

The Effect of The Financial Crisis and Basel III on Risk Disclosure In Banks Financial Reports- A Textual Analysis

Abstract

During the last quarter of 2007, the financial crisis emerged in the US spreading to the rest of the world. In response, the Basel III Committee (an international broad for banking supervisory standards) published a series of recommendations on how to act to minimize the financial risks that may arise should a similar crisis occur in the future.

This work examines the trends that took place in the risk disclosure in financial statements of Israeli banks, following the financial crisis and the Basel III guidelines.

The results of the textual analysis, that we conduct, show that with the outbreak of the financial crisis, the focus of the annual reports shifted from **market risk** to **credit risk**.

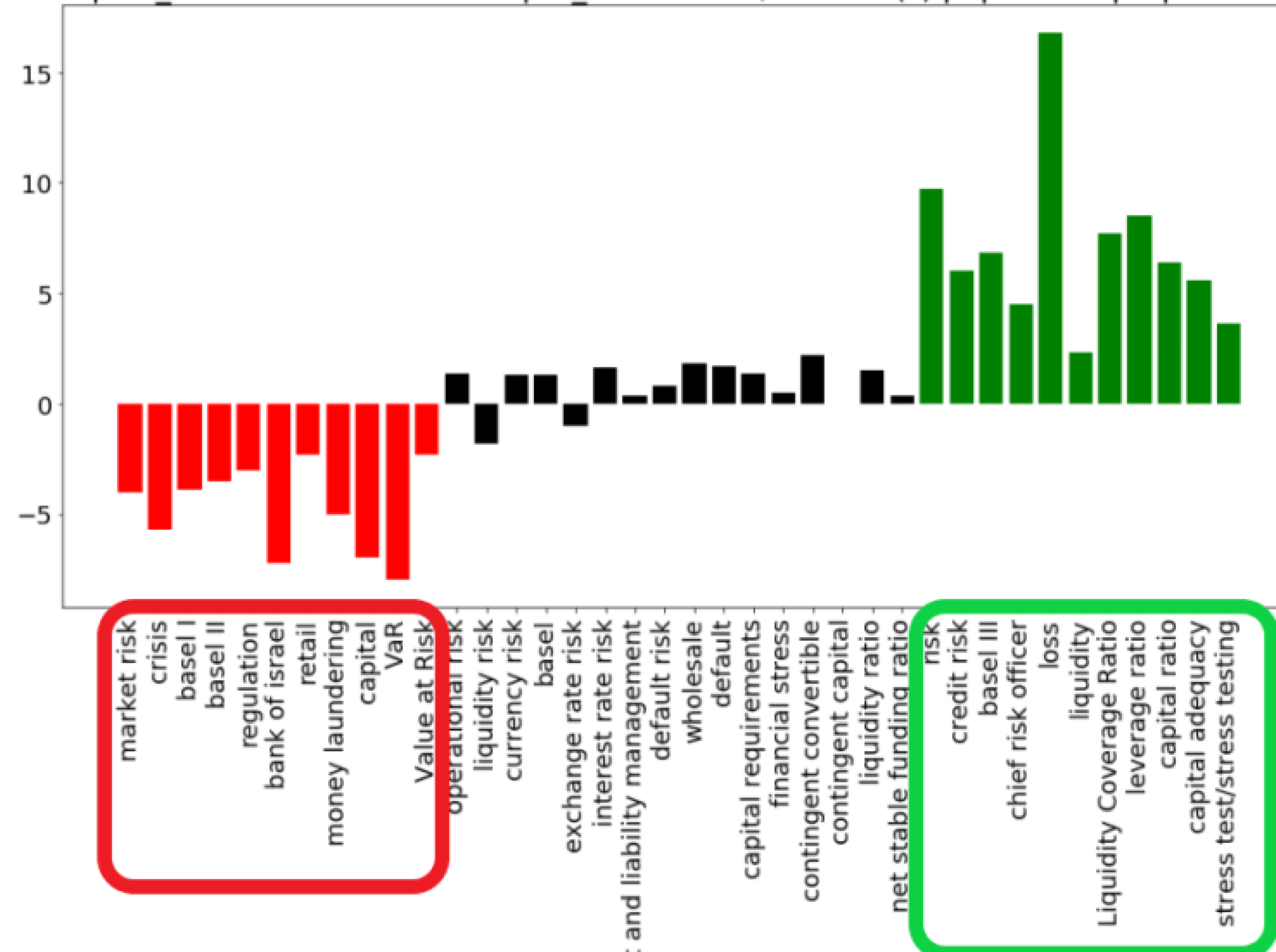
The introduction of Basel-III regulation further amplified this shift towards the fields of credit risk, stress testing and liquidity risk, while less attention was given to market risk.

Methods

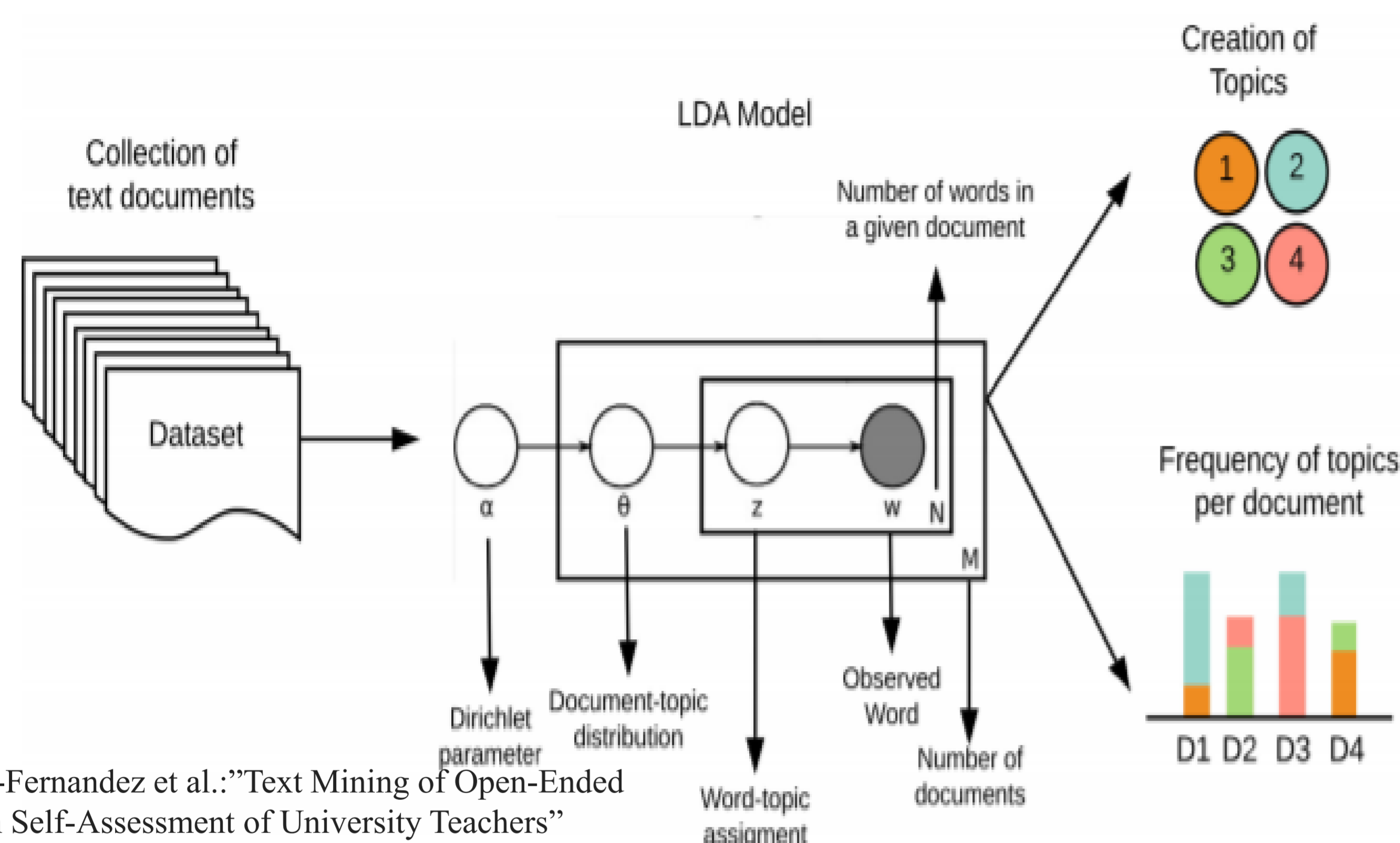
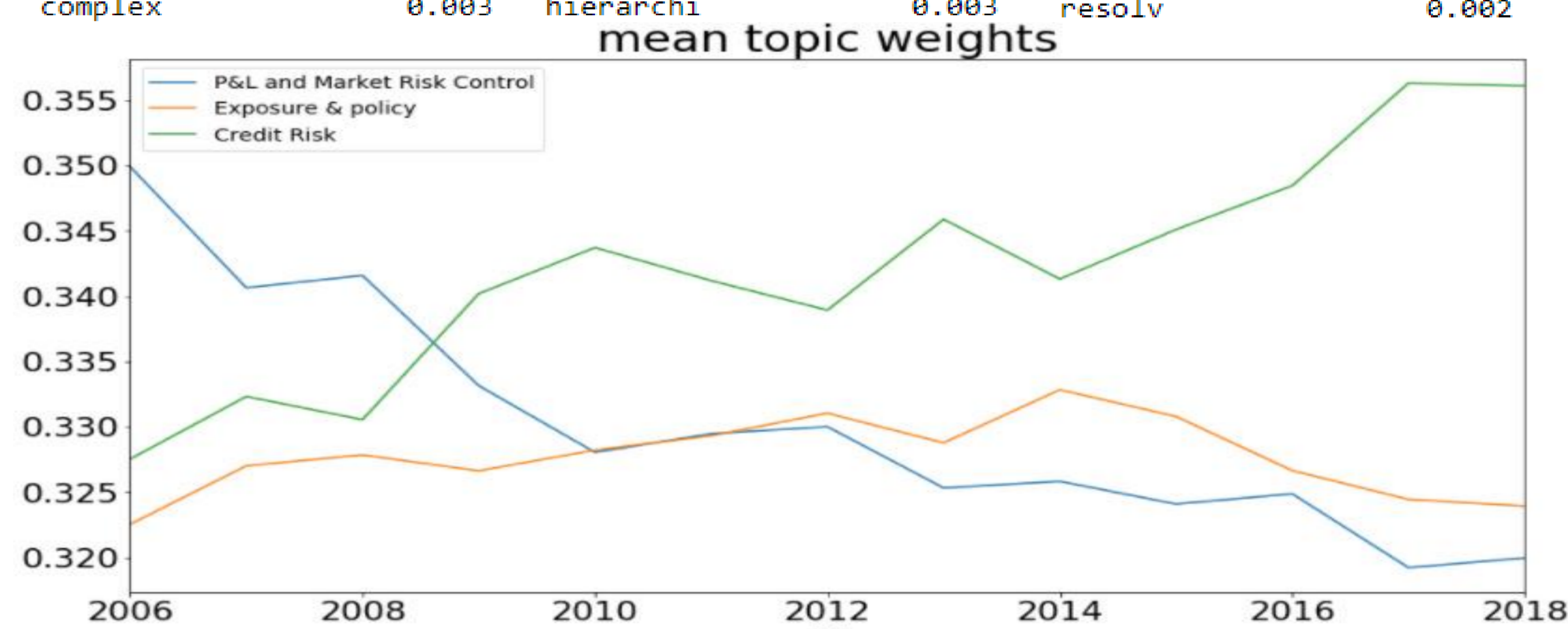
1. Term frequency analysis of the most common words
2. Pre-defined term frequency analysis
3. Two Proportion Z-Test on of pre-defined terms
4. Topic modeling analysis based on Latent Dirichlet Allocation (LDA) - LDA is a topic model algorithm intended to find the latent topics that exist in the corpus.
5. Optimization models for choosing the number of topics in the LDA model
6. Sentence resolution for documents
7. Analysing trends in market risk with Value at Risk and credit risk figures

Results

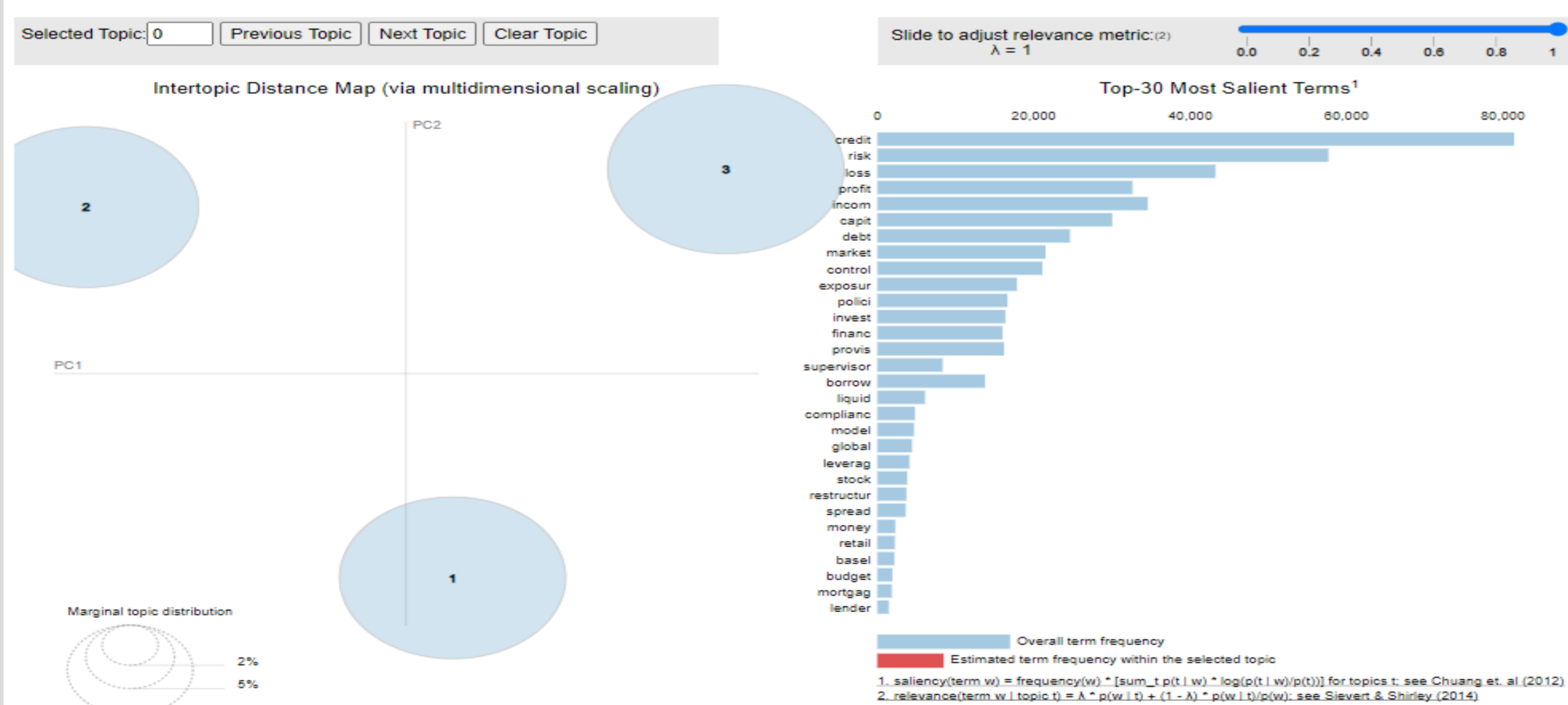
post_Basel III: 2014-2018 vs pre_crisis: 2007, z-score (z) population proportion



Topic 0	Topic 1	Topic 2			
loss	0.139	exposur	0.058	credit	0.241
profit	0.105	polic	0.054	risk	0.170
market	0.069	supervisor	0.027	incom	0.102
control	0.068	complianc	0.016	capit	0.089
invest	0.053	model	0.015	debt	0.073
financ	0.052	leverag	0.013	provis	0.048
borrow	0.033	stock	0.012	liquid	0.018
global	0.014	mortgag	0.006	restructur	0.011
money	0.007	lender	0.005	spread	0.011
retail	0.007	issuer	0.004	borrow	0.010
budget	0.006	stress	0.004	basel	0.006
revenu	0.005	forecast	0.004	recoveri	0.004
yield	0.005	cyber	0.004	debtor	0.003
launder	0.004	quantiti	0.004	debit	0.003
stakehold	0.003	redempt	0.004	merchant	0.002
reserv	0.003	check	0.004	proce	0.002
extrem	0.003	histor	0.004	cooper	0.002
buyback	0.003	volunt	0.004	region	0.002
suit	0.003	mechan	0.003	shekel	0.002
complex	0.003	hierarchi	0.003	resolv	0.002



D. Buenaño-Fernandez et al.: "Text Mining of Open-Ended Questions in Self-Assessment of University Teachers"



Conclusions

1. During the crisis and the following period, the focus shifted from "market risk" and "VaR" to "credit risk", "stress testing", "capital" and "liquidity risk"
2. Basel III and the financial crisis had a similar affect concerning the rise in "credit risk" and "stress testing"
3. In response to the crisis, the Israeli banking system increased its focus on credit risk prior to the new regulation (Basel III guidelines) as adopted a few years later by the central bank of Israel. However, it is not clear whether the trigger for this was due to non-formal interventions from the Central Bank of Israel or some other pressure for certain parties.

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