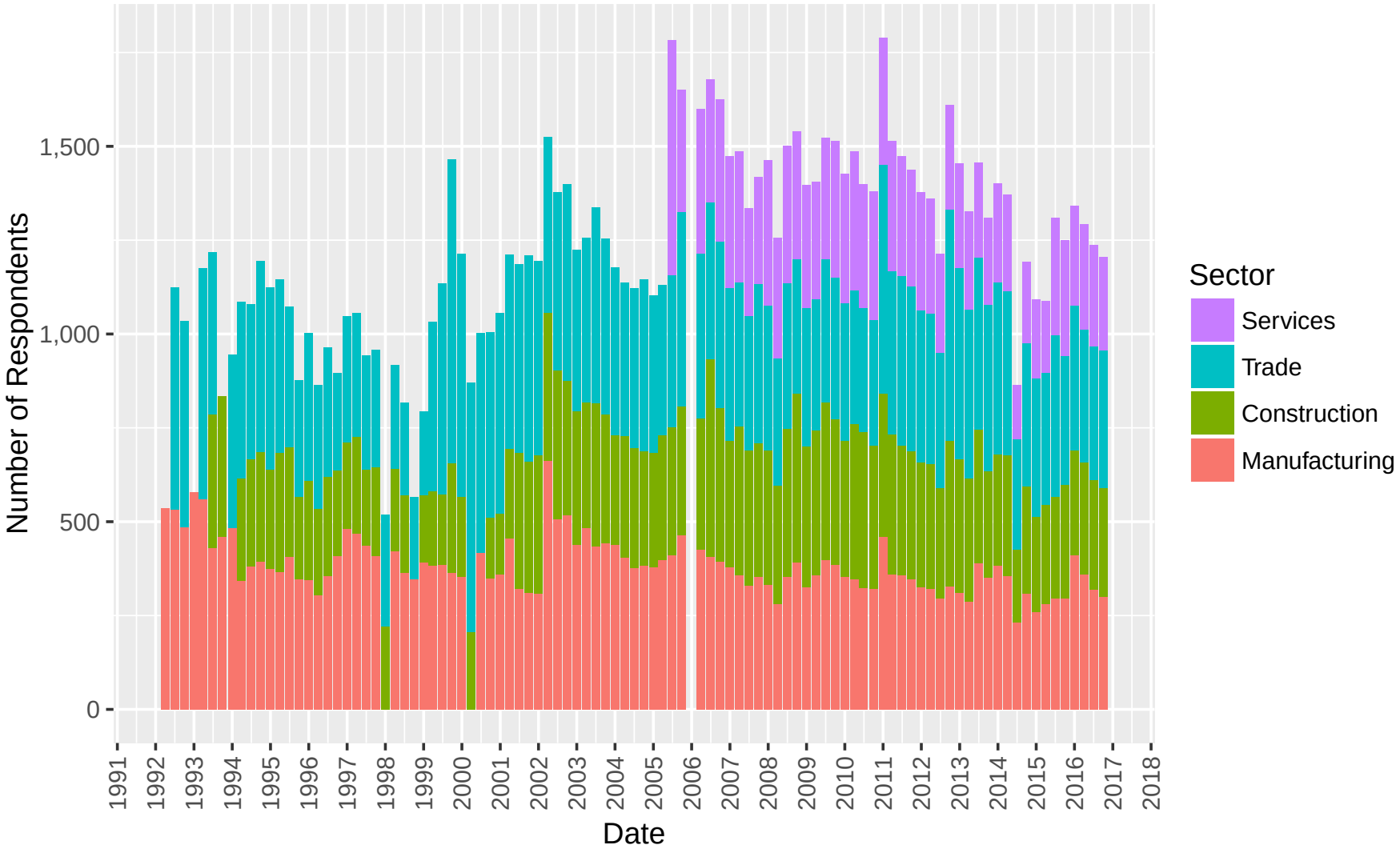
- Agents' inability to forecast the probability of future events occurring.

Compare to real GDP growth

- Correlations
- Concordance
- Predictive content

Data: BER Business Tendency Surveys

Number of respondents over time per sector



BER Business Tendency Surveys

Measure sentiment from qualitative surveys of agents with disparate views

SERVICES SURVEY QUESTIONNAIRE

Please tick the appropriate boxes. Answer only the questions applicable to your business. Confidential: Individual replies will not be published or quoted.

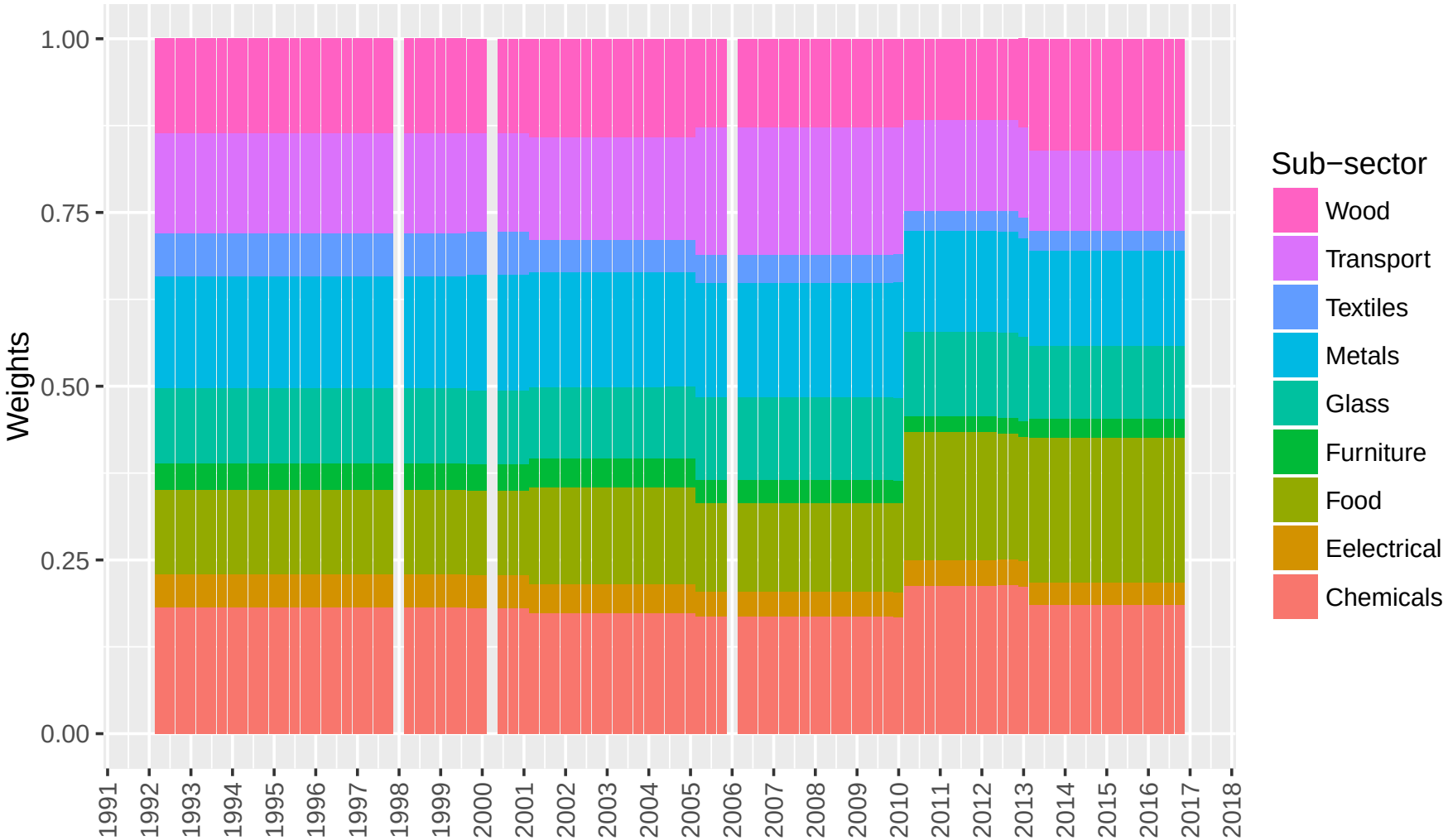
		Estimated development 3rd Quarter 2012				Expected development 4th Quarter 2012		
1. Are prevailing business conditions	Q1	Satisfactory	Unsatisfactory					
2. Compared with the same quarter of a year ago ...								
a) General business conditions	Q2 A	Improve	Same	Deteriorate	P	Improve	Same	Deteriorate
b) Volume of business	Q3 A	Up	Same	Down	P	Up	Same	Down
c) Number of people employed	Q4 A	Up	Same	Down	P	Up	Same	Down
d) Overall profitability of the business	Q5 A	Up	Same	Down	P	Up	Same	Down
e) Average selling prices / fees charged	Q6 A	Up	Same	Down	P	Up	Same	Down

Questions for composite indicators

Table 1: Survey questions used by sector

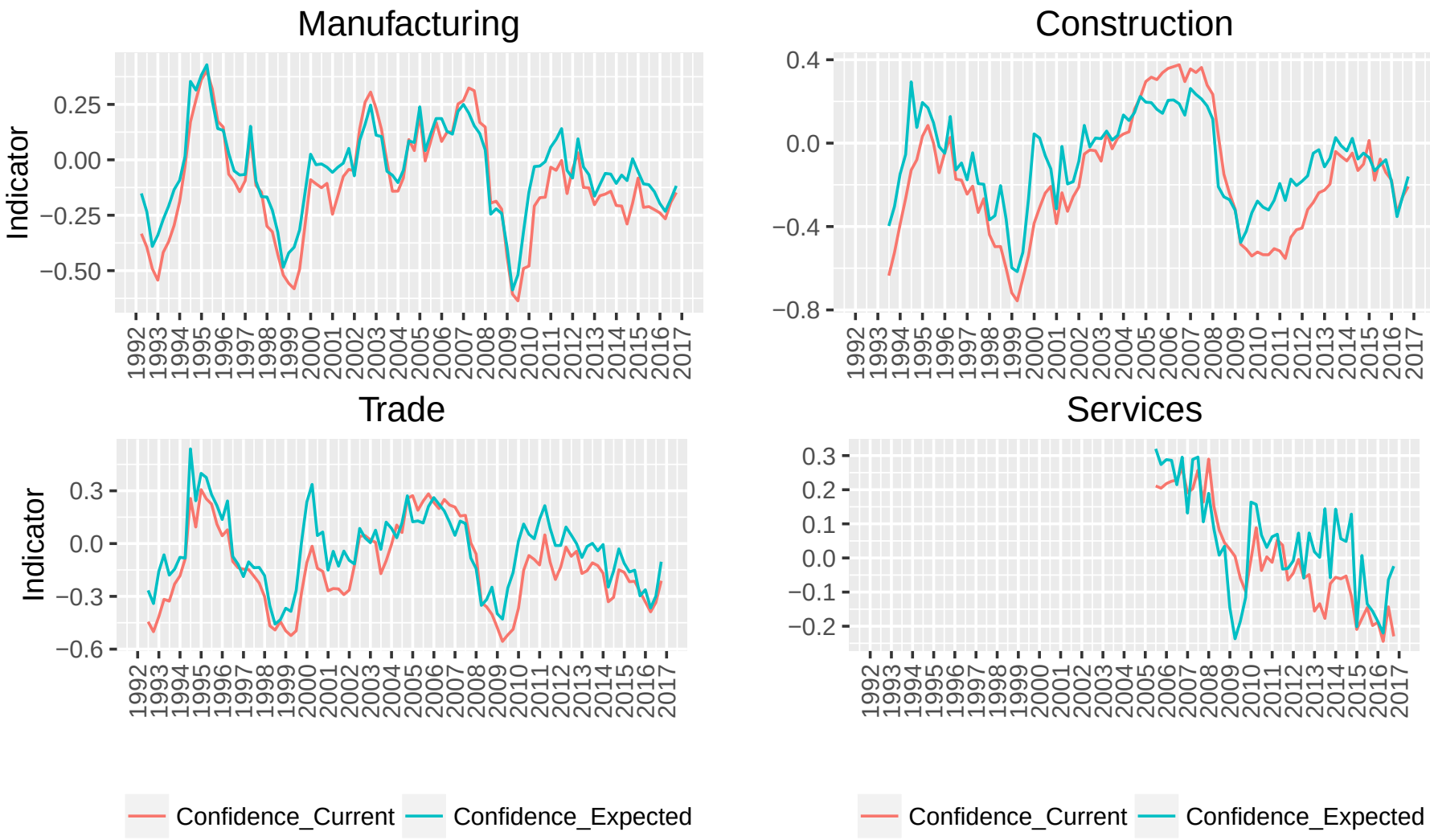
Survey Question	Manufacturing	Construction	Trade	Services
Business Conditions	X	X	X	X
Activity	X	X	X	X
Employment	X	X	X	X
Profitability		X	X	X
Orders Placed	X		X	

Subsector weights in the manufacturing sector

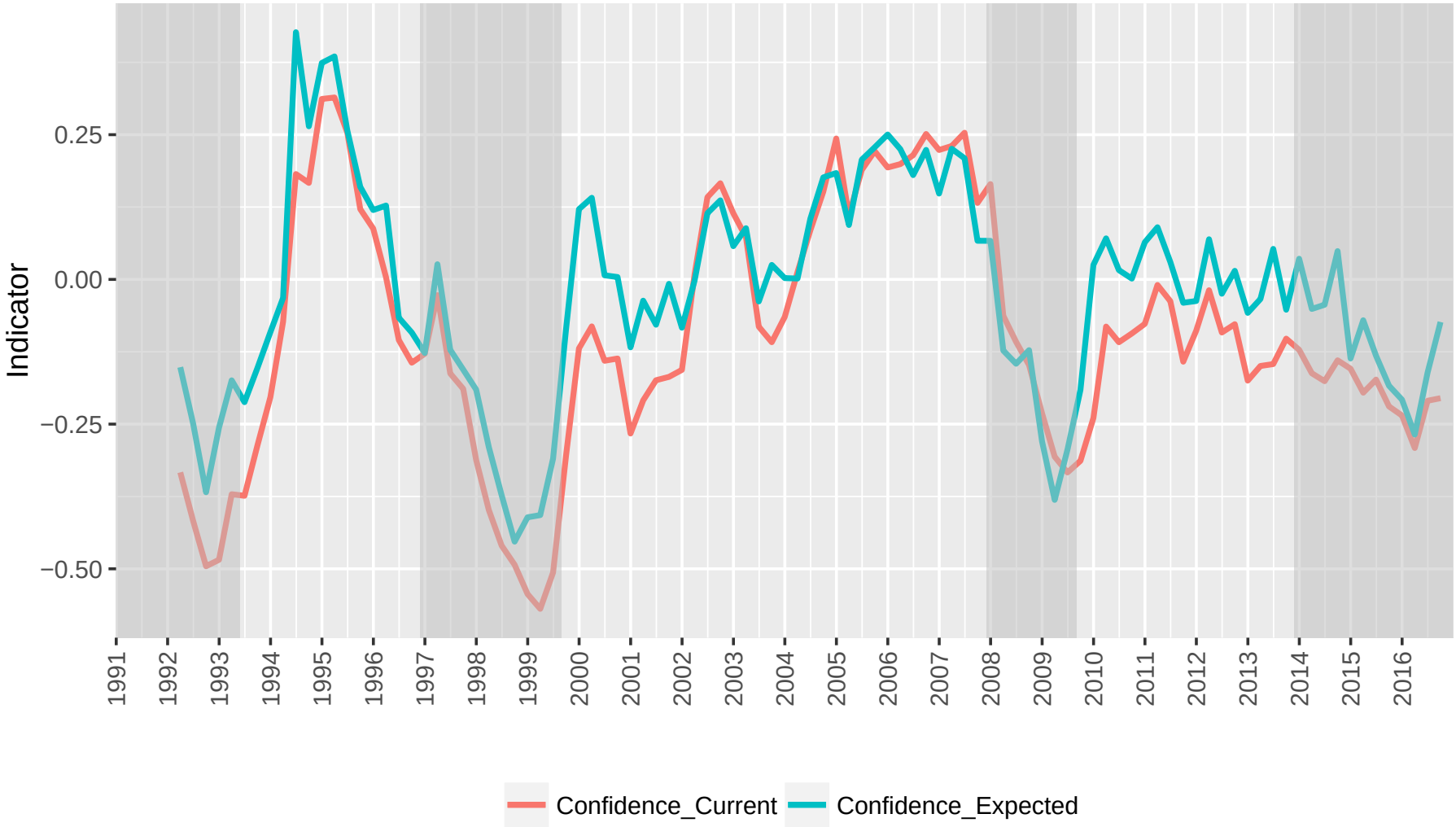


Confidence Results

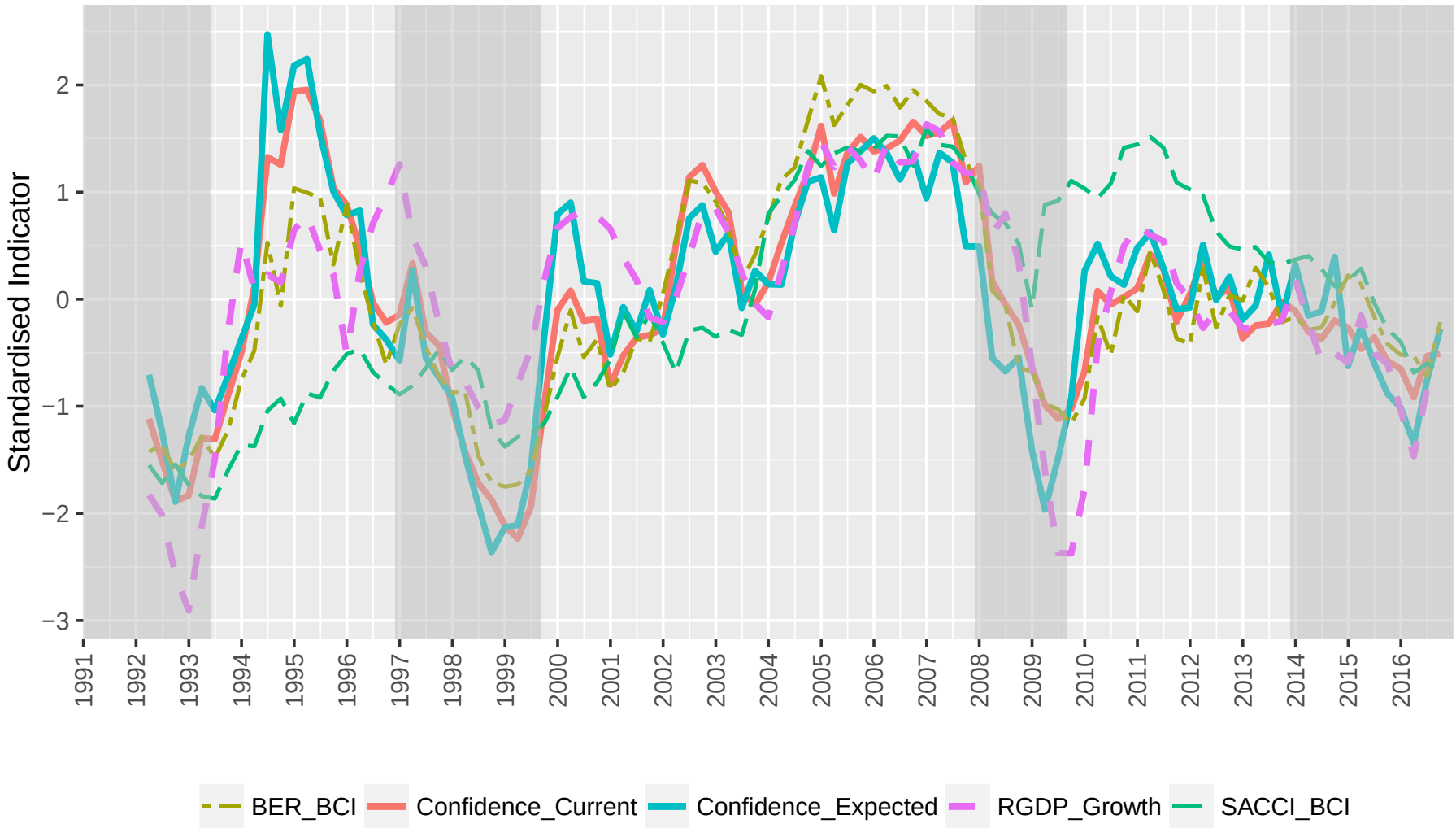
Composite sectoral confidence indicators on current and expected conditions



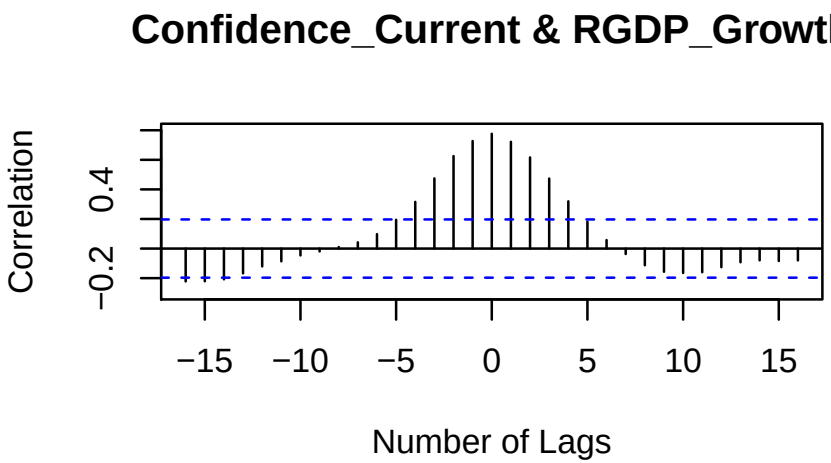
Composite Confidence Indicators: Current & Expected Conditions

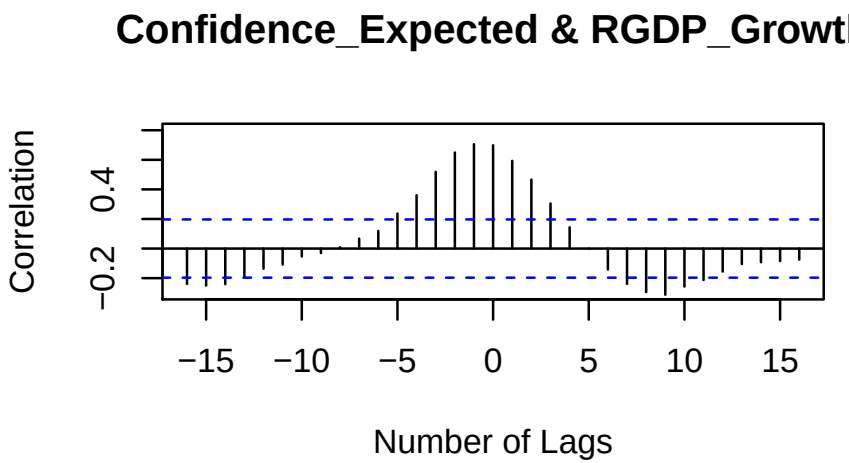


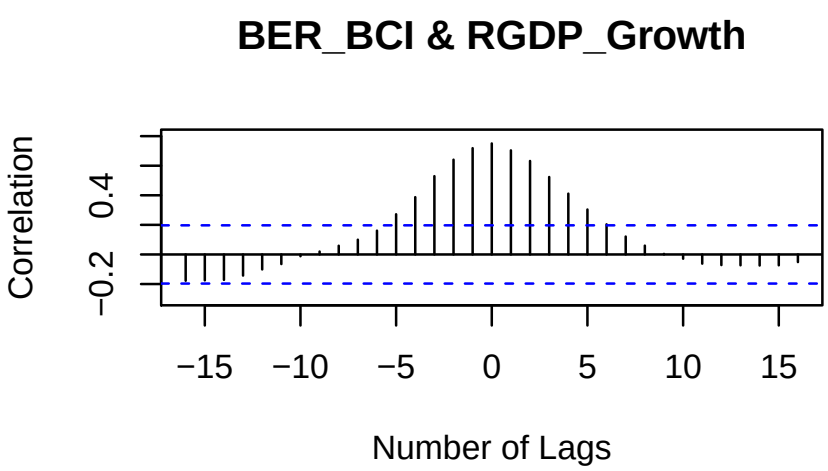
Confidence indicators compared to real GDP growth

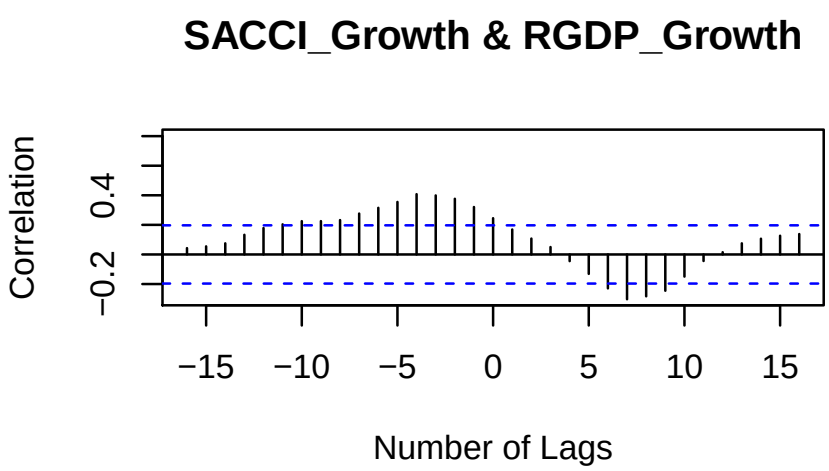


Cross-correlograms of the confidence indicators

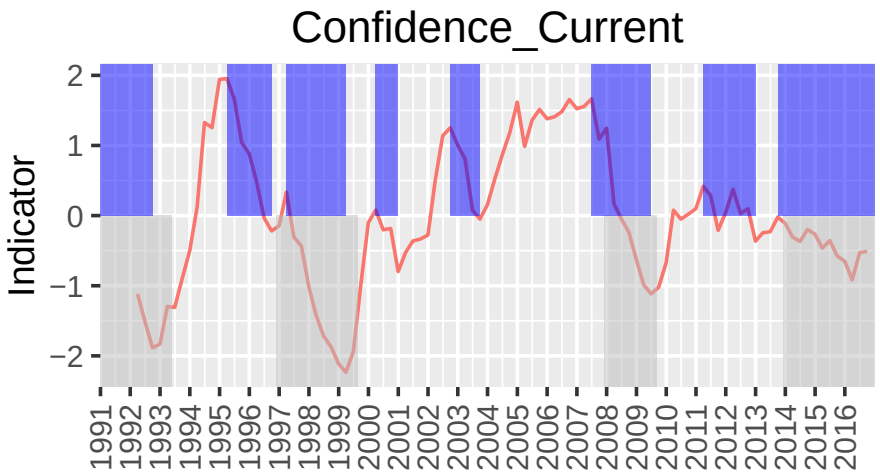


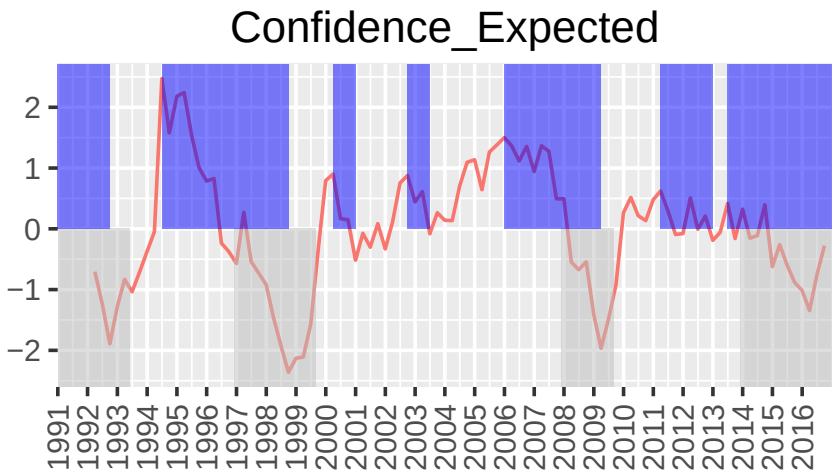


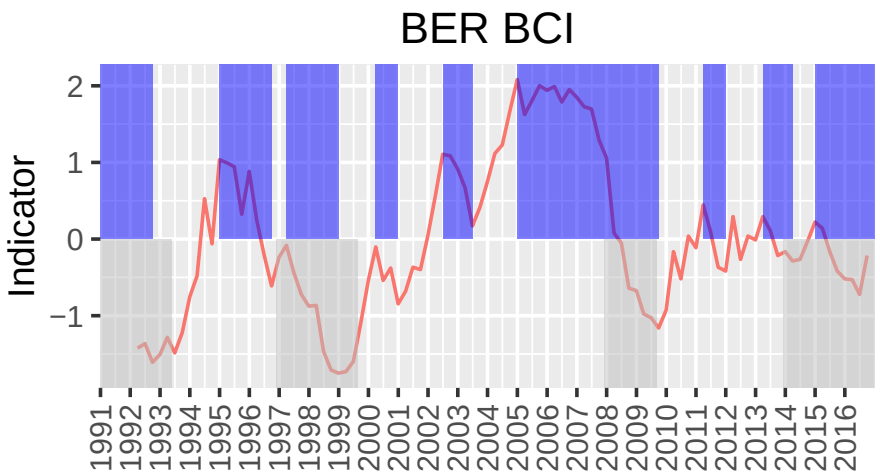


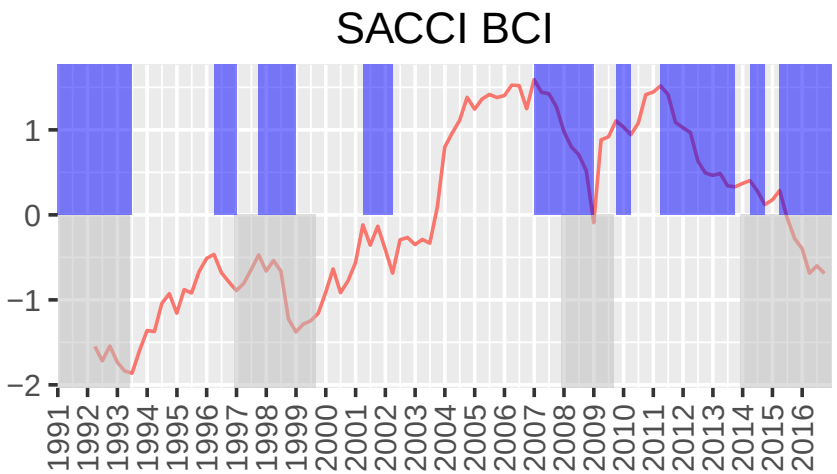


Turning points compared to the official SARB turning points









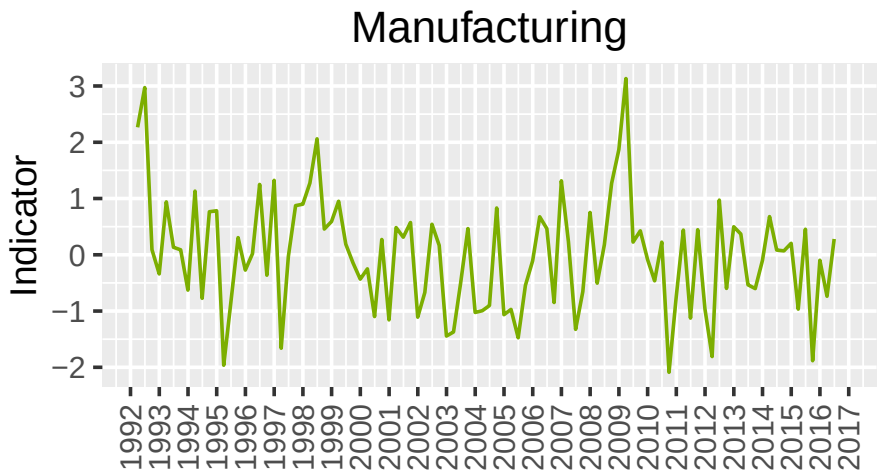
Concordance

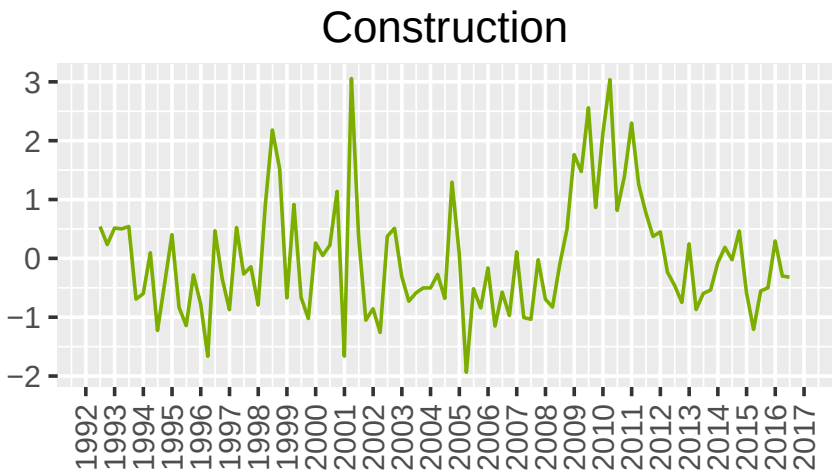
Table 2: Concordance statistics with the SARB business cycle

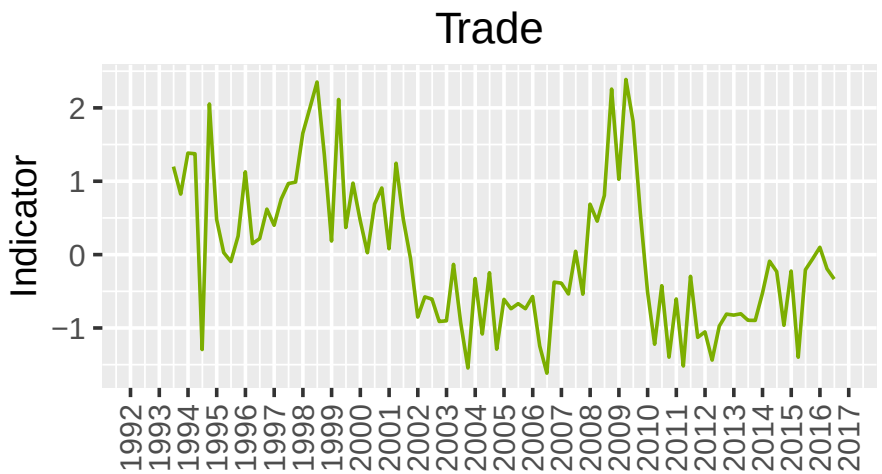
	Confidence_Current	Confidence_Expected	BER_BCI	SACCI_BCI
lag=0	0.697***	0.596**	0.5556	0.6263*
lag=1	0.7071***	0.6465***	0.5859*	0.6566***
lag=2	0.6768***	0.6566***	0.6162**	0.6869***
lag=3	0.6263**	0.6465***	0.5859**	0.6667***

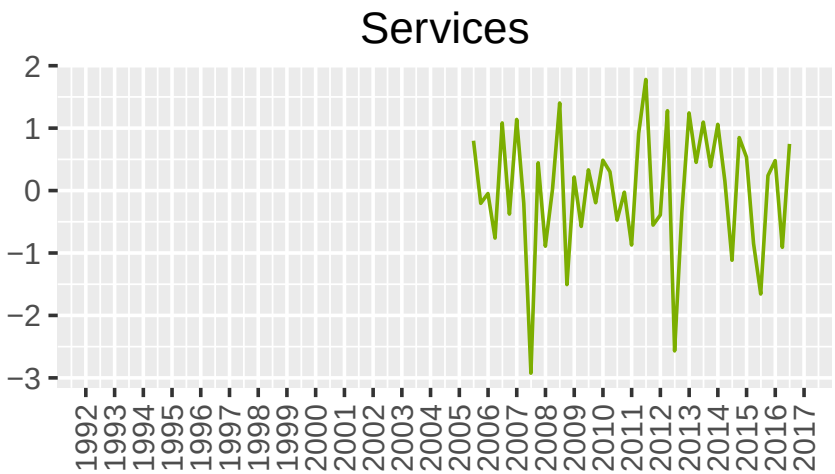
Uncertainty Results

Composite Sectoral Uncertainty Indicators: Scaled Dispersion

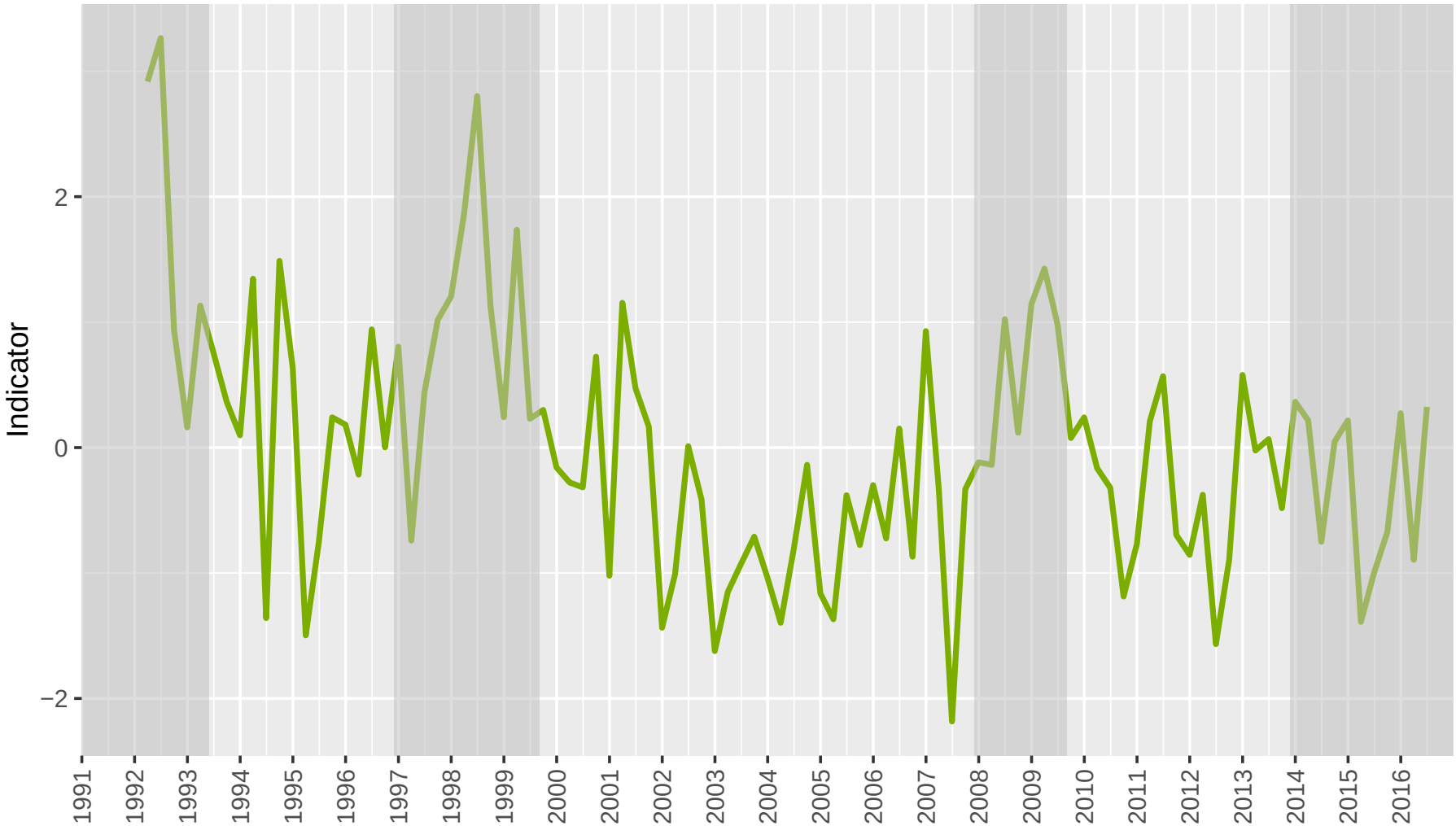




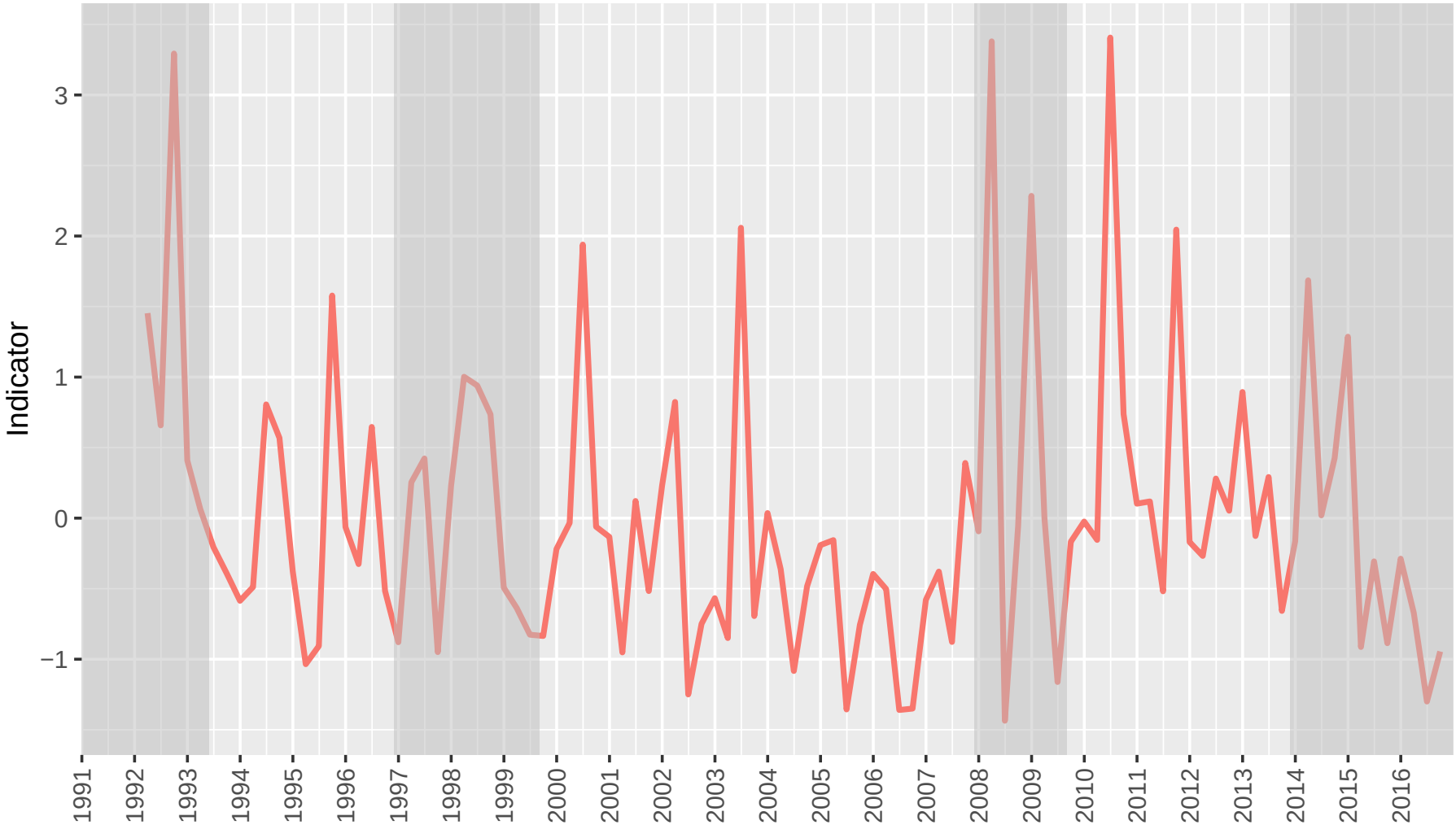




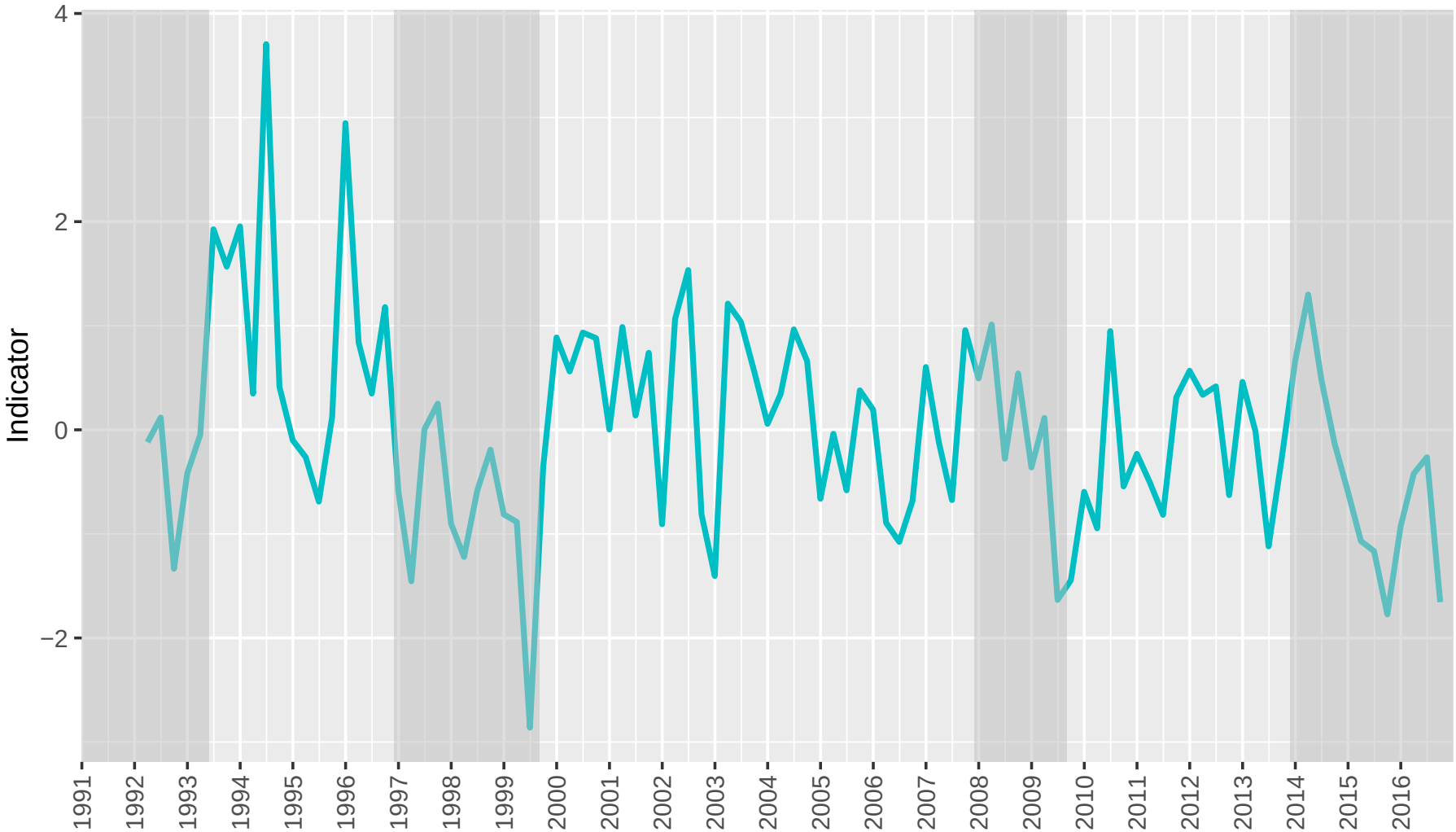
Composite Uncertainty Indicators: Scaled Dispersion



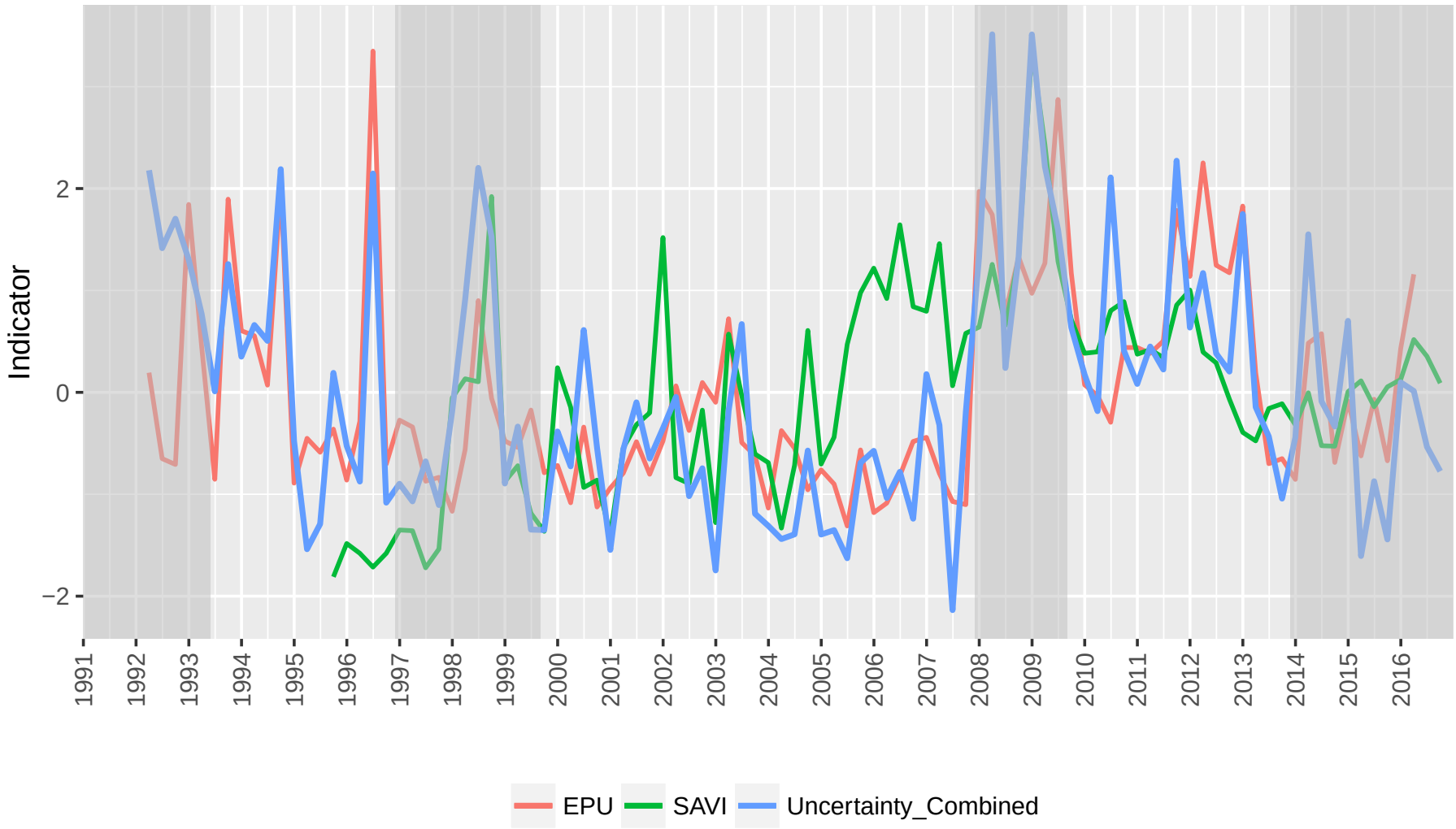
Composite Uncertainty Indicators: Aggregate Forecast Error



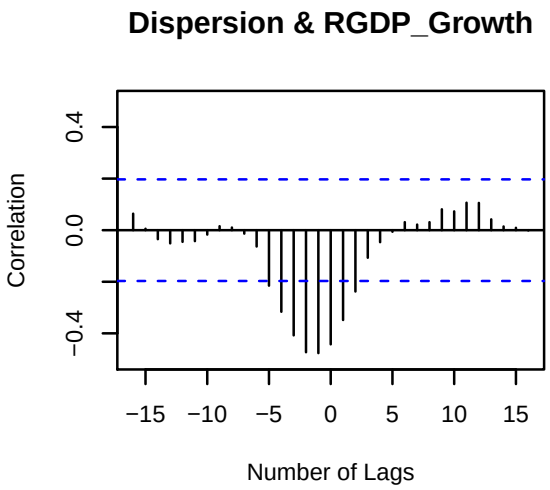
Composite Uncertainty Indicators: Idiosyncratic Forecast Error

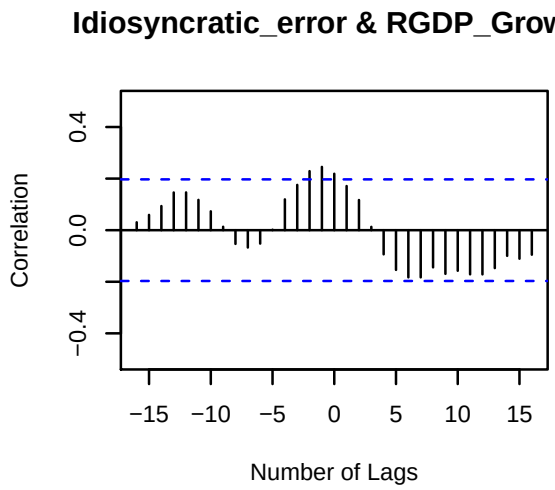


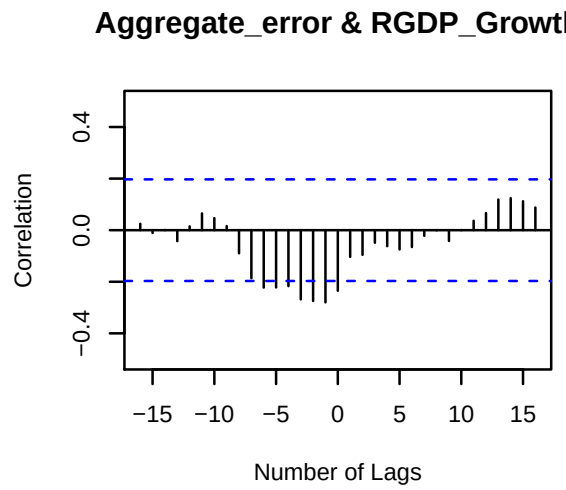
Comparing Uncertainty Indicators

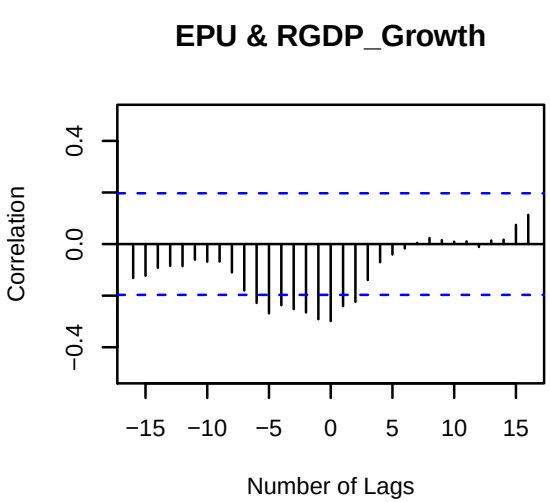


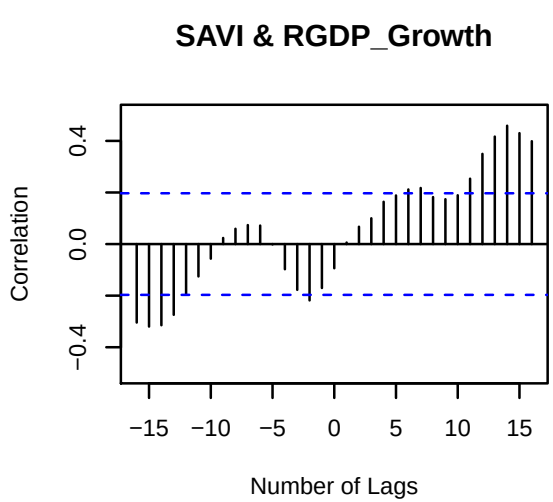
Cross-correlograms

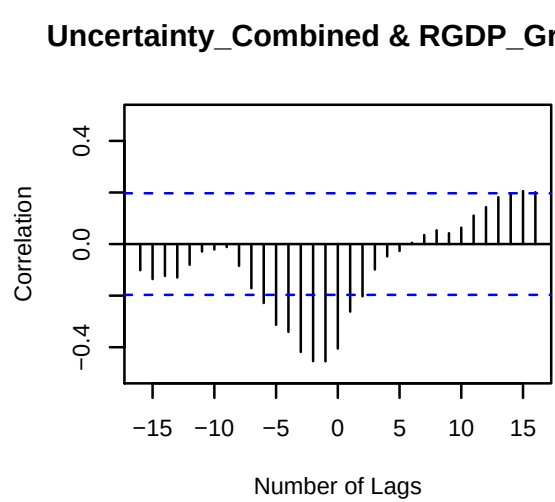






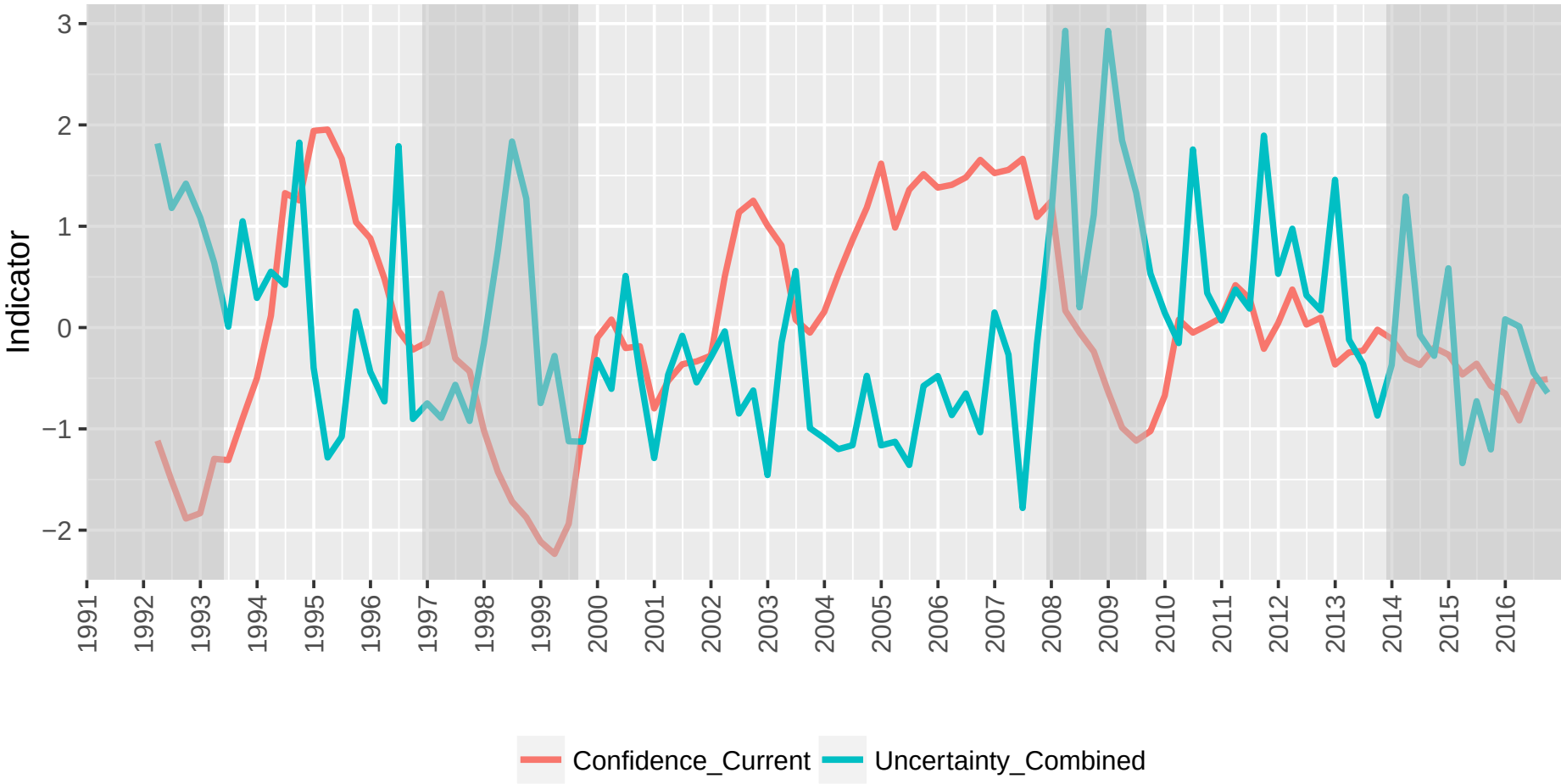




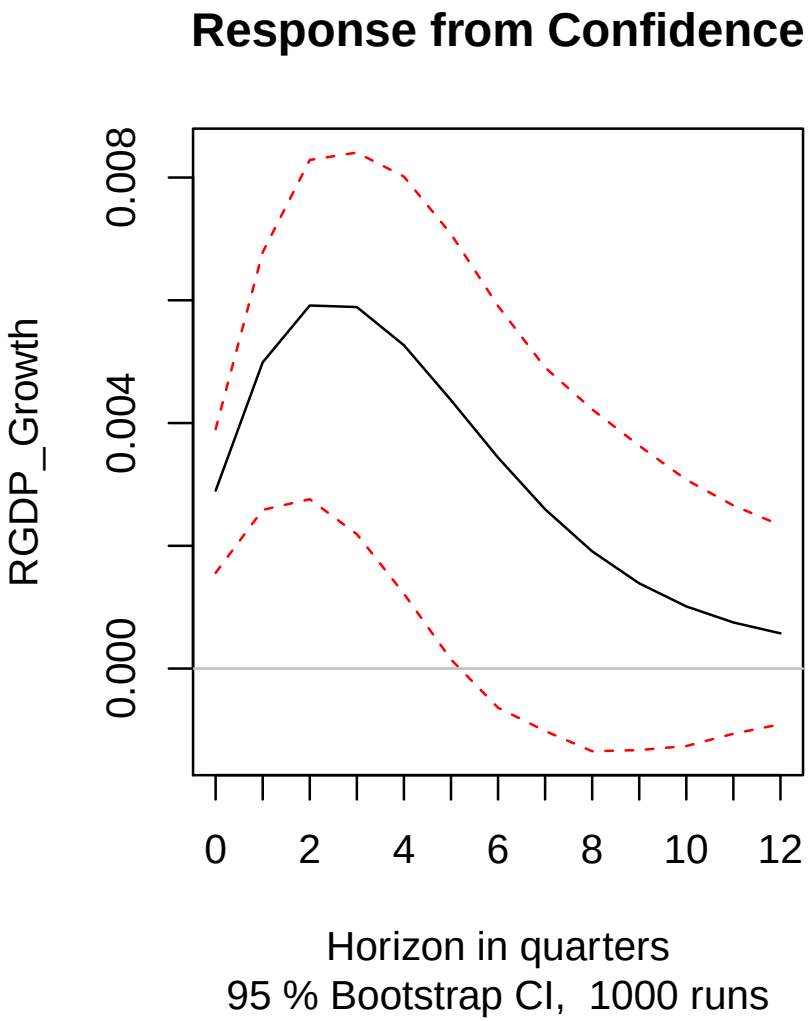


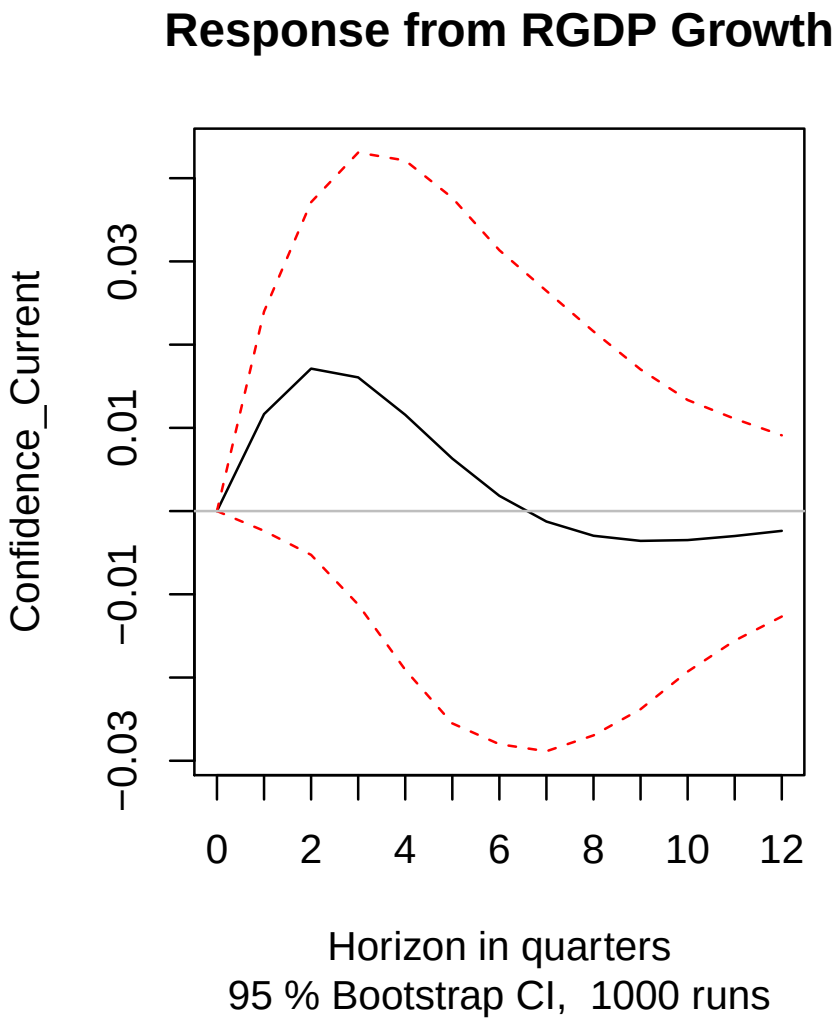
Relationship with GDP

Confidence and Uncertainty

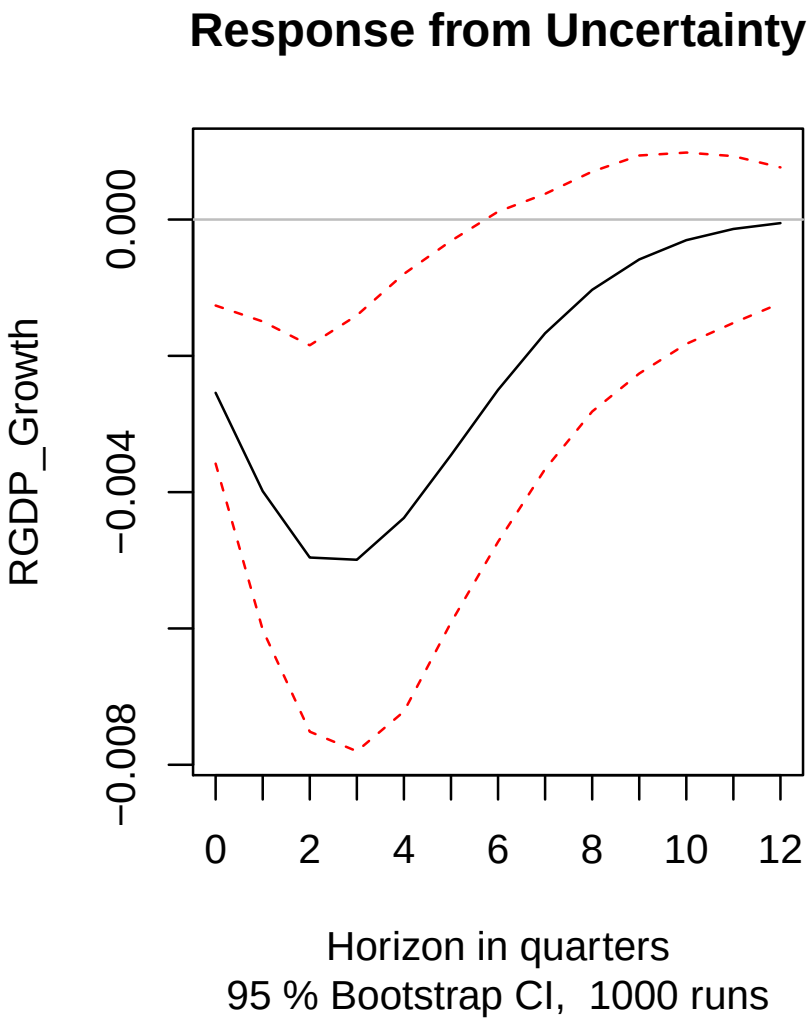


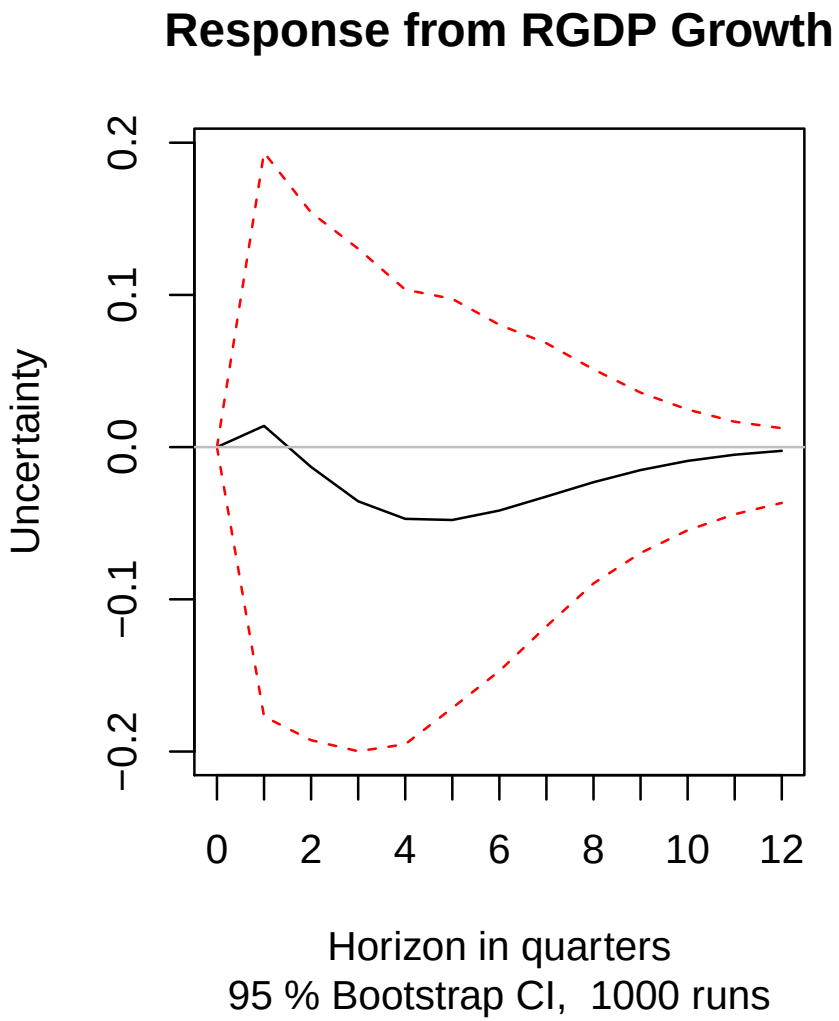
IRFs of confidence and real GDP growth



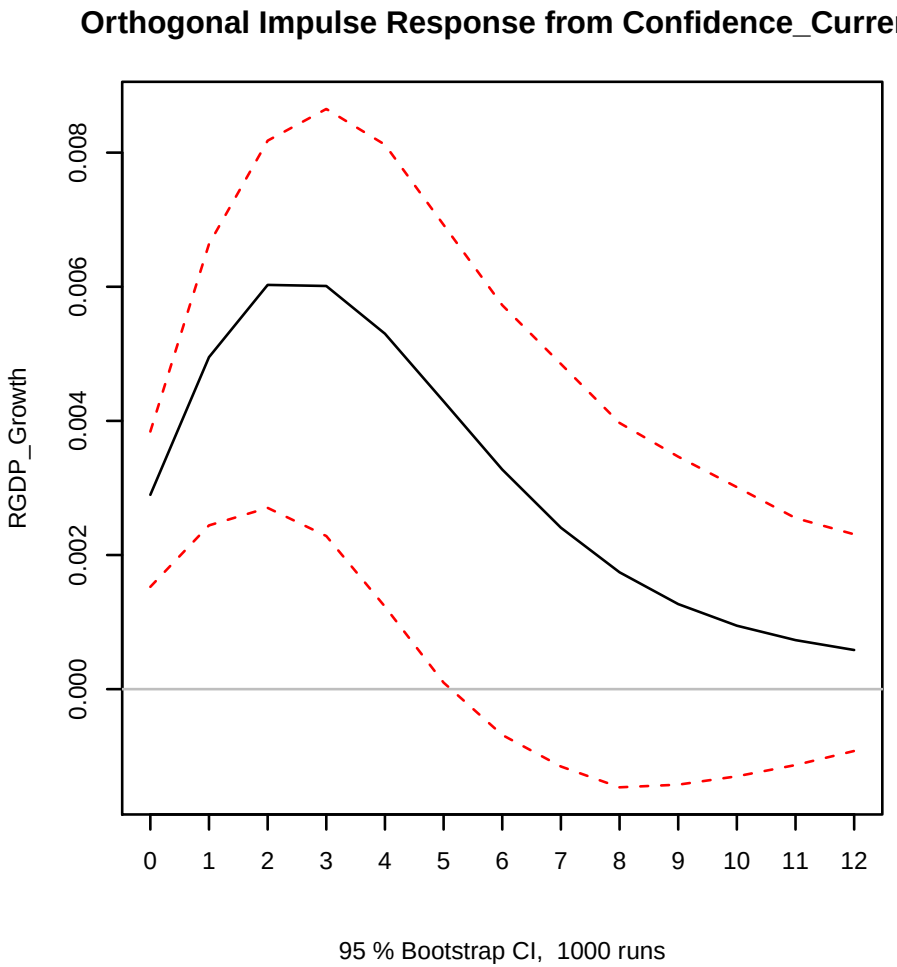


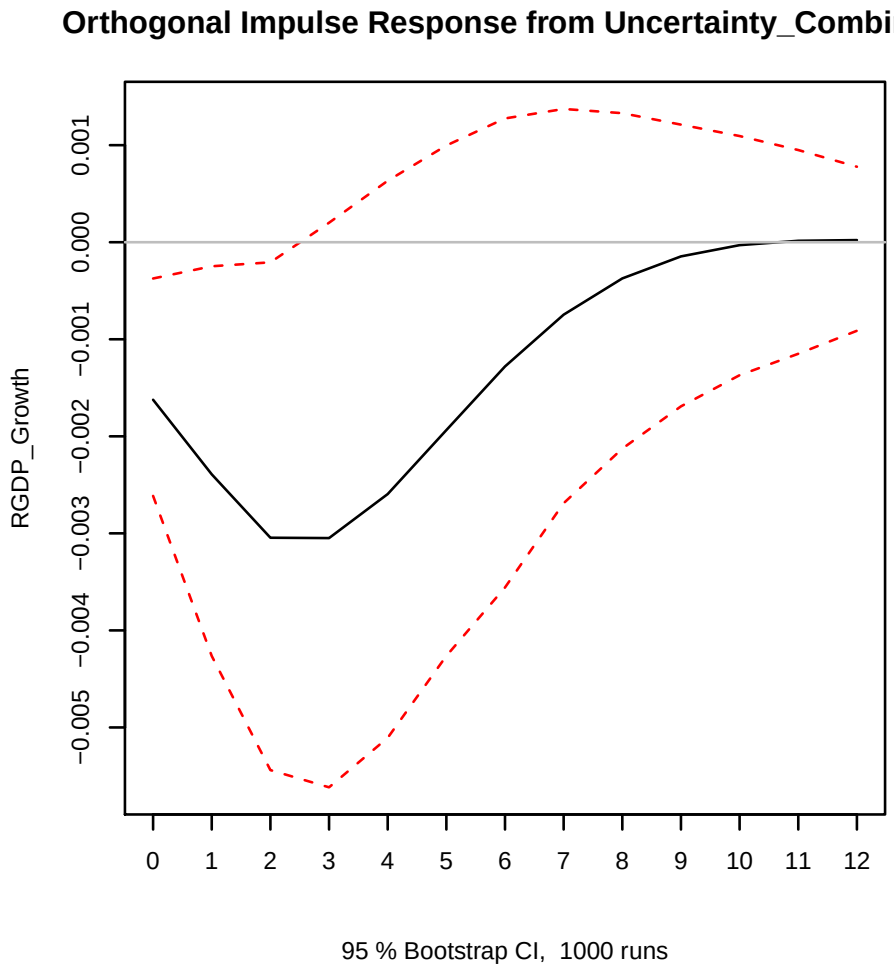
IRFs of uncertainty and real GDP growth



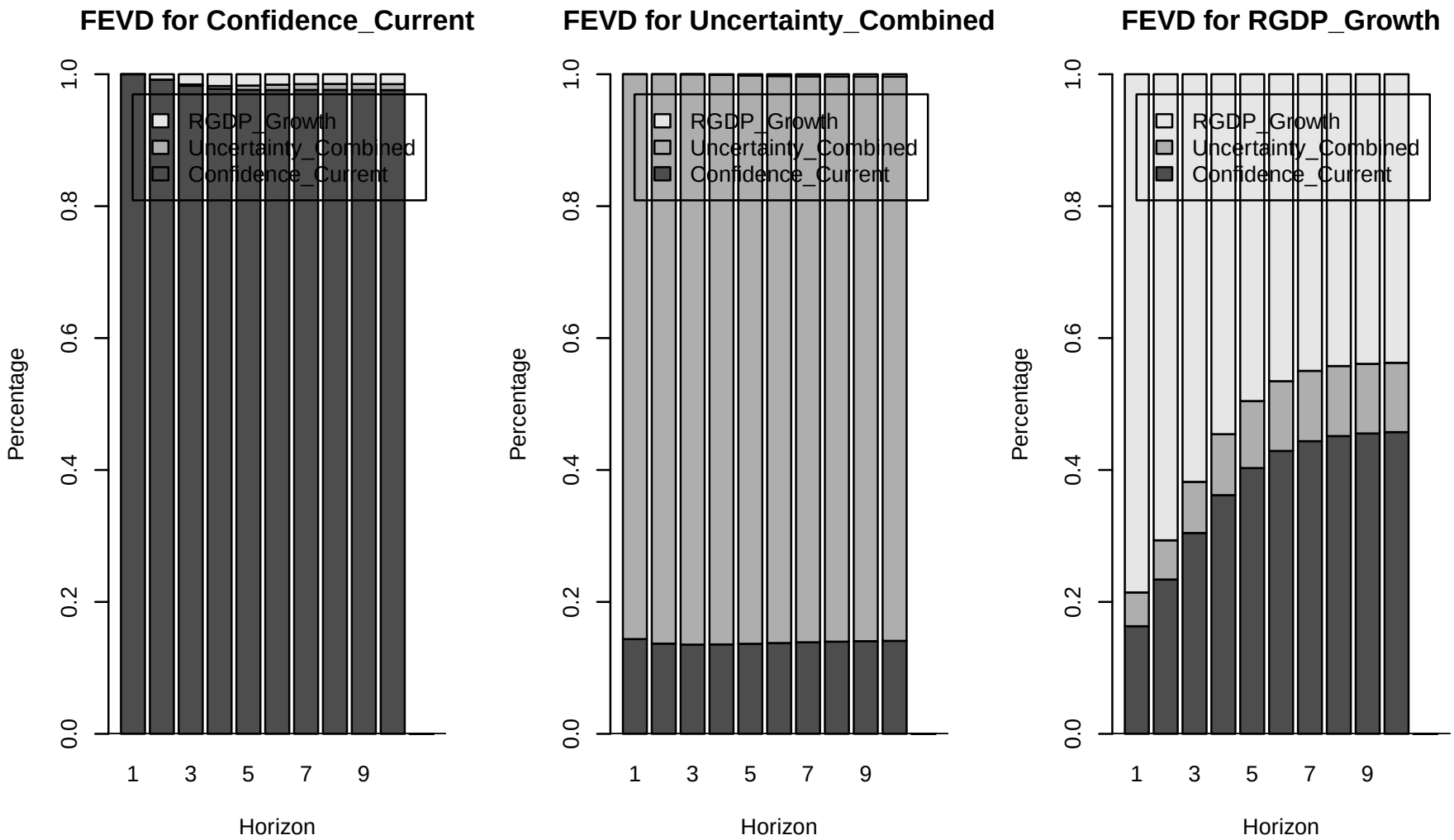


IRFs of 3-variable VAR

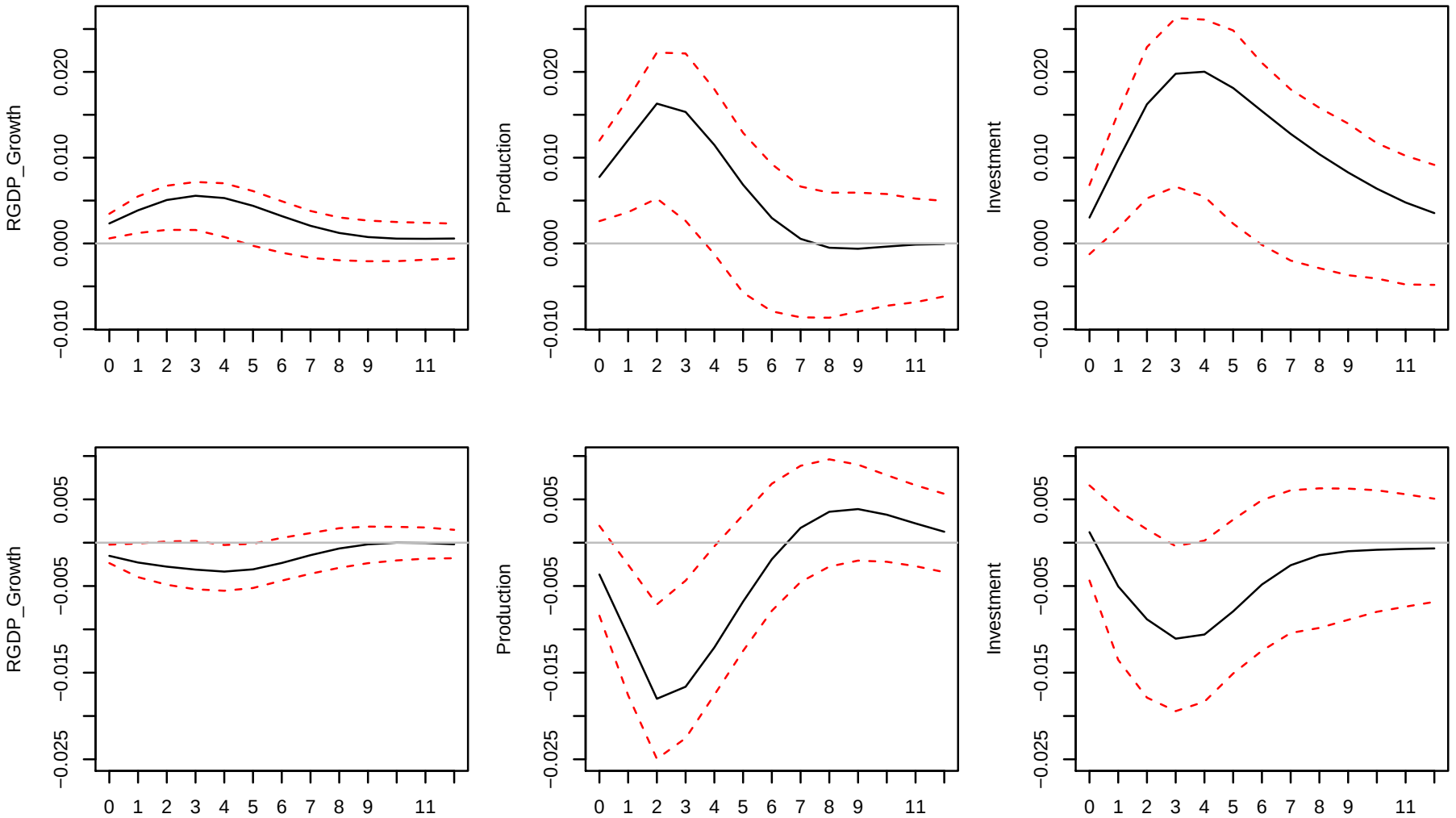




FEVD: three-variable VAR



IRFs of expanded VAR



Conclusion

Conclusion

New indicators improve on existing indicators

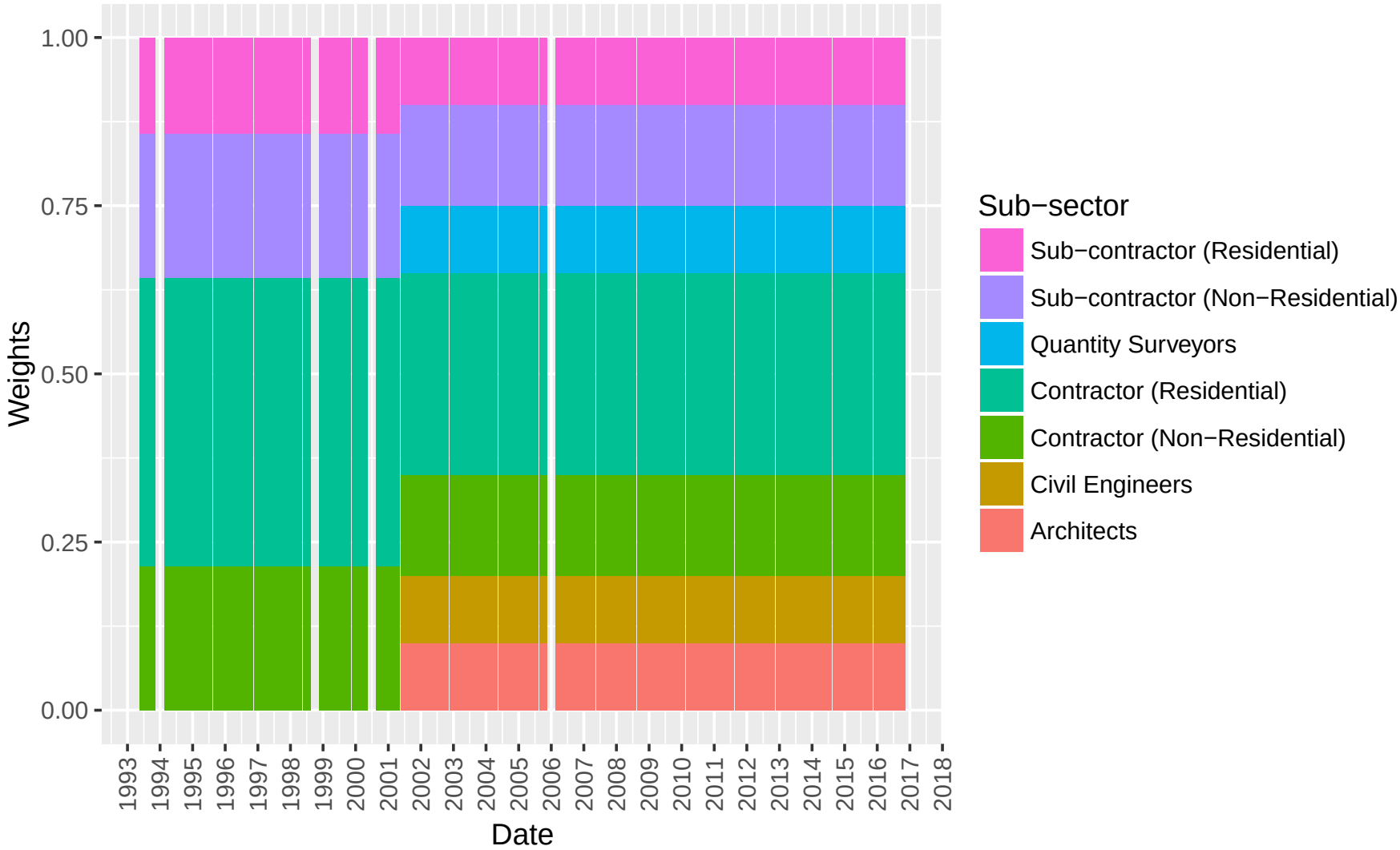
- Higher correlation with real GDP growth (tracking record)
- Higher concordance with official SARB cycle

New indicators may be useful

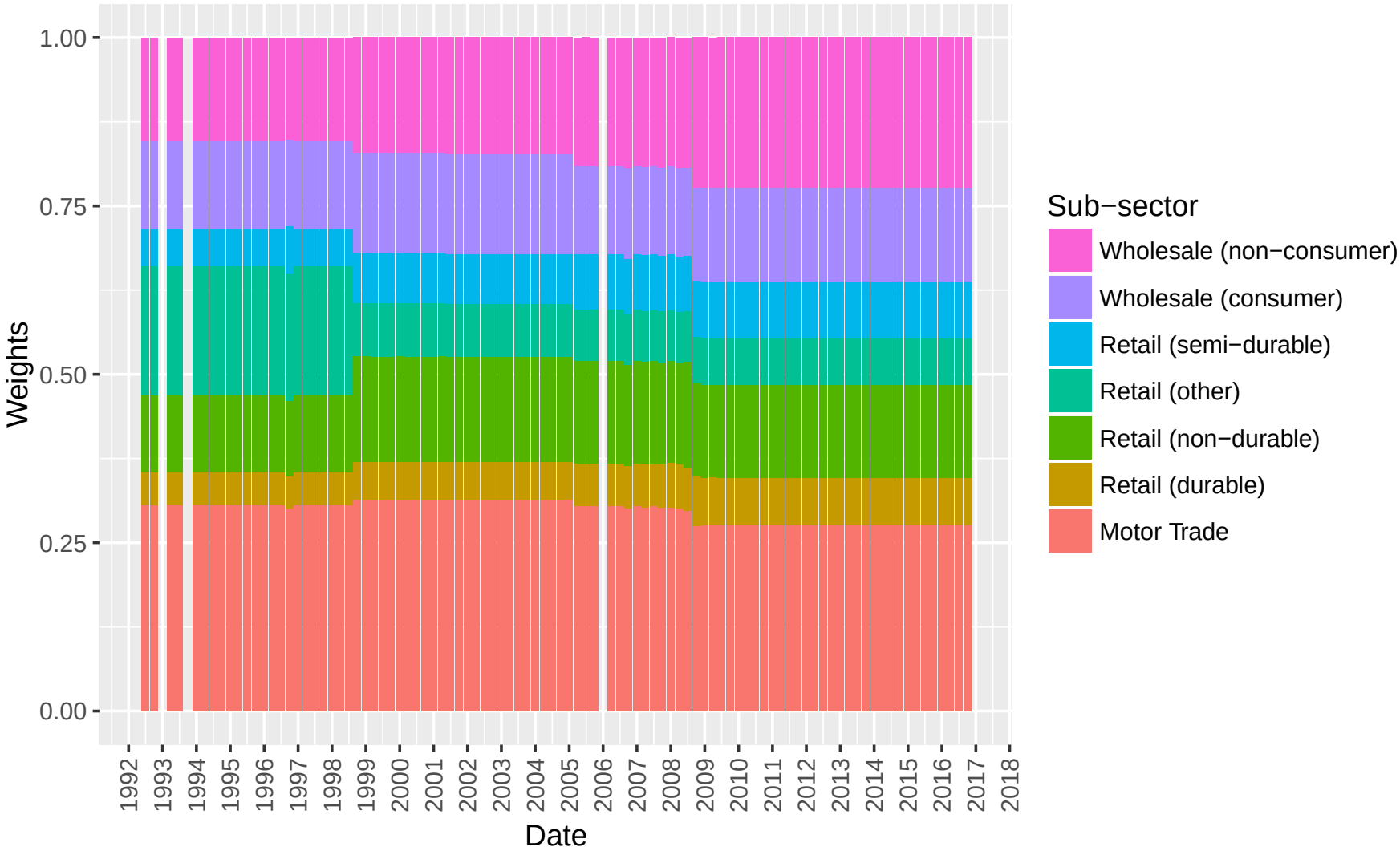
- Advanced warning of turning points (early availability)
- Predictive content
- Useful for forecasting (out-of-sample and real-time forecasting)
- Methods could be useful for Consumer Tendency Surveys

The End

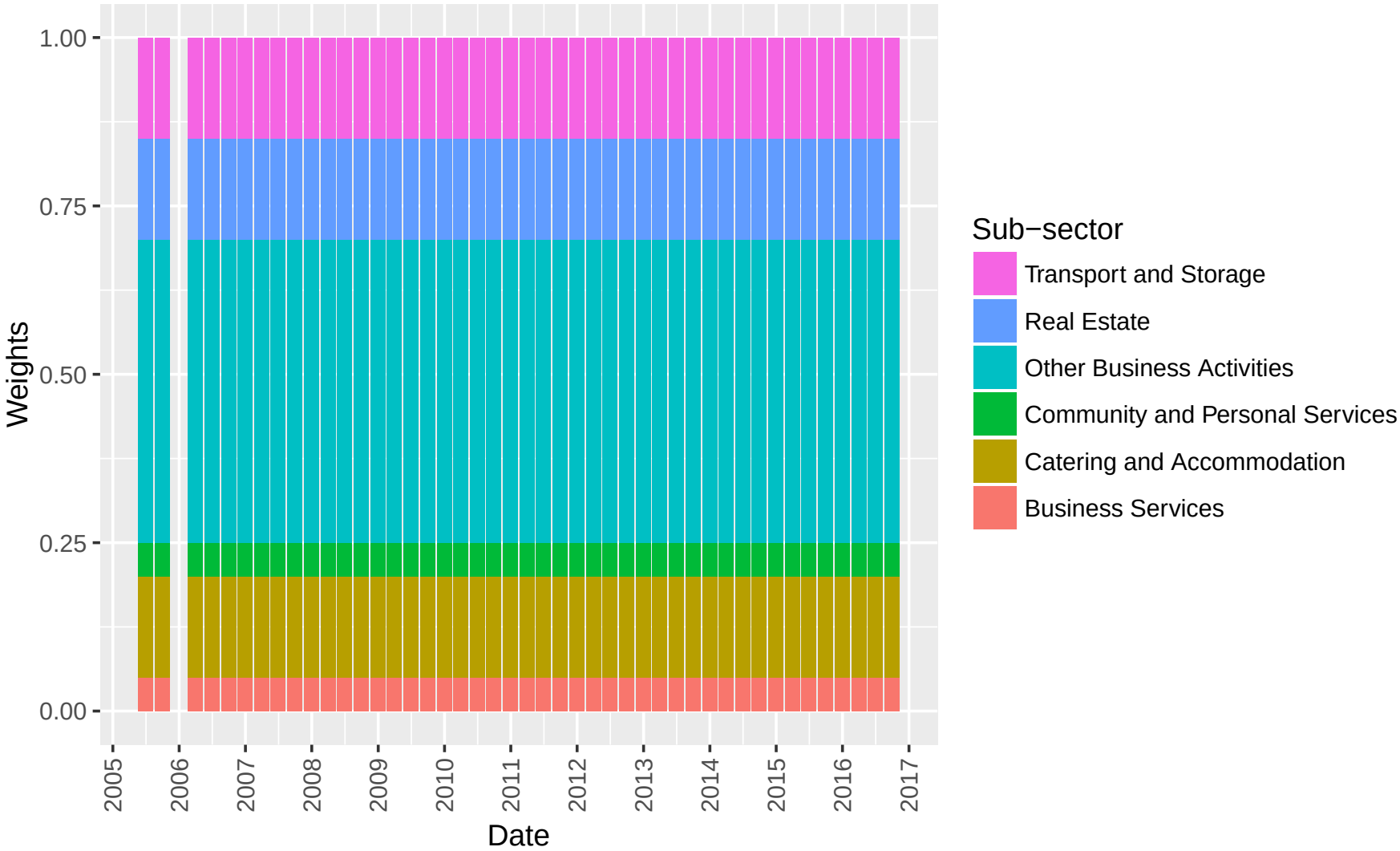
Subsector weights applied in the construction sector



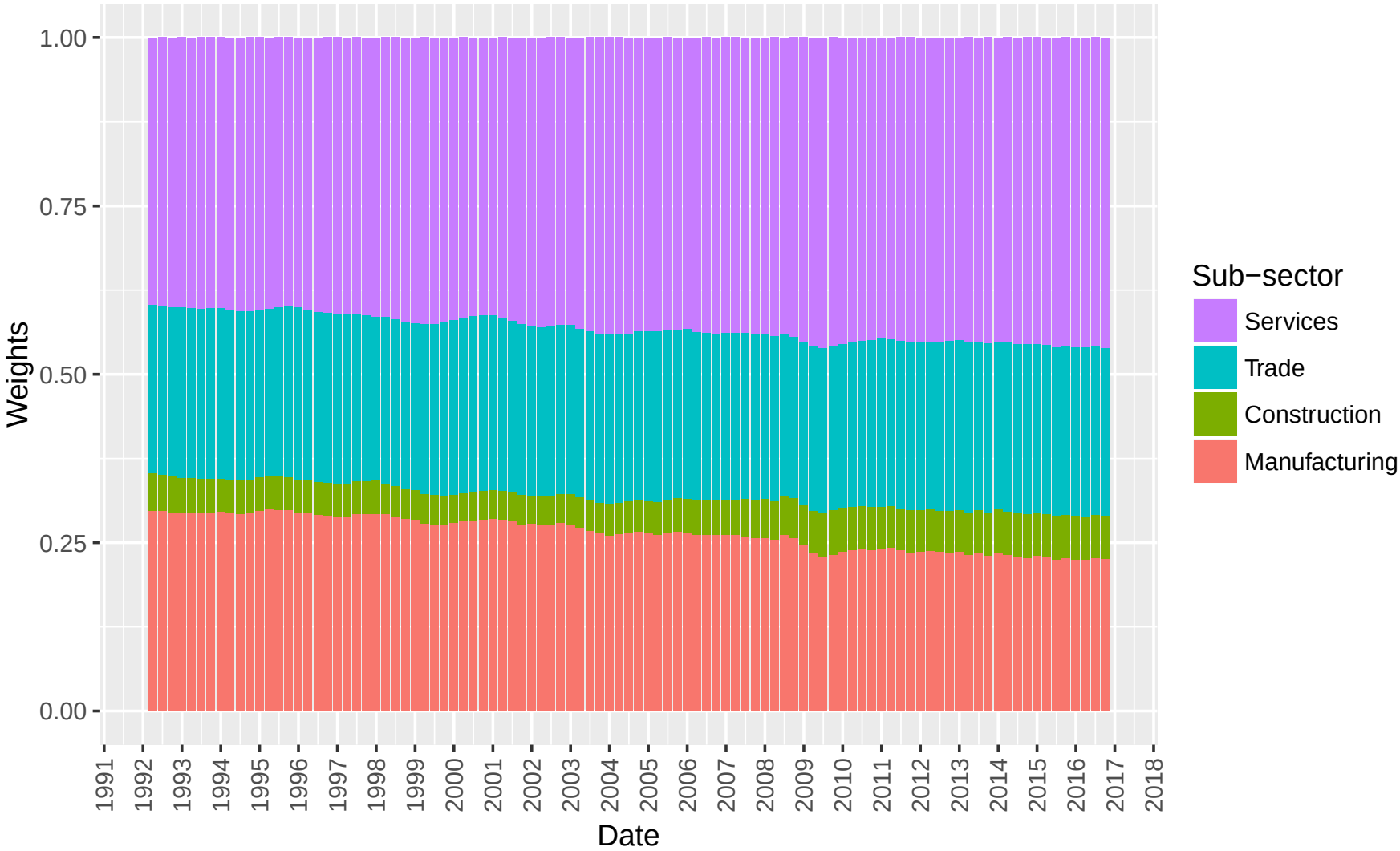
Subsector weights applied in the trade sector



Subsector weights applied in the services sector



GDP share weights



Methodology: Confidence

$$f(\Delta^h Y_{t+k}) = \begin{cases} -1, & \text{if } \Delta^h Y_{t+k} < 0 \\ 0, & \text{if } \Delta^h Y_{t+k} = 0 \\ 1, & \text{if } \Delta^h Y_{t+k} > 0 \end{cases}$$

$$C_t^0 = \frac{1}{W_t} \sum_{i=1}^{N} w_{it} f_t(\Delta^4 Y_{i,t})$$

$$C_t^1 = \frac{1}{W_t} \sum_{i=1}^{N} w_{it} f_t(\Delta^4 Y_{i,t+1}),$$

Methodology: Uncertainty

$$D_t^1 = \frac{1}{W_t}\sum_{i=1}^{N}(w_{it} f_t(\Delta^4 Y_{i,t+1}) - \mu_{t+1})^2,$$

$$D_{t+1}^0 = \frac{1}{W_{t+1}}\sum_{i=1}^{N}(w_{it+1} f_{t+1}(\Delta^4 Y_{i,t+1}) - \mu_{t+1})^2$$

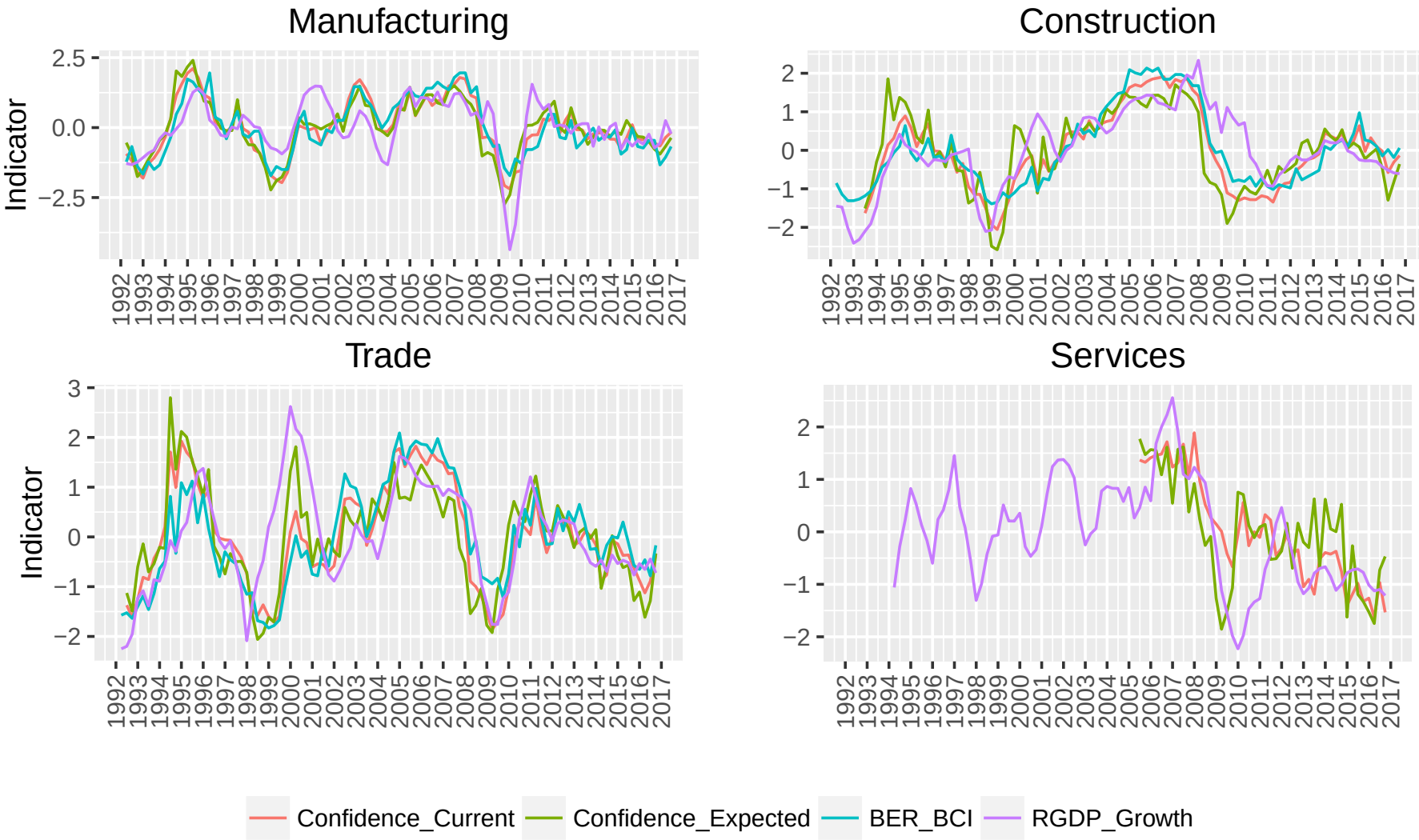
$$D_t = \frac{D_t^1}{D_{t+1}^0}$$

$$\epsilon_{i,t+1} = f_{t+1}(\Delta^4 Y_{i,t+1}) - f_t(\Delta^4 Y_{i,t+1})$$

$$A_t = \bar{\epsilon}_{it+1}^2,$$

$$I_t = \frac{1}{W_{t+1}}\sum_{i=1}^{N}(w_{it+1}\epsilon_{it+1} - \bar{\epsilon}_{t+1})^2,$$

Sectoral confidence indicators



Correlations: Confidence

Table 3: Correlations of confidence indicators and real GDP growth

	Confidence_Current	Confidence_Expected	BER_BCI	SACCI_Growth
Confidence_Current				
Confidence_Expected	0.92***			
BER_BCI	0.93***	0.82***		
SACCI_Growth	0.35***	0.48***	0.30***	
RGDP_Growth	0.78***	0.70***	0.75***	0.24**

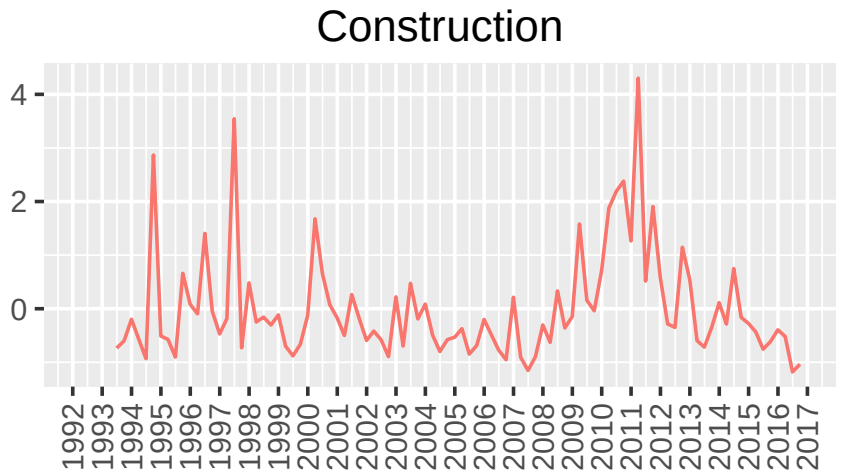
Sectoral confidence correlations

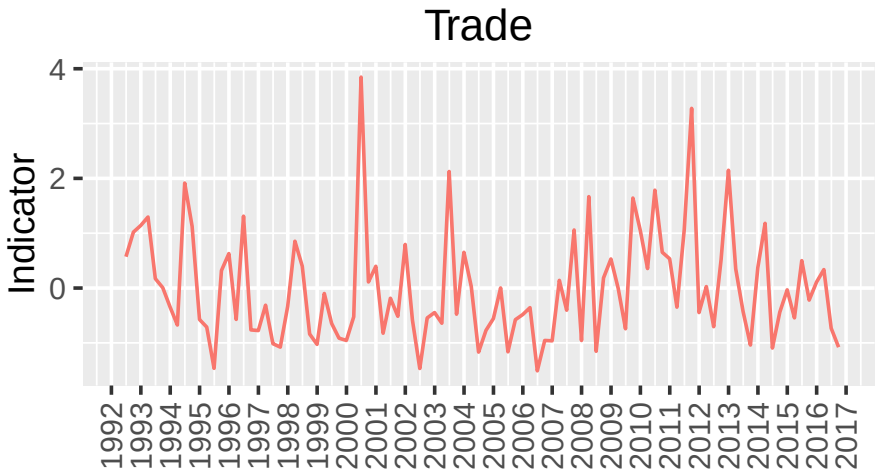
Table 4: Correlations of sectoral confidence and real sectoral GDP growth

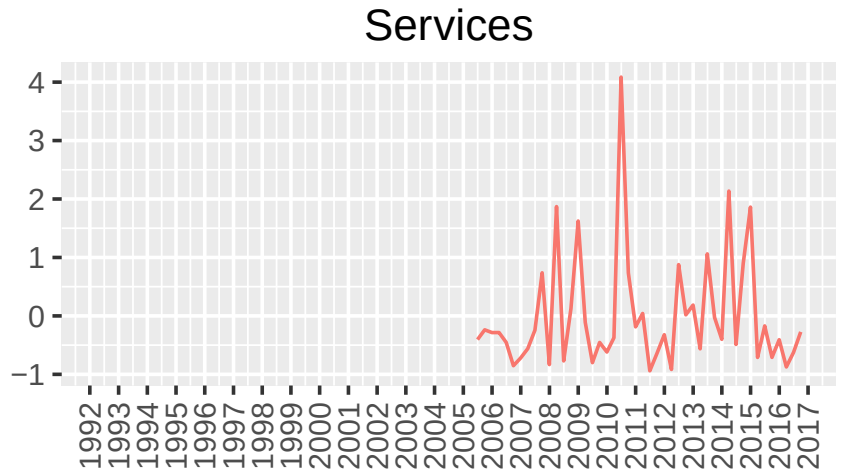
	Manufacturing			Construction		
	Current	Expected	BER_BCI	Current	Expected	BER_BCI
Expected	0.94***			0.89***		
BER_BCI	0.92***	0.84***		0.94***	0.75***	
RGDP_Growth	0.68***	0.68***	0.61***	0.74***	0.56***	0.76***

	Trade			Services		
	Current	Expected	BER_BCI	Current	Expected	BER_BCI
Expected	0.87***			0.76***		
BER_BCI	0.90***	0.72***				
RGDP_Growth	0.61***	0.59***	0.56***	0.76***	0.57***	

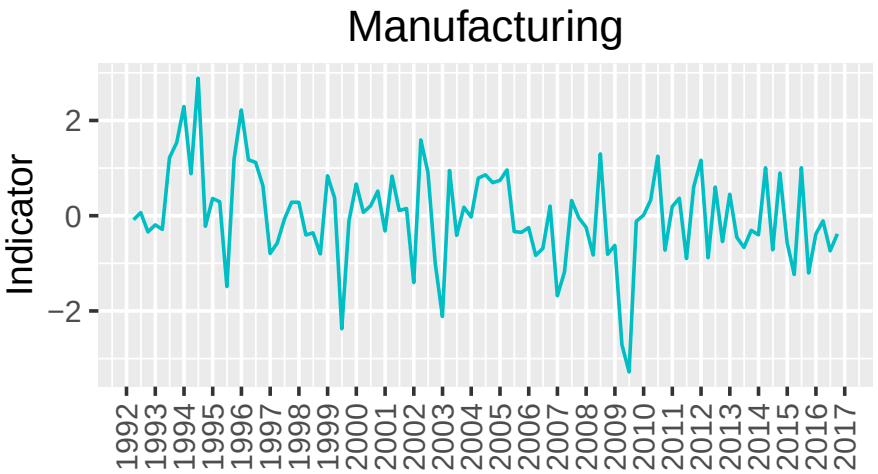
Sectoral Uncertainty: Aggregate Error

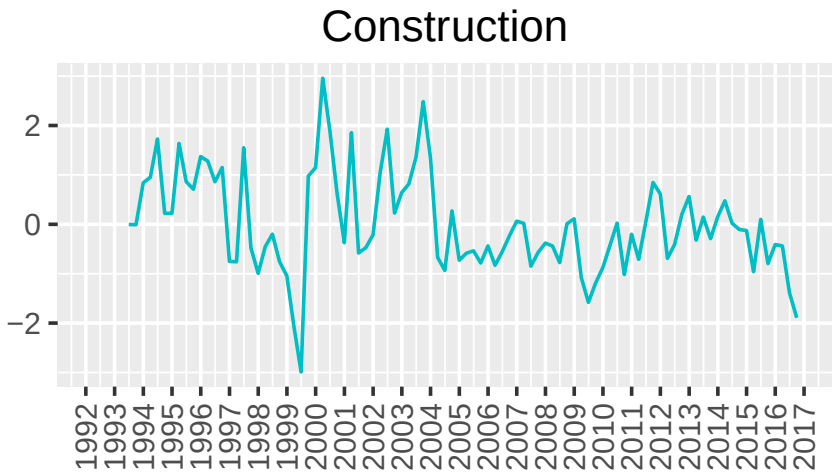


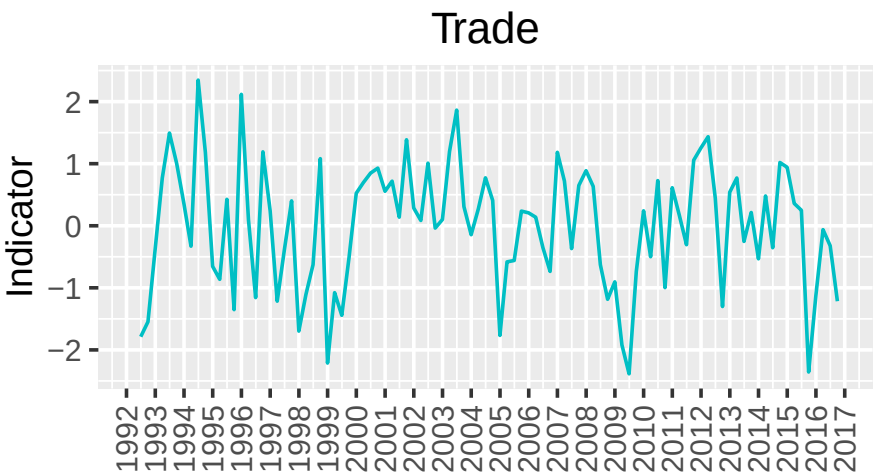


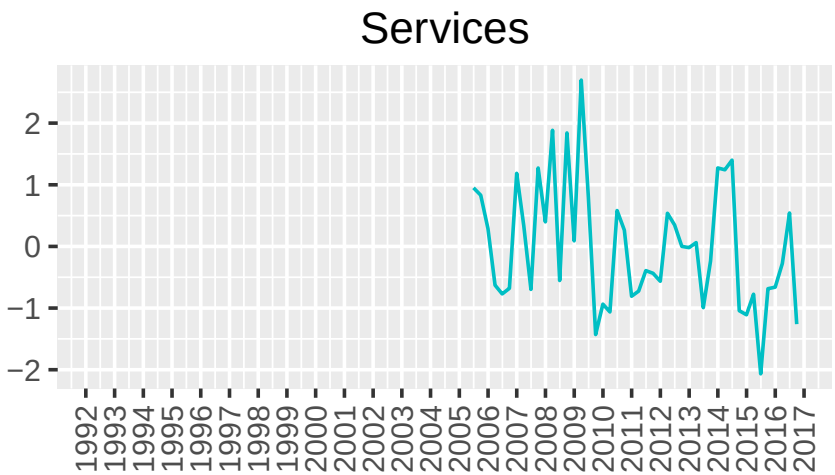


Sectoral Uncertainty: Idiosyncratic error









Sectoral correlations

Table 5: Correlations of uncertainty indicators and growth

			Manufacturing				Construction	
Idiosyncratic	Dispersion	Aggregate	Idiosyncratic	Uncertainty	Dispersion	Aggregate	Idiosyncratic	Uncertainty
Aggregate	0.17*				0.36***			
Dispersion	-0.06	-0.03			-0.09	0.15		
Uncertainty	0.74***	0.72***	-0.35***		0.82***	0.83***	0.12	
RGDP	-0.31***	-0.10	0.26**	-0.33***	-0.18*	-0.18*	-0.03	-0.22**

			Trade				Services	
Idiosyncratic	Dispersion	Aggregate	Idiosyncratic	Uncertainty	Dispersion	Aggregate	Idiosyncratic	Uncertainty
Aggregate	-0.03				-0.06			
Dispersion	-0.25**	0.16			-0.01	0.17		
Uncertainty	0.65***	-0.49***	-0.80***		-0.29*	0.79***	0.69***	
RGDP	-0.28***	-0.10	0.23**	-0.24**	-0.05	-0.18	0.18	-0.01

Granger causality: Confidence

Table 6: Granger causality tests: confidence

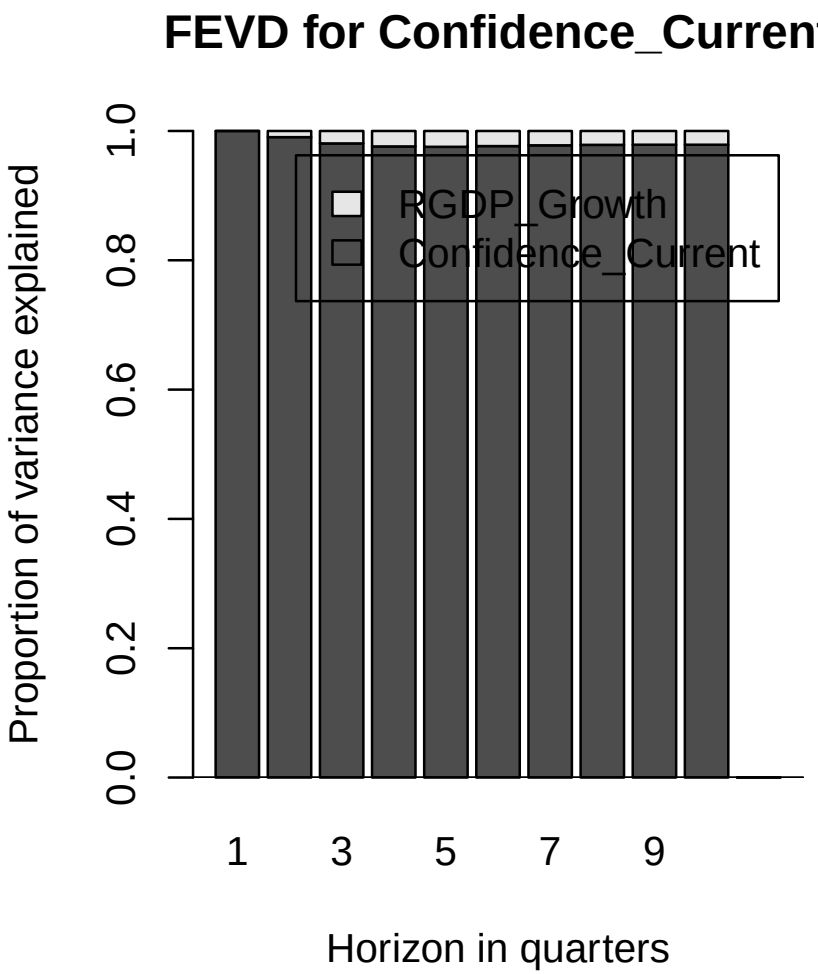
Granger causality H0:	statistic	p-value
Confidence_Current do not Granger-cause RGDP_Growth	2.697*	0.07
RGDP_Growth do not Granger-cause Confidence_Current	1.405	0.25
Confidence_Expected do not Granger-cause RGDP_Growth	3.437**	0.03
RGDP_Growth do not Granger-cause Confidence_Expected	0.58	0.56
BER_BCI do not Granger-cause RGDP_Growth	4.14**	0.02
RGDP_Growth do not Granger-cause BER_BCI	1.688	0.19
SACCI_Growth do not Granger-cause RGDP_Growth	3.229**	0.04
RGDP_Growth do not Granger-cause SACCI_Growth	0.031	0.97

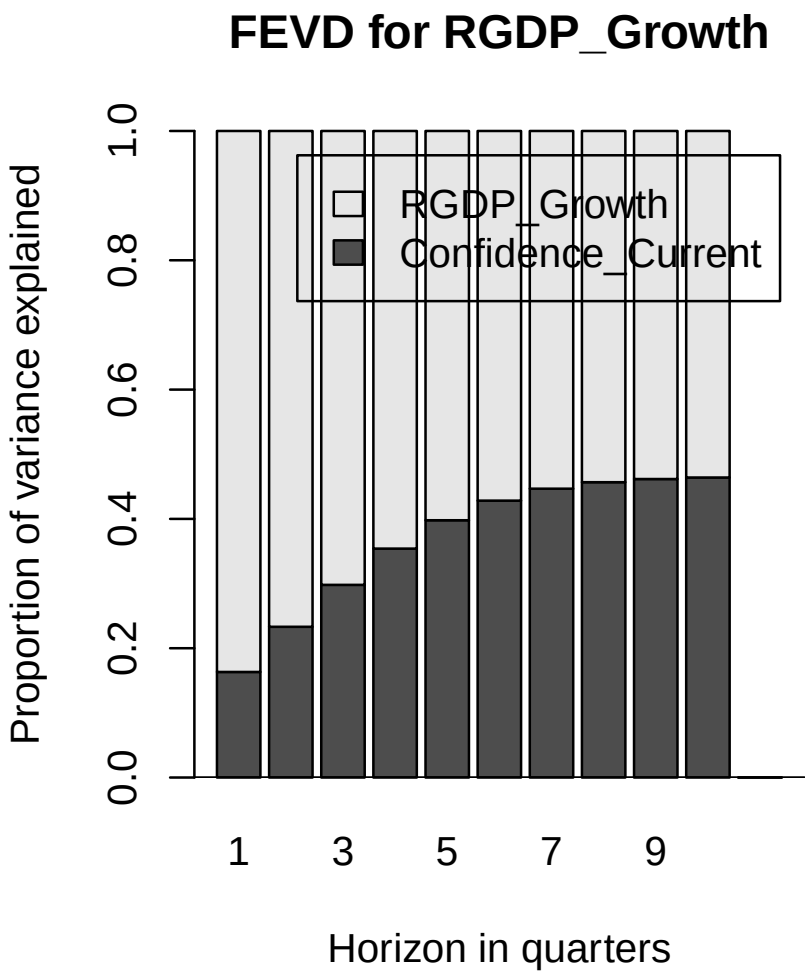
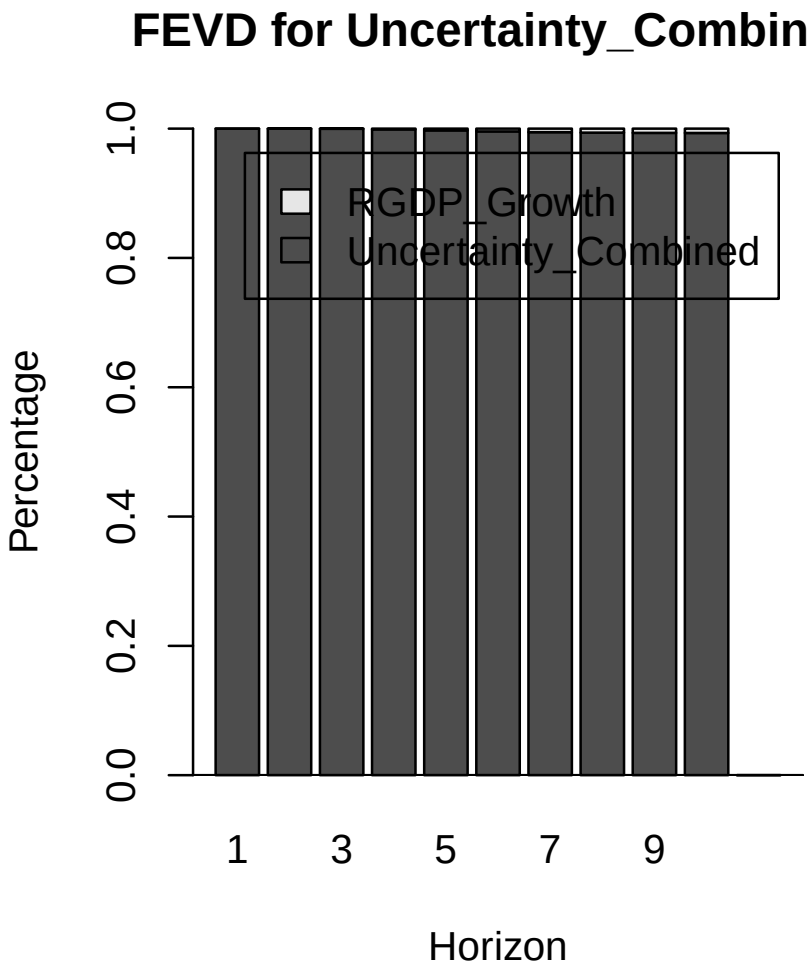
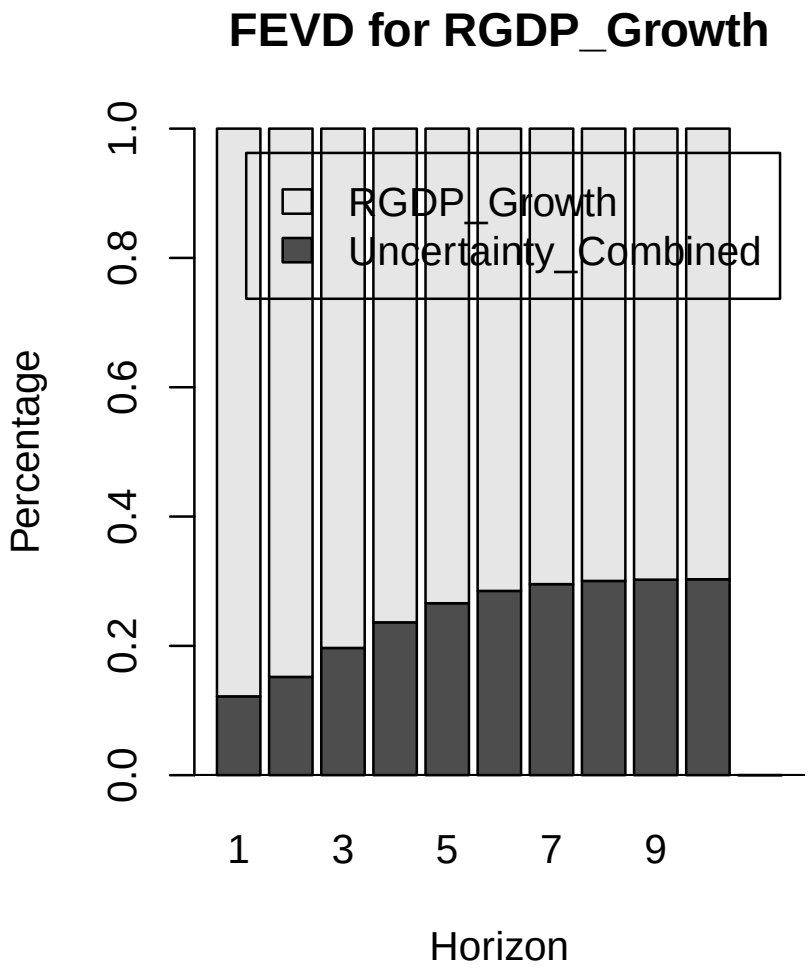
Granger Causality: Uncertainty

Table 7: Granger causality tests: uncertainty

Granger causality H0:	statistic	p-value
Dispersion do not Granger-cause RGDP_Growth	3.566**	0.03
RGDP_Growth do not Granger-cause Dispersion	1.251	0.29
Aggregate_error do not Granger-cause RGDP_Growth	0.25	0.78
RGDP_Growth do not Granger-cause Aggregate_error	0.514	0.60
Idiosyncratic_error do not Granger-cause RGDP_Growth	1.146	0.32
RGDP_Growth do not Granger-cause Idiosyncratic_error	1.12	0.33
EPU do not Granger-cause RGDP_Growth	0.932	0.43
RGDP_Growth do not Granger-cause EPU	1.929	0.13
SAVI do not Granger-cause RGDP_Growth	1.263	0.29
RGDP_Growth do not Granger-cause SAVI	1.014	0.36
Uncertainty_Combined do not Granger-cause RGDP_Growth	1.258	0.29
RGDP_Growth do not Granger-cause Uncertainty_Combined	0.21	0.81

FEVDs of confidence on current conditions and real GDP growth





FEVDs of uncertainty and real GDP growth