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CoFiF: A Corpus of Financial Reports in French Language

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Overview

1. Introduction
2. Corpus and its importance
3. Objective
4. Our corpus: CoFiF (creation, analysis and experiments)
5. Conclusion

Corpus and its importance

“A corpus is a collection of natural language (text, and/or transcriptions of speech or signs) constructed with a specific purpose.”*

- Large corpora play a progressively important role in driving NLP research
- More and more used to feed notorious neural network m
- Many corpora are available for different fields in various l

What about financial domain in French?

* O'Keeffe, Anne, and Michael McCarthy, eds. *The Routledge handbook of corpus linguistics*. Routledge, 2010.

Objective

- Many resources available for English, such as: the Wall Street Journal(WSJ) Corpus [Paul and Baker, 1992]
  - the 10-k Corpus [Ko-ganet al., 2009]
  - the 8-k Corpus [Leeet al., 2014]
- No corpus to date deals with French texts in the field of economics and finance

Our goal → to create a French corpus in the domain of business and economics

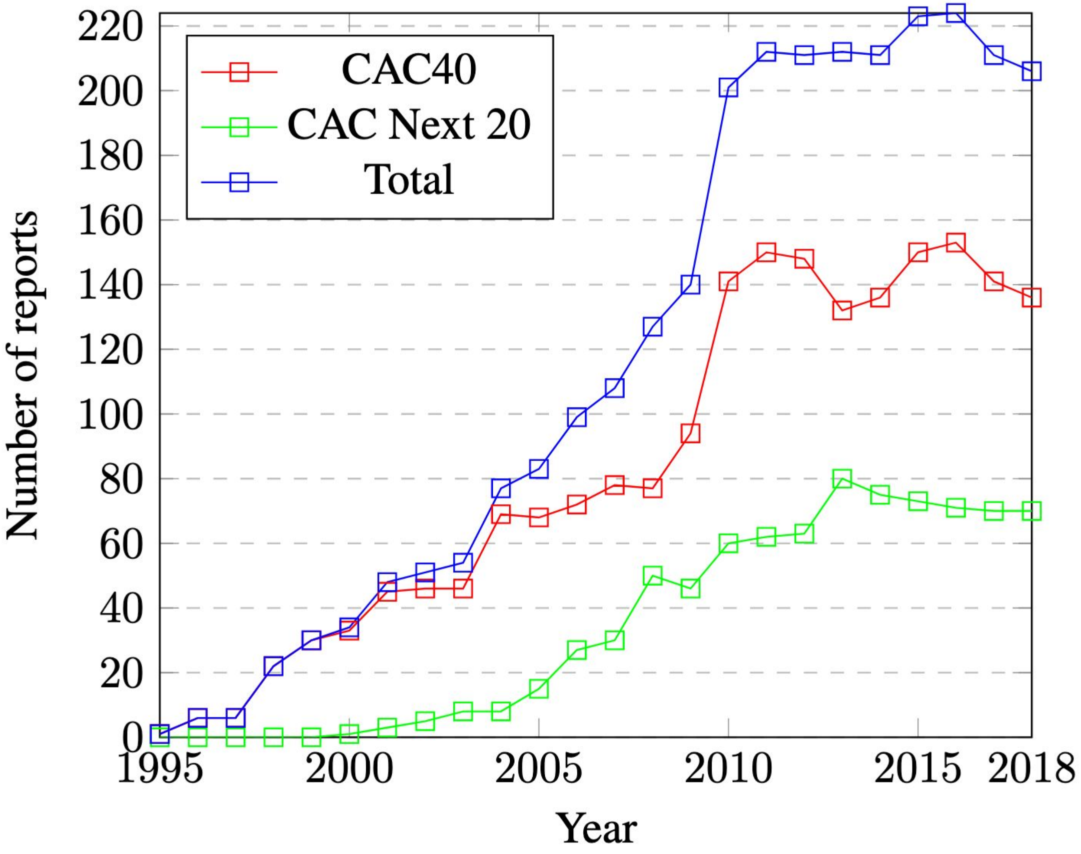
Our corpus: CoFiF

- The first corpus comprising company reports in the French language
- It contains over 188 million tokens in 2655 reports
- The corpus spans over 20 years, ranging from 1995 to 2018

Corpus creation

1. Selection of enterprises according to:
   - **Cotation Assistée en Continu (CAC) 40**: France's main stock index containing 40 of the 100 largest companies by market capitalization of the stock exchange
   - **CAC Next 20**: the 20 largest ones which are listed following the ones in the CAC40
2. Collecting 4 types of documents by consulting company's website:
   - reference documents (*documents de références*)
   - annual results (*résultats annuels*)
   - semestrial results (*résultats semestriels*)
   - trimestrial results (*résultats trimestriels*)

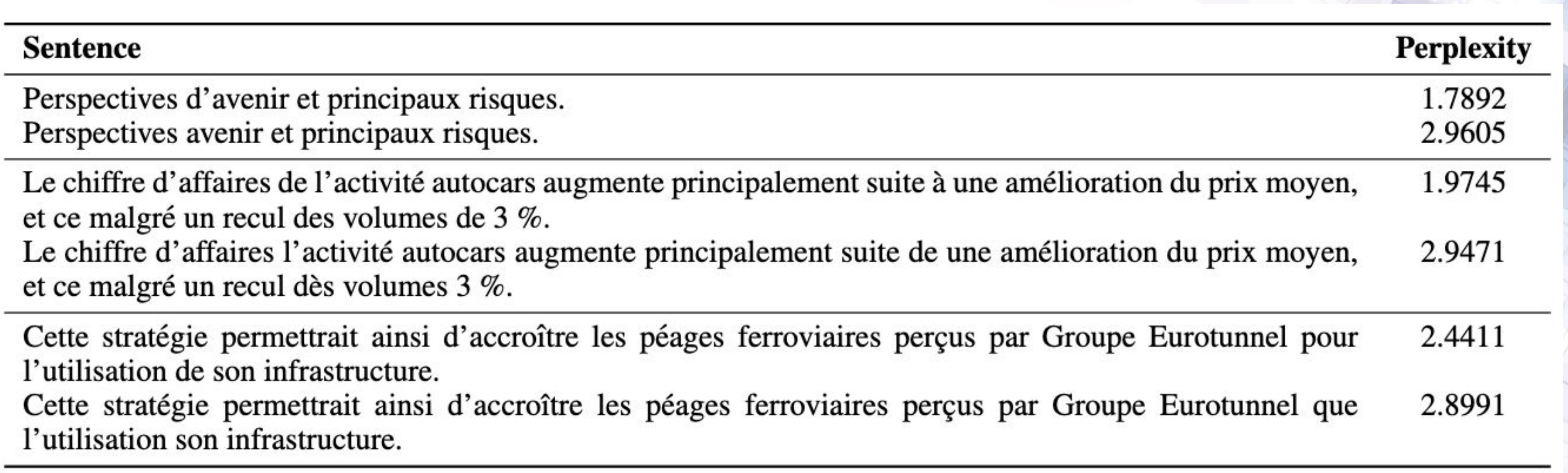
Corpus analysis: reports distribution per year



Experiments: language models

Evaluation of the corpus using two character-level language models:

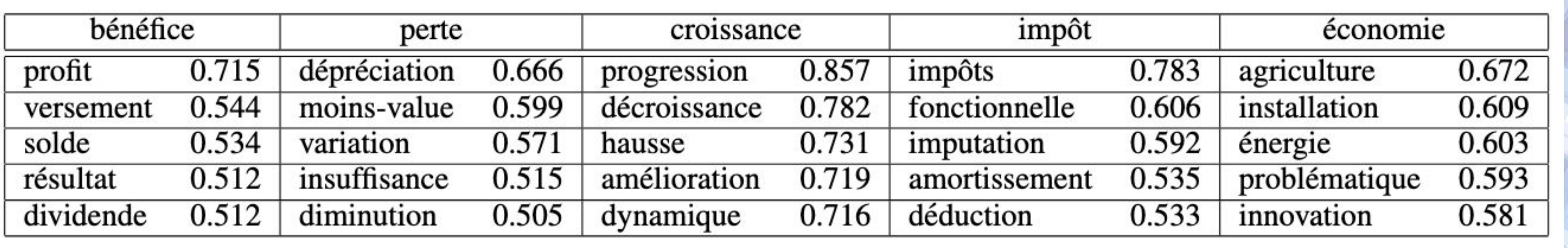
- a forward recurrent neural network (RNN)
- a backward one



Sentence	Perplexity
Perspectives d'avenir et principaux risques.	1.7892
Perspectives avenir et principaux risques.	2.9605
Le chiffre d'affaires de l'activité autocars augmente principalement suite à une amélioration du prix moyen, et ce malgré un recul des volumes de 3 %.	1.9745
Le chiffre d'affaires l'activité autocars augmente principalement suite de une amélioration du prix moyen, et ce malgré un recul dès volumes 3 %.	2.9471
Cette stratégie permettrait ainsi d'accroître les péages ferroviaires perçus par Groupe Eurotunnel pour l'utilisation de son infrastructure.	2.4411
Cette stratégie permettrait ainsi d'accroître les péages ferroviaires perçus par Groupe Eurotunnel que l'utilisation son infrastructure.	2.8991

Experiments: word embeddings

We trained a Word2Vec model* on the cleaned textual data of CoFiF and evaluated the quality of the retrieved word embeddings.



bénéfice		perte		croissance		impôt		économie	
profit	0.715	dépréciation	0.666	progression	0.857	impôts	0.783	agriculture	0.672
versement	0.544	moins-value	0.599	décroissance	0.782	fonctionnelle	0.606	installation	0.609
solde	0.534	variation	0.571	hausse	0.731	imputation	0.592	énergie	0.603
résultat	0.512	insuffisance	0.515	amélioration	0.719	amortissement	0.535	problématique	0.593
dividende	0.512	diminution	0.505	dynamique	0.716	déduction	0.533	innovation	0.581

* Mikolov, Tomas, et al. "word2vec." *URL https://code. google. com/p/word2vec* (2013).

Getting CoFiF

CoFiF is openly available for non-commercial use under the Attribution-NonCommercial-ShareAlike 4.0 International license. More information at **https://cofif.github.io**.

Conclusion

- CoFiF is the first French large corpus in financial docmain
- Enables progress in applying NLP approaches on the textual data related to the financial sector in francophone countries, particularly France, Canada, Belgium and Switzerland.
- It provides a comprehensive and factual overview of a company's shape and their language can also be consulted in linguistic terms