Mapping Regulatory Network of WTO Dispute Settlement Body Using Deep Learning

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October 26, 2020

Abstract

1 Introduction

The Dispute Settlement Body (DSB) of the World Trade Organization deals with trade disputes between WTO members. WTO members can file a lawsuit in the DSB to blame possible illegal action of the other member's trade policy. Then a judicial body, called "Panel", adjudicates the dispute between members and submits a report in which it expresses its conclusion as to whether the challenged trade policy is inconsistent to the rules of the WTO or not.

Inter-country interactions in global trade are legally regulated by the World Trade Organization (WTO). The members of the WTO agreed on the set of rules with the WTO agreement and sue other country's potential violation of the rules to the Dispute Settlement Body (DSB) of the WTO. When a country is suing other country to the DSB, they usually cites more than one rules of the WTO because a country's trade policy at issue is usually very complex thus requires many rules being combined to legallly blame the one successfully. For example, In the Case A, Country X cited Articles to blame Country Y's TRADEACTION B.

Then why do political sceintist want to understand this complex pattern of citation? This is because of the two reasons,

- Finding the collective understanding over the WTO's system

- Second, upon/toward this understanding, countries design the new strategy to lead more favored result using the WTO.

However, the methods how to deal with this complexity, has been relatively less visited by the scholars. To address this issue, I designed a new method that maps the countries' citation

network over the WTO adjudication system. This method finds three distinctive clusters where each represents

- market access
- non-traiff barriers
- regional trade agreement .

This method populates a network that can showing how countries are citing which articles together in which weight to legally regulate the trade disputes inside the WTO. I explitly used the content of the dispute and the articles of the WTO agreement using deep neural network and machine learning algorithms.

Moreover, to populate this network, I used 80 GATT 1994 Articles or Paragraph in the Article with 143 Trade Disputes from 1995 to 2018 where the Panel reports exists.

Through this paper I found how wto works. Moreover, this complexity efficietnly caputred by this mthod could address the legal capcity problem in the WTO.

2 Data

Privide a running example that explains how to works. (Borrow from previous paper)

3 Methodology

Example that simple approach can't aproach. (Limitation of co-occurrences)

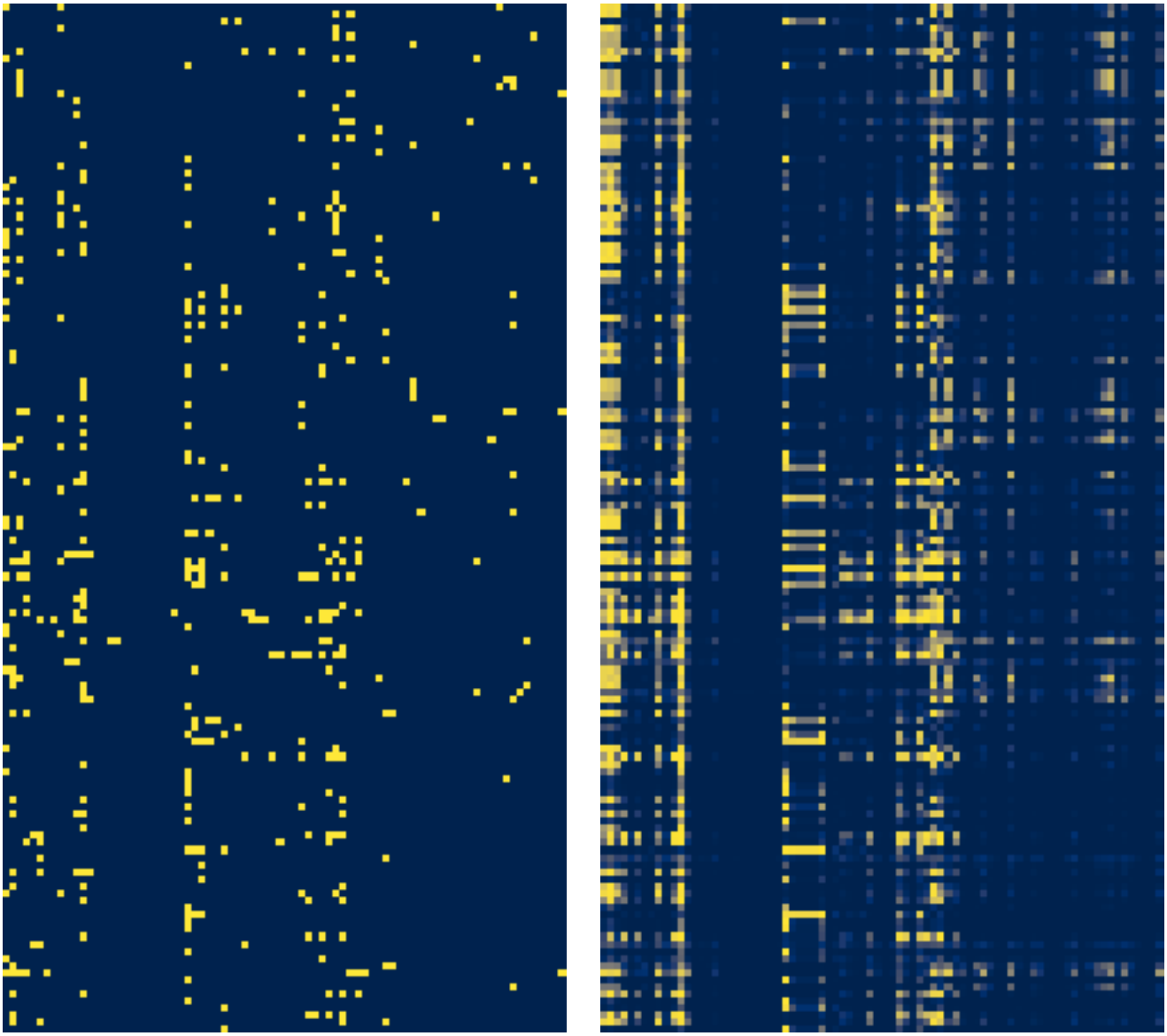
4 Empirical Findings

No Greeks. English. Three Networks.

5 Conclusion

I show how WTO works.

6 Appendix



(a) Co-citation Matrix (b) Prediction Matrix

Figure 1: **Spare & Dense Representation**

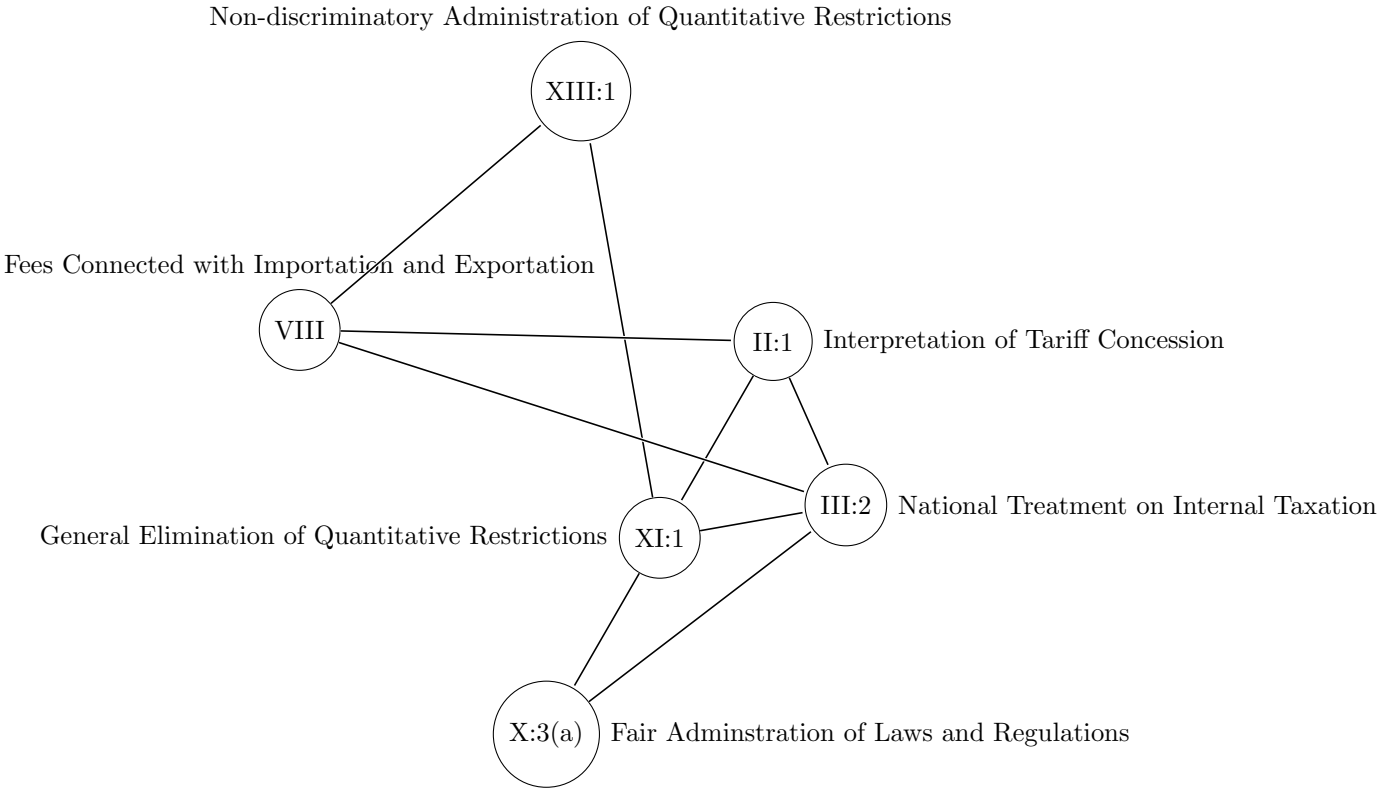


Figure 2: Market Access