

NLP @ DNB

A couple of examples

DeNederlandscheBank

EUROSYSTEM

Objectives of NLP

- Increased automation of repetitive tasks
 - Covered bonds
- Allowing supervisors to access the information in more documents
 - TONE
- Gaining new indicators
 - [Nowcasting GDP using tone-adjusted time varying news topics: Evidence from the financial press \(dnb.nl\)](#) *Dorinth van Dijk and Jasper de Winter*

Approach




Supervisors are required to assess many PDF documents regarding covered bonds. They validate certain values inside tables for every newly released covered bond.

This process is a very repetitive and time-consuming task.

Covered bonds

Table 2.Types of Cost-Reimbursement Contracts

Type	Description	Answer the question.
Cost contracts	Contractor reimbursed for to a specified total cost; no profit	 PV tables only.pdf
Cost-sharing contracts	Contractor is reimbursed for costs; pays the other costs	PeroThree Co. manufactures automobile considering the introduction of a new product (a multinational automobile manufacturer automobile. If the contract is accepted, future. The contract to build and supply years, although it is highly possible for with GS Motors. The production director following projections for this proposal:
Cost-plus-fixed-fee contracts	Contractor is reimbursed for up to the specified total cost; negotiated fixed fee for its	
Cost-plus-a-percentage-of-cost contracts	Contractor is reimbursed for receives a certain percentage allowance for profit	

Source: Congressional Research Service, 1

(...continued)

OIG Report Notification: "Effect of Payments in DoD Contracts," Sept. 9, 2009, available at [http://DPAP.pdf](#) (reporting \$1.9 billion in price increases for Hornet aircraft, and AH-64D Apache Longbow).

⁴³ See, e.g., Formation of Government Contracts, ⁴⁴ 48 C.F.R. § 31.201-2 (allowable costs); 48 C.F.R. contract, making it impossible to discuss, in the ⁴⁵ See *supra* notes 5-6 and accompanying text.

⁴⁶ 48 C.F.R. § 16.301-3(b).

The production director has recommended after-tax profits over the four years is in the assistant to the management accounts out a full financial appraisal of the proposal to assist you in your appraisal:

- Cost of equipment, RM4,000,000
- Additional working capital, RM2 recovered in cash at the end of Year 4.
- The equipment will qualify for a 25% writing-down allowance on the reducing balance method;
- On ending the contract with GS Motors, any outstanding capital allowances can be claimed as a balancing allowance;
- At the end of Year 4 the equipment will be scrapped, with no expected residual value;
- The additional working capital needed does not qualify for capital allowances;
- [PeroThree](#) Co. pays corporation tax at the rate of 30% (assume that taxes are paid a year later);
- The company's cost of capital is 18%.

("Russell"), and University of North Alabama, with its principal office at 1500 Athletic Annex, Champions Way, Florence, AL (the "University").

WHEREAS, Russell is a major manufacturer and supplier of athletic apparel and uniforms to colleges and universities in the United States; and

WHEREAS, Russell and the University desire to enter into an agreement whereby Russell shall be the exclusive supplier of certain apparel, uniforms, balls and equipment for the University (the "Russell Product") in exchange for certain sponsorship rights from the University (the "Sponsorship Rights") all as more completely set forth herein.

NOW THEREFORE, in consideration of the covenants and obligations contained herein and other good and valuable consideration in hand paid, of which is hereby acknowledged, the parties for hereby agree as

1. **Term.** This Agreement shall commence upon the date of execution by Russell and shall continue for a term expiring on June 30, 2011. If the University terminate this Agreement upon thirty (30) days written notice, it shall be in breach any of its obligations hereunder and fail to cure such breach within the day period. In the event of such termination upon a breach by the University to any other remedies Russell may have at law or in equity, it shall be deemed that the University any monetary sponsorship in without limitation, the costs of all Russell Product provided, and termination and shall be relieved of any further obligations upon the date of such termination.

2. **Russell Supply Obligations.** In consideration of the covenants and obligations contained herein, Russell (or Russell's agent) shall be granted to Russell as provided herein, Russell (or Russell's agent) following to the University:

- a) the following product credits valued at retail prices time to time, on team apparel and product described on Exhibit
- 2012-2013 \$25,000
 - 2013-2014 \$50,000*
 - 2014-2015 \$50,000*
 - 2015-2016 \$55,000*
 - 2016-2017 \$60,000*

*Permitting NCAA Timeline schedule for current product credit of year one (2012) matched year.

b) through its dealer Russell shall sell all other Russell Product at 40% off the then current catalog list price for year

\$50,000*

Contract Date: _____		Project Manager: _____	
Contract #: _____		Contractor License #: _____	
[Name of Contractor] [Address of contractor] [Phone / fax / pager numbers]			
INTERIOR PAINTING CONTRACT (FOR RESIDENTIAL PREMISES)			
CUSTOMER:			
Name: _____			
Contact Person (if customer is a business): _____			
Billing Address: _____			
Business Phone: _____		Fax Number: _____	
Cell Phone: _____		Home Phone: _____	
Email: _____			
Project Address (if different from the above): _____			
Amount to be painted (back, approx. sq. footage of each): _____			
(If additional space is required, attach schedule or floor plan with areas marked.)			

In consideration of the payments to be made by the Customer to [NAME OF CONTRACTOR] (the "Contractor"), the parties hereby agree as follows:

1. CONTRACT DOCUMENTS

The Contract Documents, taken together, shall constitute the entire agreement between the parties pertaining to the subject matter hereof and supersede all other agreements, understandings, negotiations and discussions, whether oral or written, of the parties and there are no warranties, representations or agreements between the parties in connection with the subject matter of the Contract Documents except as specifically set forth herein. The Contract Documents consist of the following:

- this Contract and any drawings, specifications, schedules, addenda or exhibits attached to this Contract;
- additional documents signed by both parties during the course of this Contract. (Extras, amendments and deletions are effective ONLY if documented on a Change Order form or other amending agreement in writing and initialed or signed by both parties); and
-

Discrepancies or omissions in the Contract Documents, site conditions and any work required in violation of the Contract Documents are considered an extra to the Contract and are not included in the Contract Price. Any additional work required due to site conditions not disclosed to the Contractor, or which could not be reasonably anticipated, are not included in the Contract Price and shall be an extra to the Contract Price.

Approach



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Utilize the standardized format of the covered bond reports, with rule-based information extraction.

Detect tables in PDF reports with Open-Source Python package: Tabula.

Extract and assess valuable information based on a set of criteria of the supervisors.

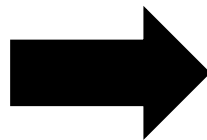
Results Covered bonds

ACT Cover Ratio:

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criteria: 100
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```

Available nominal OC:

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criteria_rule: '>='
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Investor Report: 1 February 2022 - 28 February 2022



Asset Cover Test

Asset Cover Test

A	10,516,168,938.54
B	0.00
C	0.00
D	0.00
E	0.00
V	0.00
W	0.00
X	0.00
Y	0.00
Z	0.00
A+B+C+D+E+V+W+X+Y+Z	10,516,168,938.54
Outstanding bonds	8,925,000,000.00
Pass/Fail	Pass
ACT Cover Ratio	117.83 %
Parameters	
Asset percentage	97.56 %
Cap LTV Cut-Off indexed valuation % non-NHG	80.00 %
Cap LTV Cut-Off indexed valuation % NHG	80.00 %
% of Index Increases	90.00 %
% of Index Decreases	100.00 %
Reserve Fund	0.00
Supplemental Liquidity Reserve Amount	0.00
Deduction Set-Off	10,657,636.19
Ratings	
S&P	AAA
Moody's	
Fitch	AAA
Other	
UCITS compliant	True
CRR compliant	True
ECBC Label compliant	True
Overcollateralisation	
Legally required minimum OC	5.00 %
Documented minimum OC	2.50 %
Available Nominal OC	21.20 %

TONE

Serbia – IFC Investment in Belgrade WtE and MIGA Guarantees to Suez Groupe S.A.S., I-Environment Investment Limited, and Marguerite Waste Serbia S.à.r.l. for their investments in Beo Čista Energija d.d.o. Beograd

2. The Boards of Directors of IFC and MIGA considered the President's Memoranda and Reports on investments and guarantees supporting Belgrade WtE in Serbia (IFC/R2019-0276[MIGA/R2019-0112], dated September 6, 2019). The IFC investment comprises: (i) an "A" loan of up to EUR 77.5 million (approximately US\$87 million equivalent); (ii) a "B1" loan of up to EUR 70 million (approximately US\$78 million equivalent); (iii) a concessional senior loan of up to EUR equivalent of US\$22.3 million (up to EUR 20 million) from IFC acting as implementing entity of the Canada-IFC Blended Climate Finance Program; and (iv) one or more EUR floating to fixed interest rate swaps and a USD floating to EUR fixed interest rate swap to hedge the Project's interest rate risk, with a total expected loan equivalent exposure of up to US\$10 million. The Board of Directors of IFC adopted Resolution No. IFC2019-0033.

The Board of Directors of MIGA concurred with the issuance of guarantees, as set out in the President's Memorandum, to Suez Groupe S.A.S., I-Environment Investments Limited, and Marguerite Waste Serbia S.à.r.l. The Board also approved guarantees to cover their equity and shareholder loan investments in Beo Čista Energija d.d.o. Beograd in the Republic of Serbia. MIGA gross and net exposure is up to EUR 115.5 million (approximately US\$127.9 million equivalent) for equity, quasi-equity and/or shareholder loans in the Special Purpose Vehicle owned by the Guarantee Holders. The percentage of guarantee will be 90 percent.

Adjournment

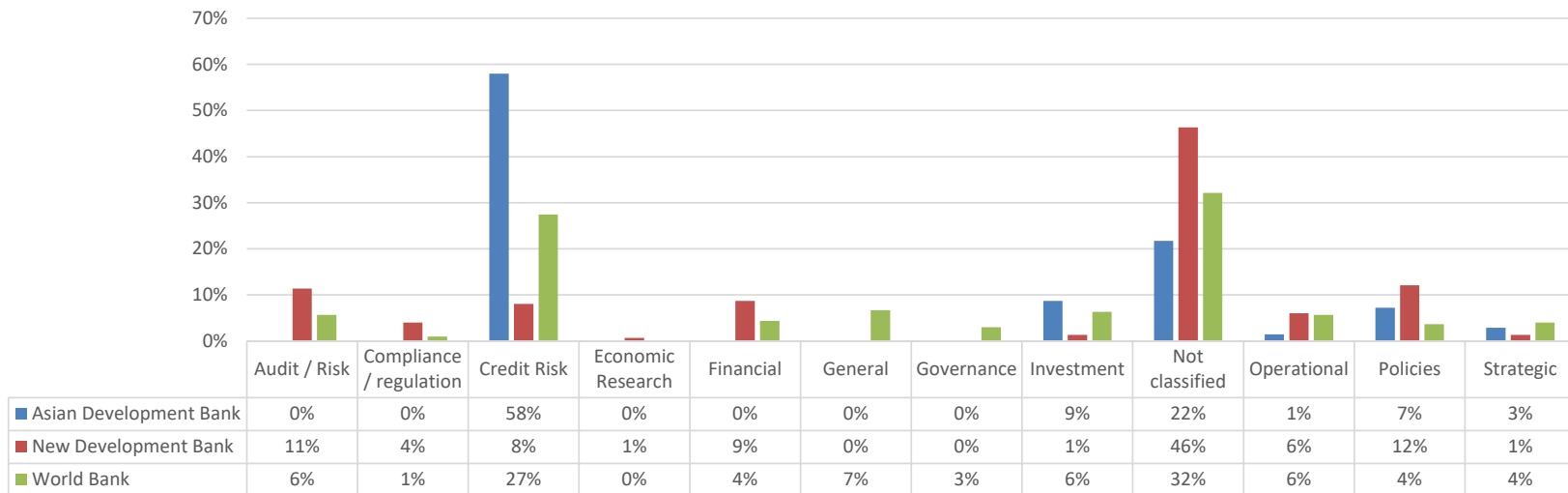
3. The meeting adjourned at 1:02 p.m.

TONE

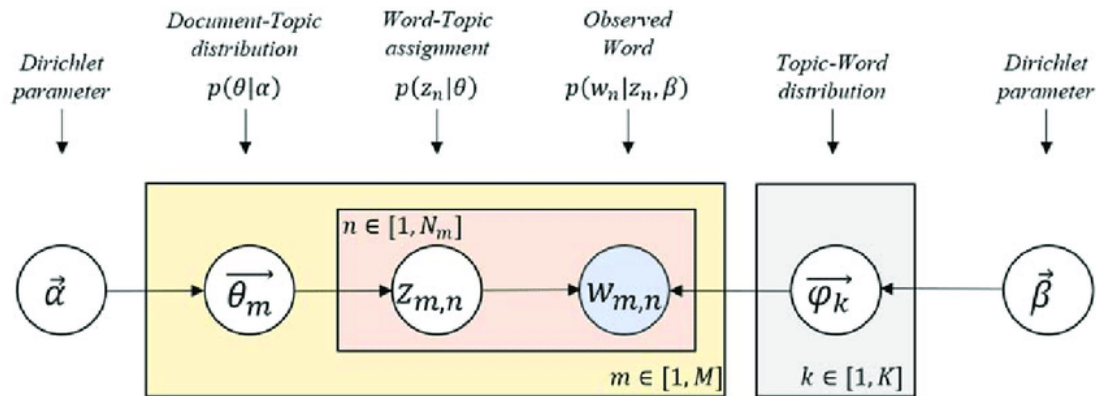
1	Bank	Committee	Date	Item	Classification	Decision Making Process phase	remark
407	New Development E	BoD	2-12-2019	8. Project Status a. Project Status Presentations The Board took note of the following project proposal status update: Loan of USD 500 million (in Euro) to the Russian Federation for Development of Educational Infrastructure for Highly Skilled Workforce (2019-BD16-DOC-015-a); Loan of USD 300 million to Eskom SOC Ltd. for Battery Energy Storage Project Guaranteed by the Republic of South Africa (2019-BD16-DOC-015-b); Locomotive Fleet Renewal Program (2019-BD16-DOC-015-c); Investment of USD 100 million in National Investment and Infrastructure Fund (2019-BD16-DOC-015-d); and Investment of USD 100 million in Patria Infrastructure Fund (2019-BD16-DOC-015-e). b. Update on Project Pipeline The Board considered the Project Pipeline as of November 15, 2019 (2019-BD22-DOC-016) and took note thereof.	Credit Risk	Information	
408	New Development E	BoD	2-12-2019	9. Quarterly Project Implementation and Disbursement Report The Board considered the Quarterly Project Implementation and Disbursement Report (2019-BD22-DOC-018) and took note thereof.	Operational	Information	
409	New Development E	BoD	2-12-2019	10. Report on Project Procurement in Non-Member Countries Page 6 of 8 The Board considered the Report on Projects regarding Procurement in Non-Member Countries (2019-BD22-DOC-019) and took note thereof.	Operational	Information	
410	New Development E	BoD	2-12-2019	11. Note on Equity Investments The Board considered the Note on Equity Investments (2019-BD22-DOC-020) and took note thereof.	Investment	Information	
411	New Development E	BoD	2-12-2019	12. Sovereign Loan Pricing Framework in Euros The Board considered and approved the Sovereign Loan Pricing Framework in Euros (2019-BD22-DOC-021).	Policies	Decision	
	New Development E	BoD	2-12-2019	13. Financing Sub-National Governments on a Non-Sovereign Basis The Board considered the Note on Financing Sub-National Governments Report on Projects regarding Procurement in Non-Member Countries (2019-BD22-DOC-022) and requested more analysis on providing loans to sub-national governments without sovereign guarantee.	Credit Risk	Follow Up defined	

TONE

Minute items per subject (%)



Latent Dirichlet Allocation

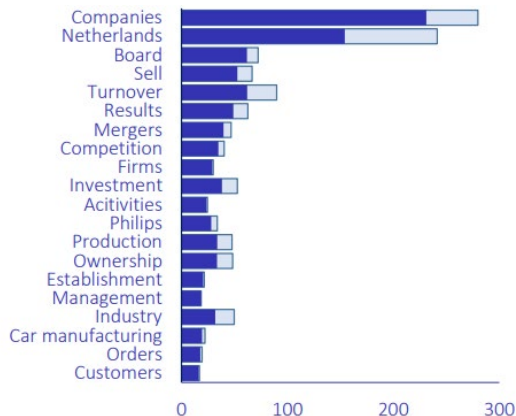


Topic modelling

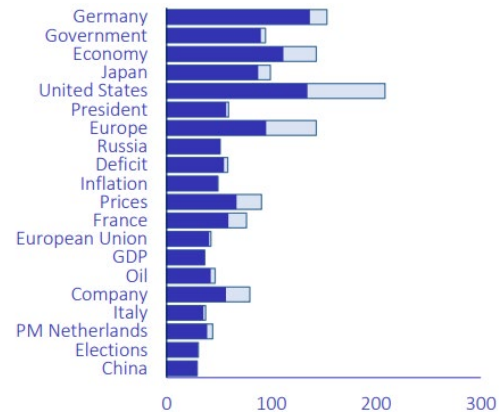
Financial markets



Companies



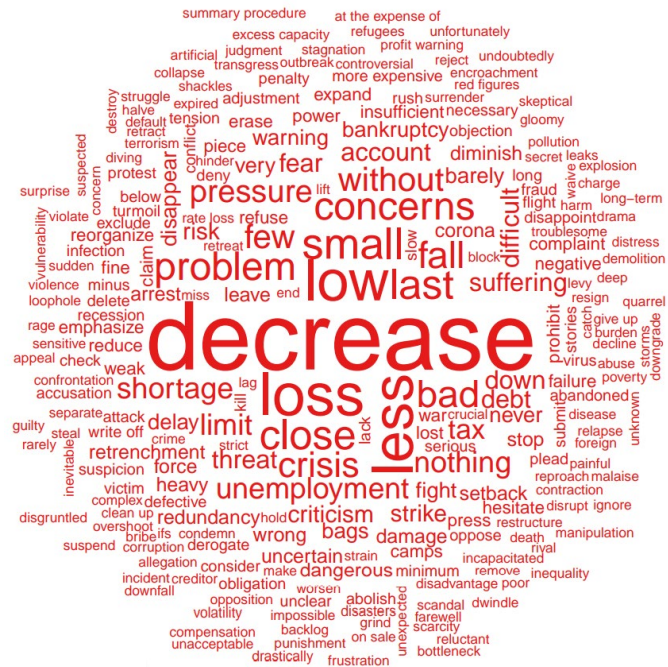
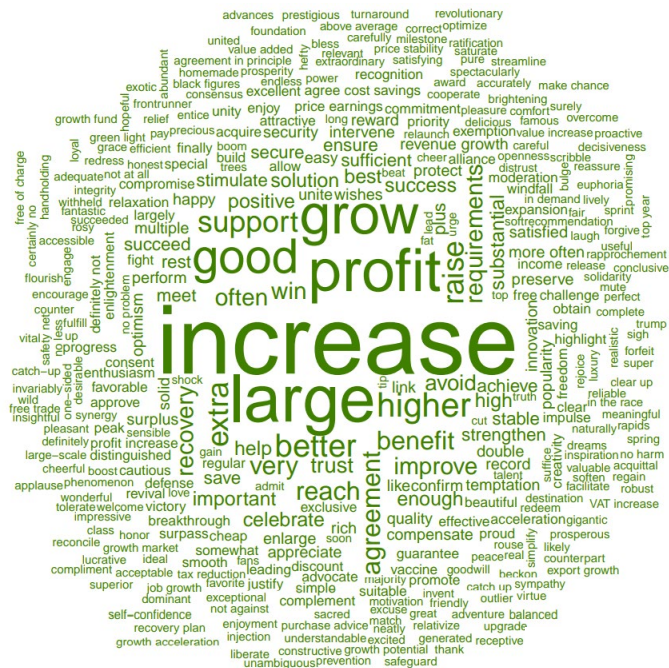
Economy



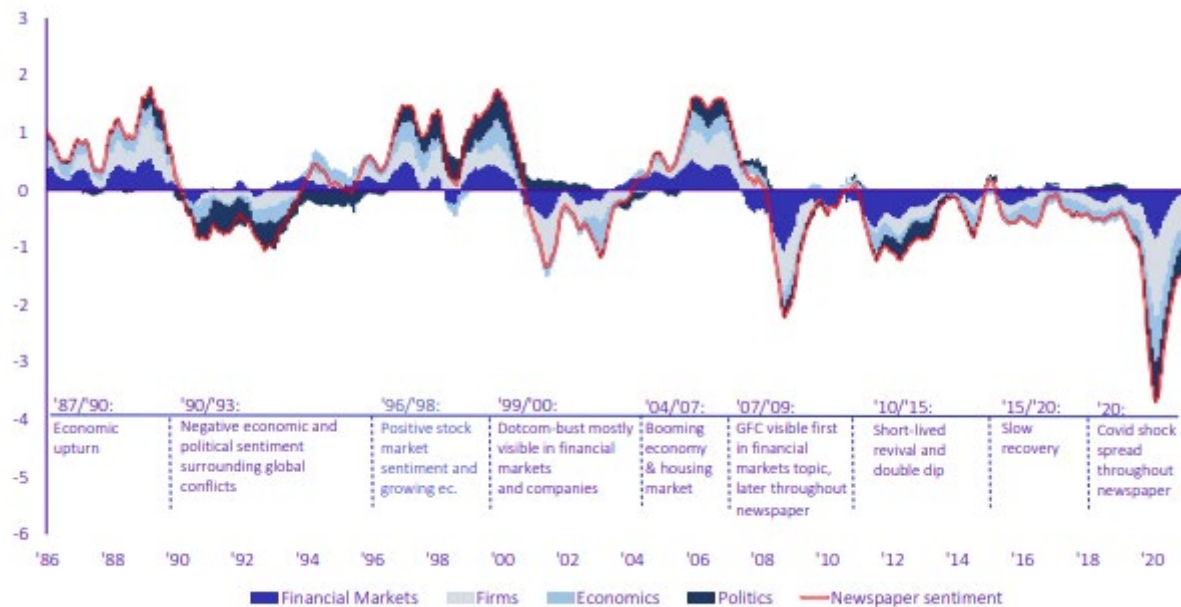
overall term frequency (x 1,000)

estimated within topic word frequency (x 1,000)

Economic new sentiment



Economic new sentiment



Economic new sentiment

