Trade Agreements and Supply Chains

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59 RSA
Bologna, October 25-27, 2018

The emergence of GVCs

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    - iPhone's software and product design are done by Apple, most parts are produced by independent suppliers around the world (Xing, 2011)
- Intermediates account for 2/3 of total trade (Johnson and Noguera, 2012)
- Regional nature of GVCs: trade in intermediates is concentrated within 'Factory Europe", "Factory North America", "Factory Asia" (Baldwin, 2013)
- 80% of GVC-related flows are linked to multinationals (UNCTAD, 2013)

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- **FTAs** can **distort sourcing decisions** through two channels:
  - **Lower tariffs** when importing from FTA partners
  - **Rules of Origin** (RoO)

Some Information about RoO

- RoO define the **conditions that products must satisfy to obtain preferential tariff treatment**, to avoid that products from non-FTA members are transhipped from low-tariff to high-tariff FTA partners

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- There are two main types of rules:

  1. Value-added requirements

     At least $X\%$ of the the value of the final good must be "domestic" VA

  2. Change of tariff classification

     Some inputs cannot be sourced (at all) from outside the FTA

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- In a large survey by the ITC (2015), RoO emerge as the **most problematic non-tariff measure** faced by manufacturing firms

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  - Identifying the **causal effect** of RoO
    - We focus on the effects of NAFTA RoO on Mexican imports from third countries (NAFTA RoO were to a large extent inherited from CUSFTA)
    - We employ a triple-difference approach, exploiting cross-product and cross-country variation in RoO treatment over time
    - In a robustness check, we use CUSFTA RoO as an instrument

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- On average, **Mexican imports of treated goods** from third countries relative to NAFTA partners **would have been 45% higher** with no RoO
- Our results challenge those by Caliendo and Parro (2015): abstracting from RoO, they find that "the rest of the world was hardly affected by NAFTA"

Implications for Brexit

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- Possible trade relations between UK and EU:
  - No deal
  - Free Trade Area
  - Customs Union

No Deal

- If the UK leaves the EU without negotiating a new trade deal, the UK and the EU would grant each other the same treatment they offer to other WTO members

- This would be the **worst option** for the UK, in terms of the consequences for trade, FDI, jobs, and consumers:

  - UK-based producers would face **tariffs when exporting to the EU** (e.g. 10% tariff on cars, 36.1% tariff on dairy) ▸ details

  - Unless the UK reduces its own tariffs, **imports** of final goods and intermediates **from the EU will become more expensive**

  - **Relocation of multinationals**, e.g. Airbus (14,000 employees at 25 sites in the UK) announced that it would "interrupt UK production"

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- **Large producers** located in the UK may have to adjust their **global supply chains** if they want to continue exporting duty free to the EU
    - Example from the car industry:

      Over 70% of the cars Honda sells in Europe are produced in Swindon, with various inputs (e.g. computer chips, brakes) coming from Japan

      Honda may have to stop importing key inputs from Japan to qualify for origin and avoid tariffs when exporting to the EU
- According to the Japanese government, 879 Japanese companies (including Hitachi, Honda, Nissan and Toyota), employing 142,000 staff in the UK may **relocate to continental Europe** if the UK exits the customs union

Customs Union

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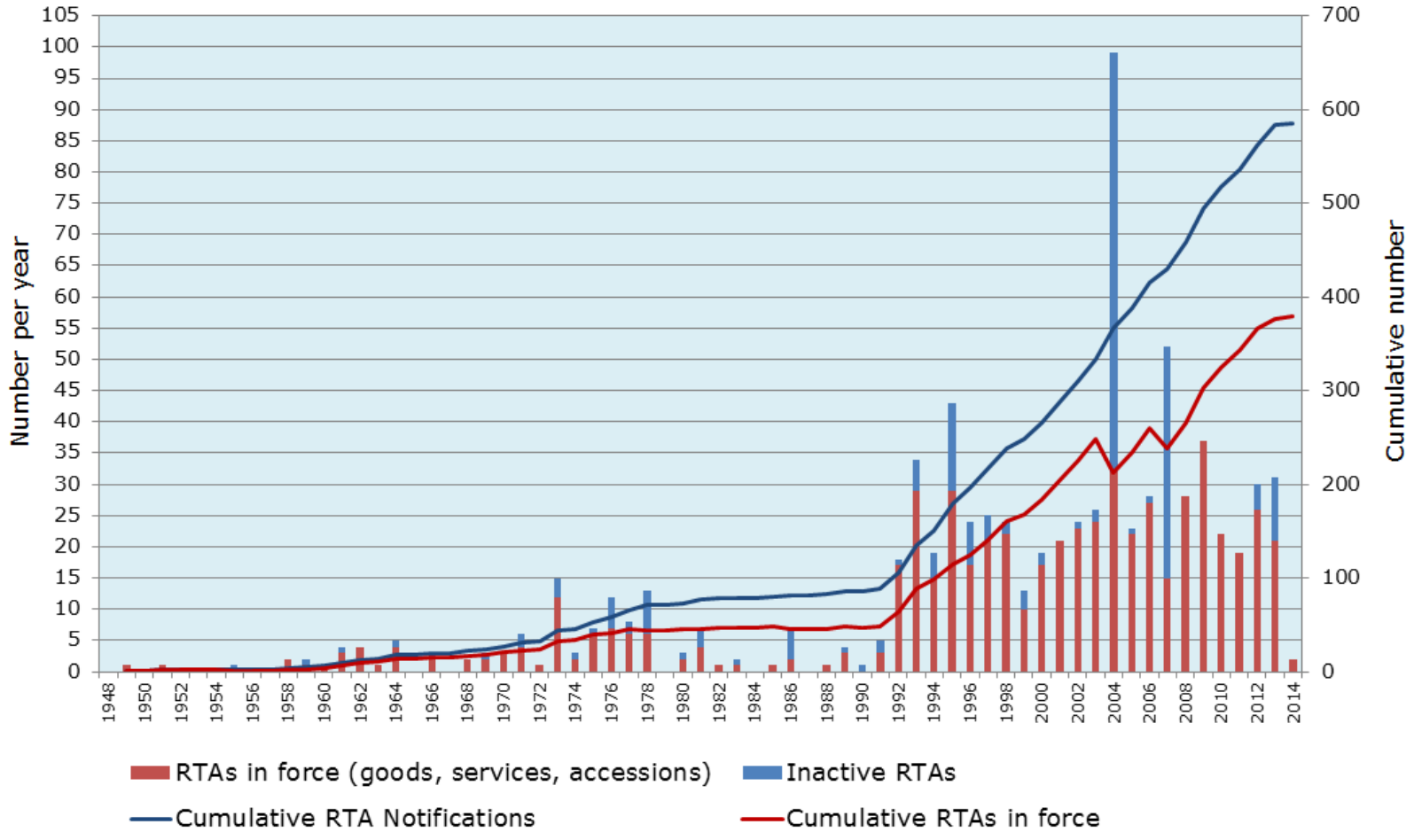
- Main limitation: the UK would have **no control over its external tariffs**, limiting its ability to negotiate trade agreements with other countries

Thank you!

Figure 1: Number of RTA notifications and RTA in force (source, WTO Secretariat)



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NAFTA Rules of Origin

- Example of RoO: **watches** (HS 91.02) can only be traded duty free among members if **watch movements** (HS 91.08), **watch straps** (HS 91.13) **watch cases** (HS 91.12) used to produce them are sourced within NAFTA.

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- We construct a **new dataset on NAFTA RoO**: for every final good, we can trace all the inputs that are subject to RoO requirements; similarly, for every intermediate good, we can link it to all final goods that impose RoO requirements on its sourcing. ▸ construction of RoO dataset

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Construction of dataset on NAFTA RoO

- Four steps to codify sourcing restrictions in NAFTA RoO:
  1. NAFTA RoO in Annex 401
  2. Coding Annex 401
  3. Mapping input-output linkages in NAFTA RoO
  4. Construction of RoO variables

Step 1: Annex 401

- **NAFTA RoO on textile fabric HS 6203.42 (men's or boys' trousers)**:

  "change[s] to subheadings 6203.41 through 6203.49 from any other chapter, except from headings 5106 through 5113, 5204 through 5212, 5307 through 5308 or 5310 through 5311, chapter 54, or heading 5508 through 5516, 5801 through 5802 or 6001 through 6002."

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- In some cases, alternative or complementary **value added rules** are used, but only in combination with change of classification rules.

Step 2: Coding Annex 401

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Figure 2: RoO on HS 6203.42

Output	Rule Type	Alternative VA	Complementary VA	Main Input Req	AdReq 1	AdReq 2	AdReq 3
62.03.41-62.03.49	CC	0	0	chapter 62	51.06-51.13	52.04-52.12	53.07-53.08
62.04.11-62.04.13	CC	0	0	chapter 62	51.06-51.13	52.04-52.12	53.07-53.08

Step 3: Mapping output-input linkages in NAFTA RoO

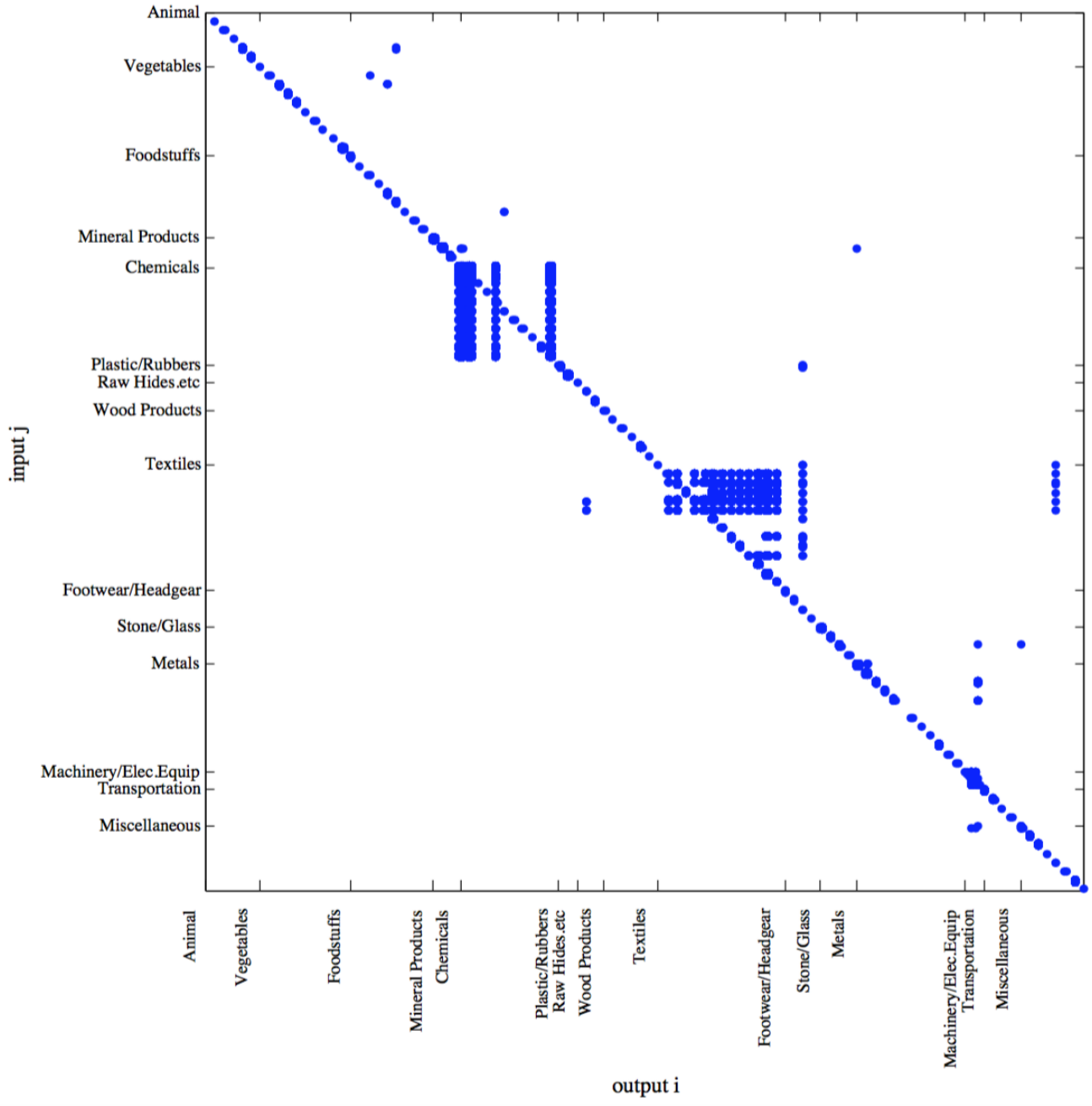
output	input
620342	550810
620342	550820
620342	550911
620342	550912
620342	550921
620342	550922
620342	550931
620342	550932
620342	550941
620342	550942
620342	550951
620342	550952
620342	550953
620342	550959
620342	550961
620342	550962
620342	550969
620342	550991
620342	550992

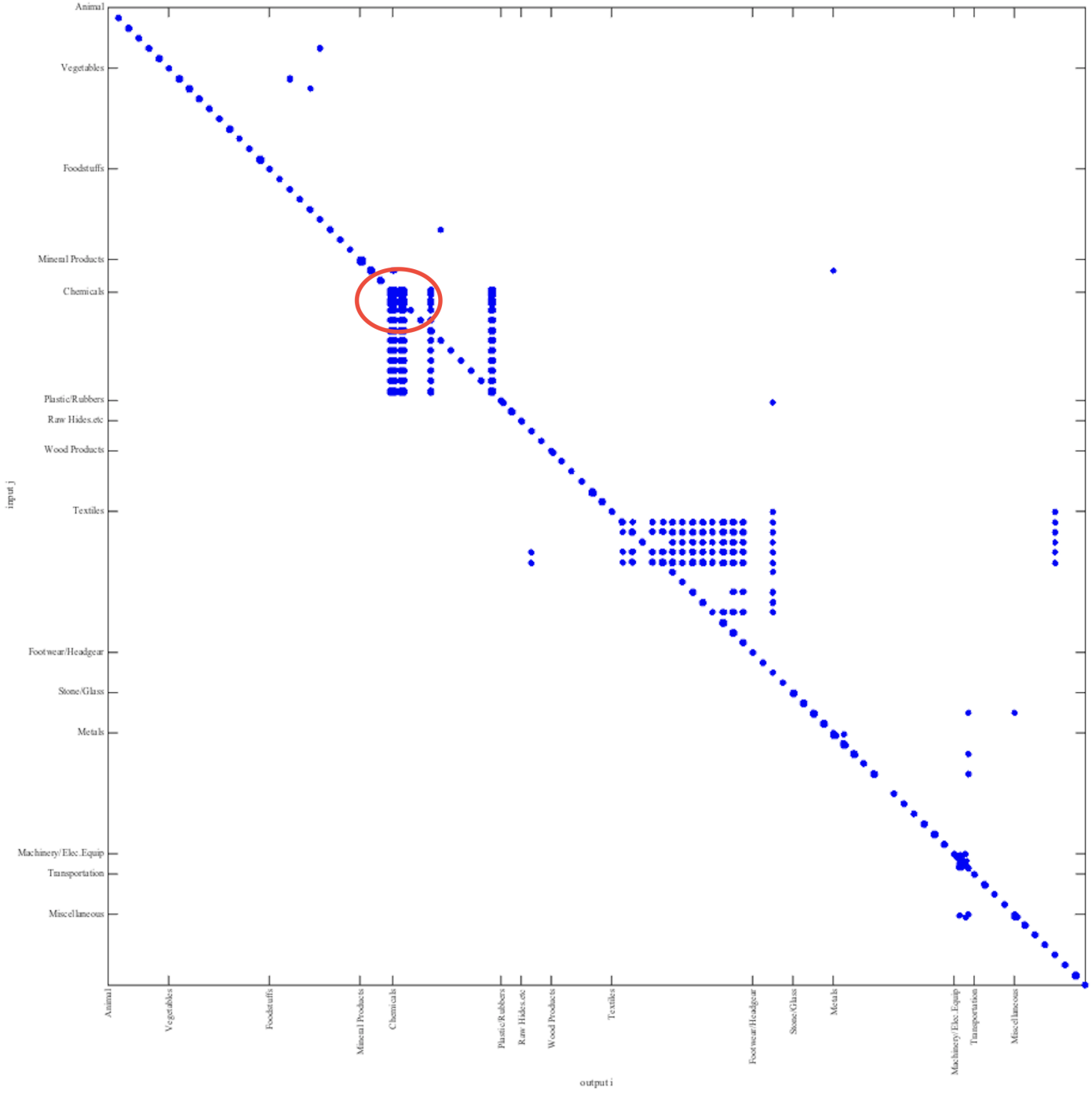
Step 4: Constructing RoO variables

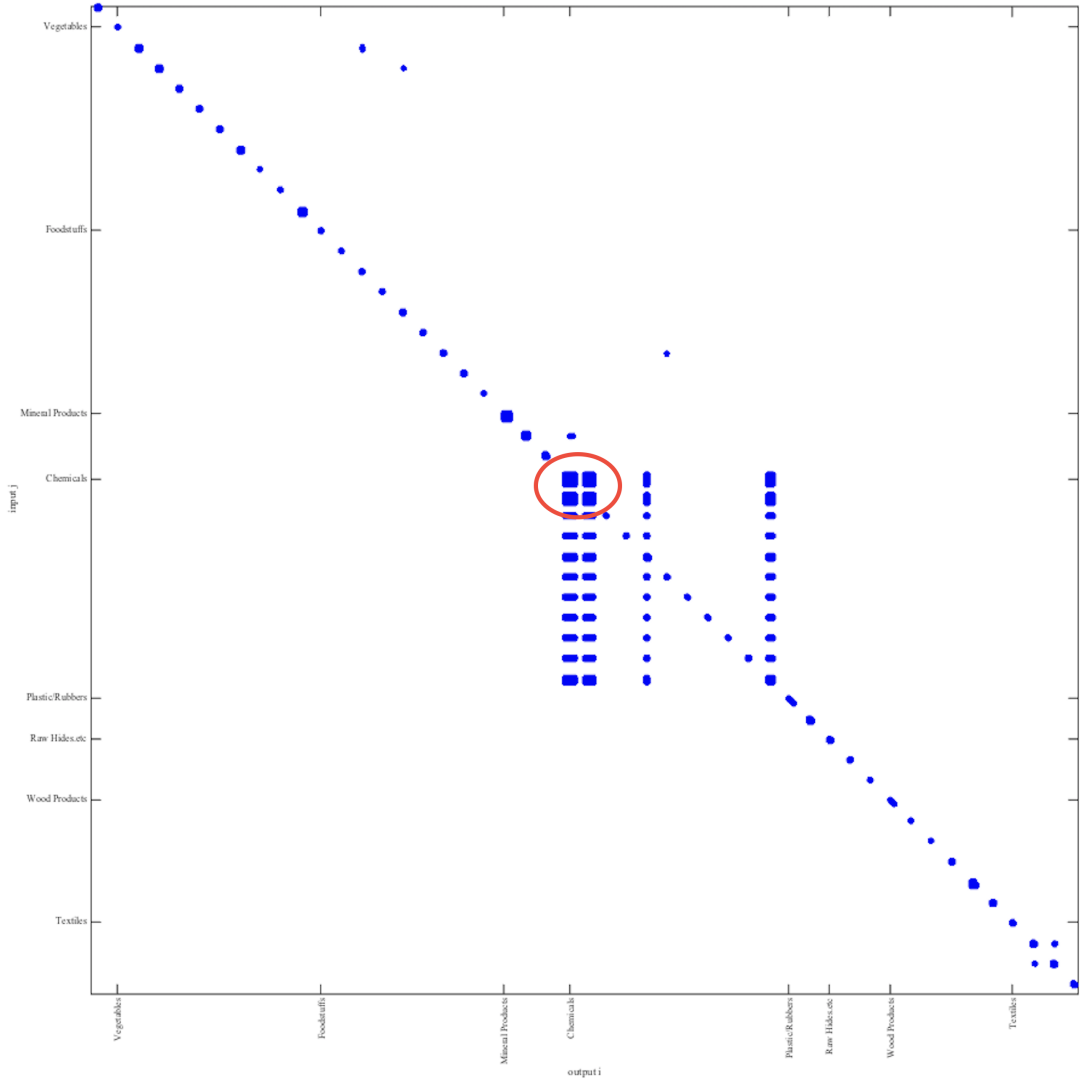
input	output
550810	620342
550810	620343
550810	620349
550810	620411
550810	620412
550810	620413
550810	620419
550810	620421
550810	620422
550810	620423
550810	620429
550810	620431
550810	620432
550810	620433
550810	620439
550810	620441
550810	620442

- RoO_{ij}: dummy equal to 1 is RoO on final good i restricts sourcing of j.

NAFTA Rules of Origin (RoO_{ij})




Animal
Vegetables
Foodstuffs
Mineral Products
Chemicals
Plastic/Rubbers
Raw Hides,etc
Wood Products
Textiles
Footwear/Headgear
Stone/Glass
Metals
Machinery/Elec.Equip
Transportation
Miscellaneous
input j
output i


Vegetables
Foodstuffs
Mineral Products
Chemicals
Plastic/Rubbers
Raw Hides,etc
Wood Products
Textiles
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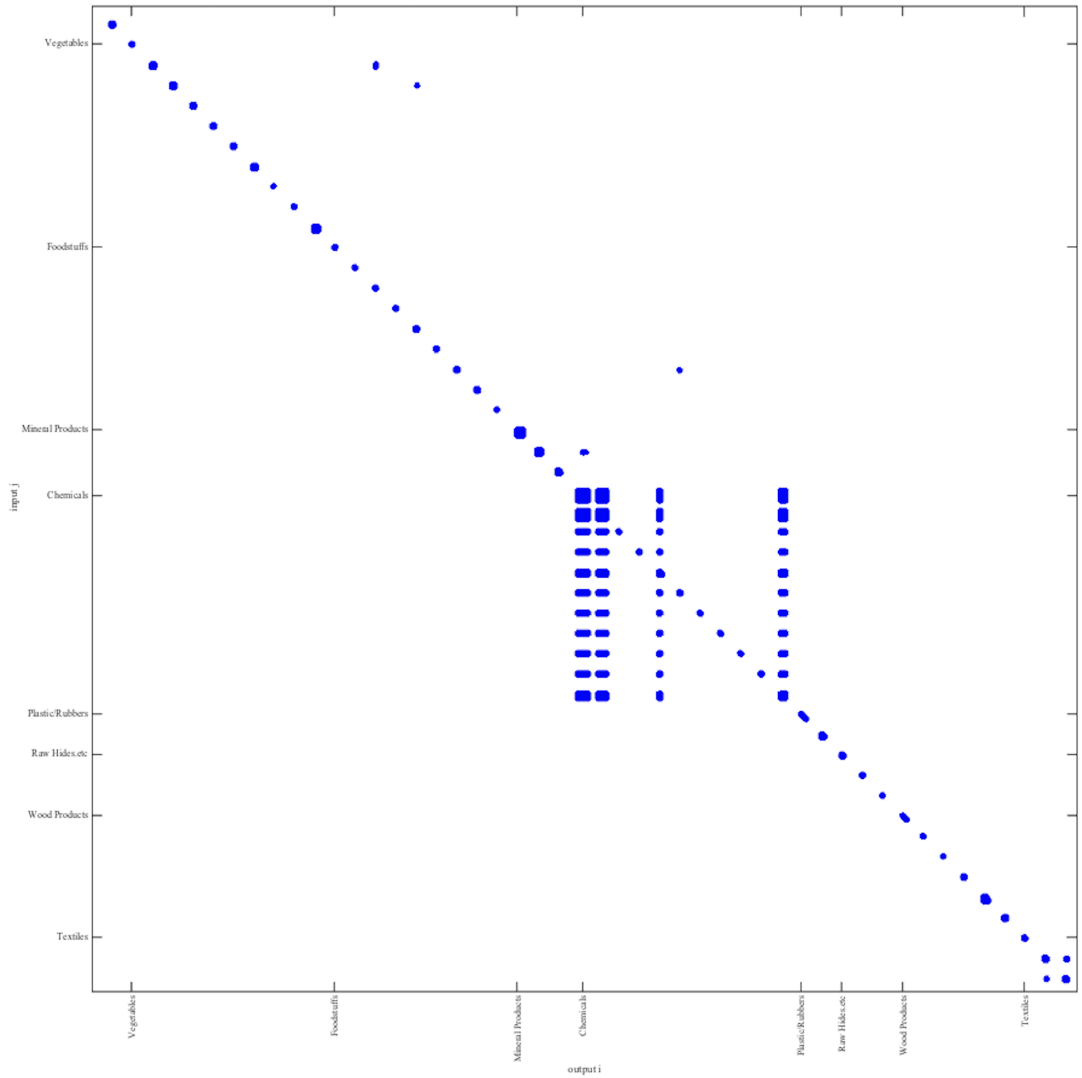
Vegetables
Foodstuffs
Mineral Products
Chemicals
Plastic/Rubbers
Raw Hides,etc
Wood Products
Textiles
output i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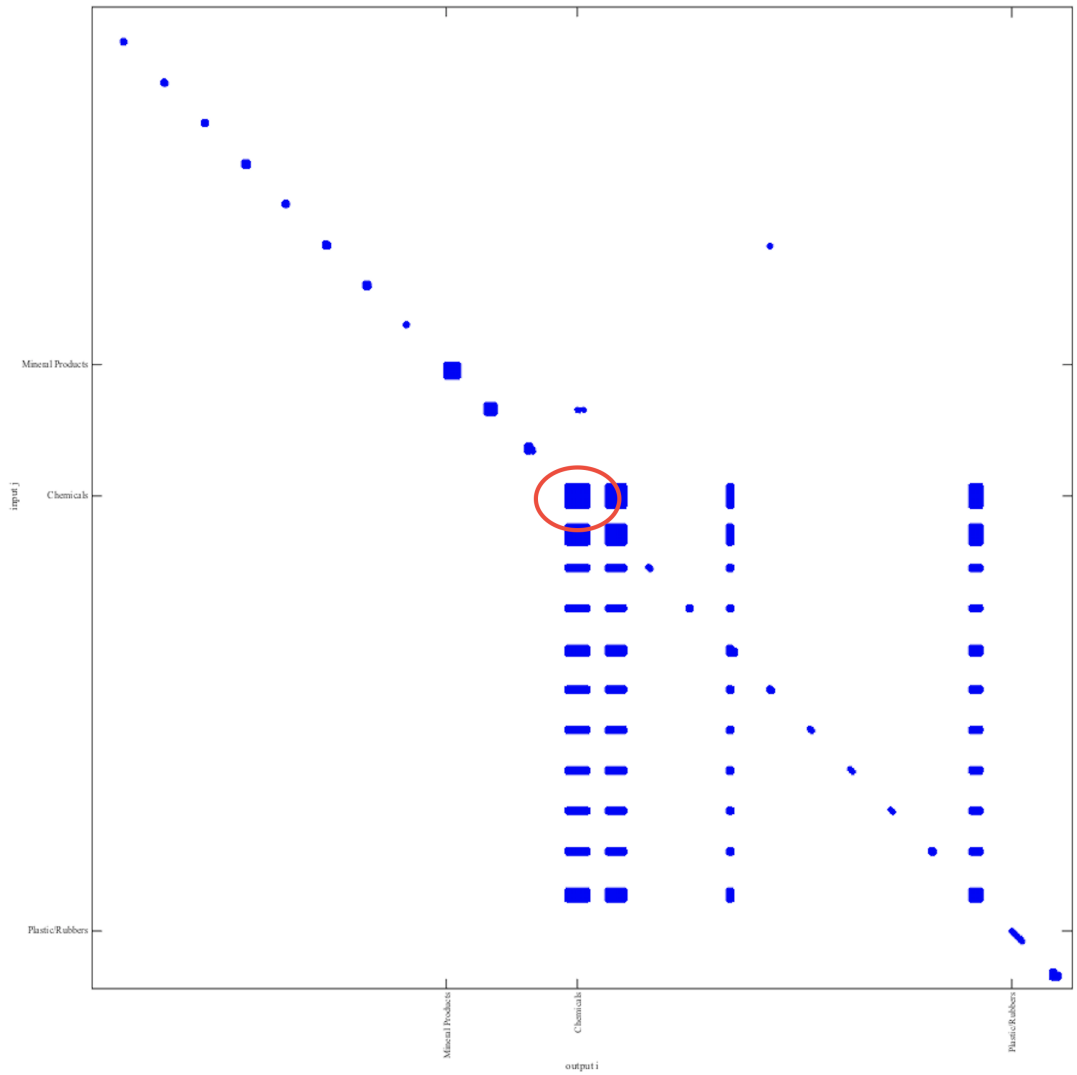
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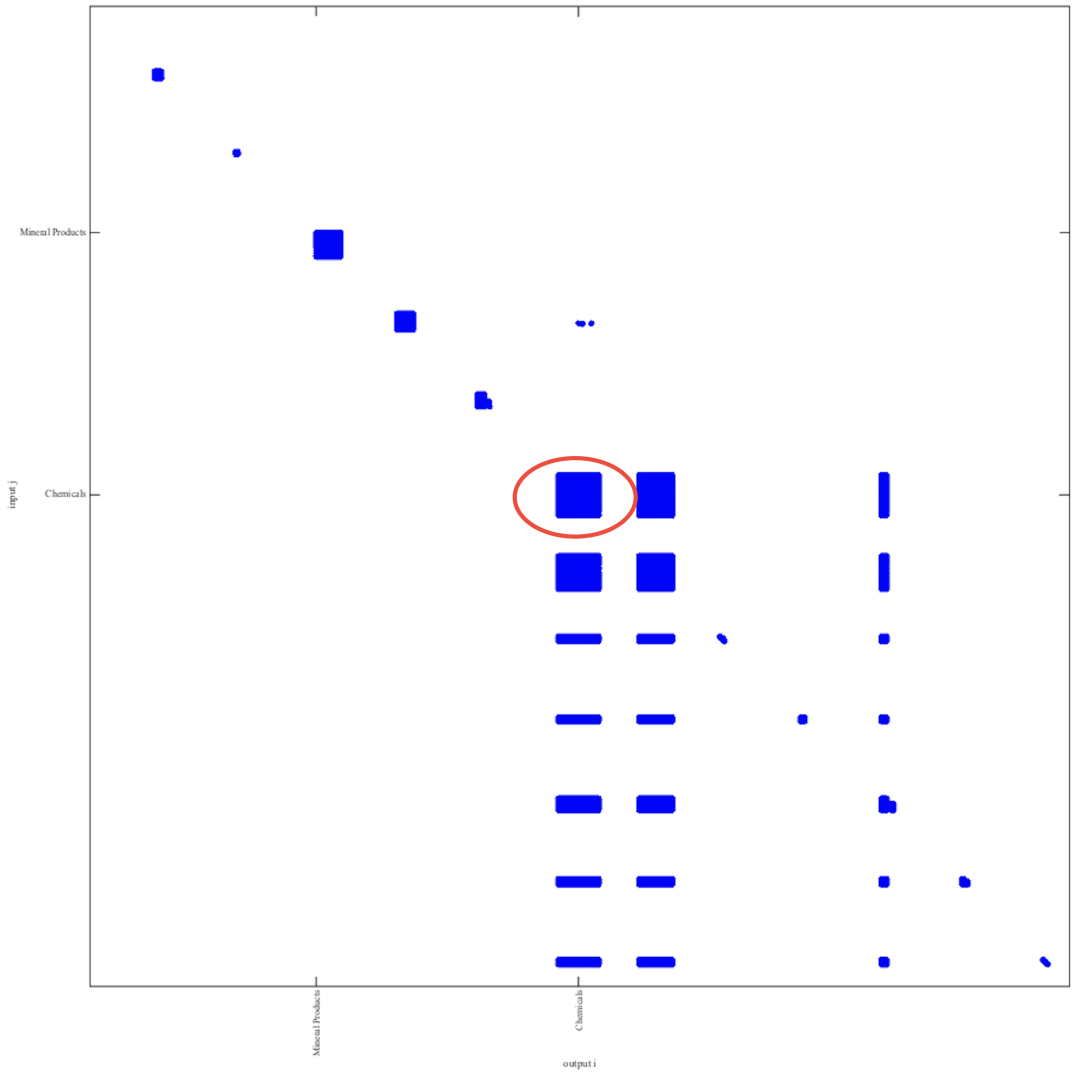
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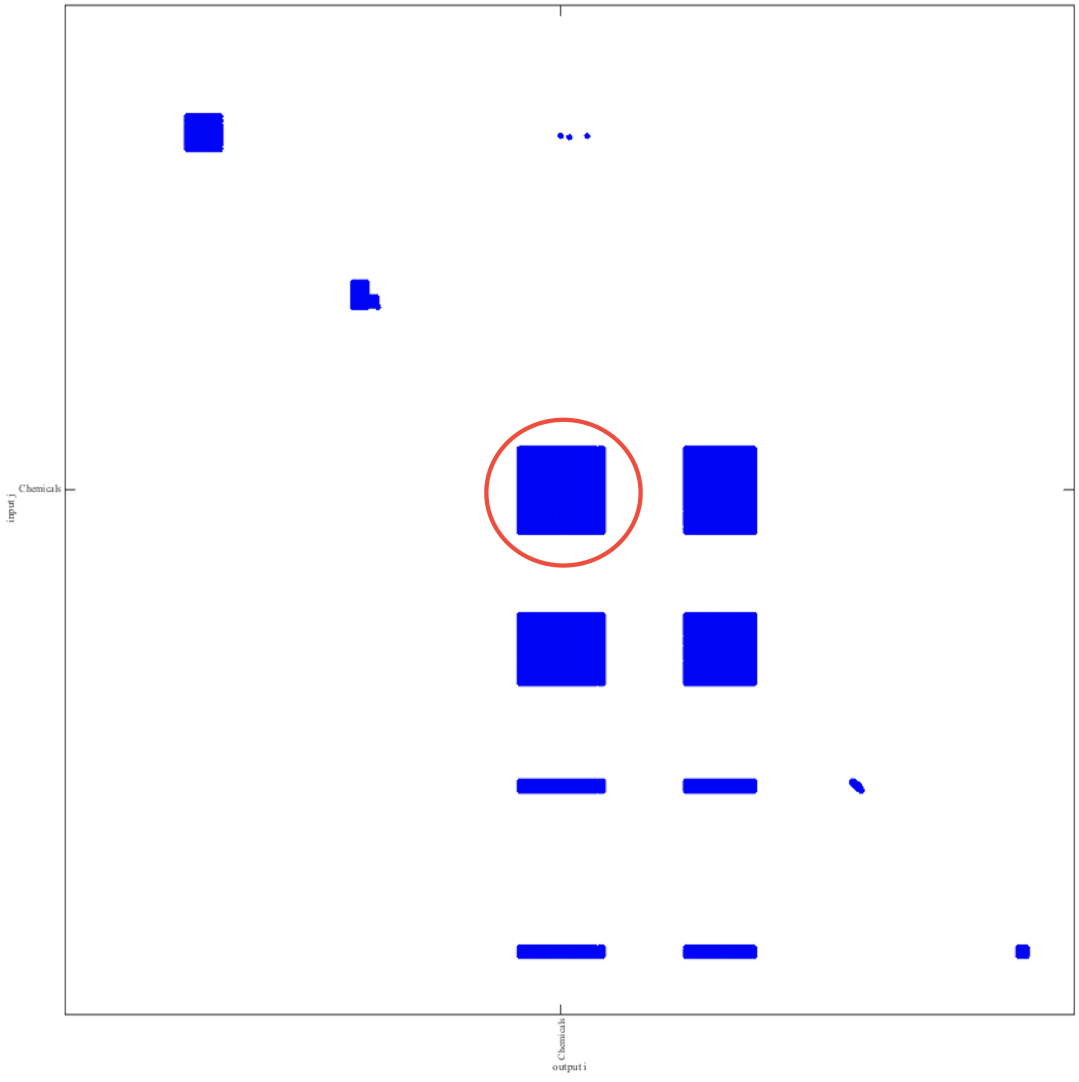
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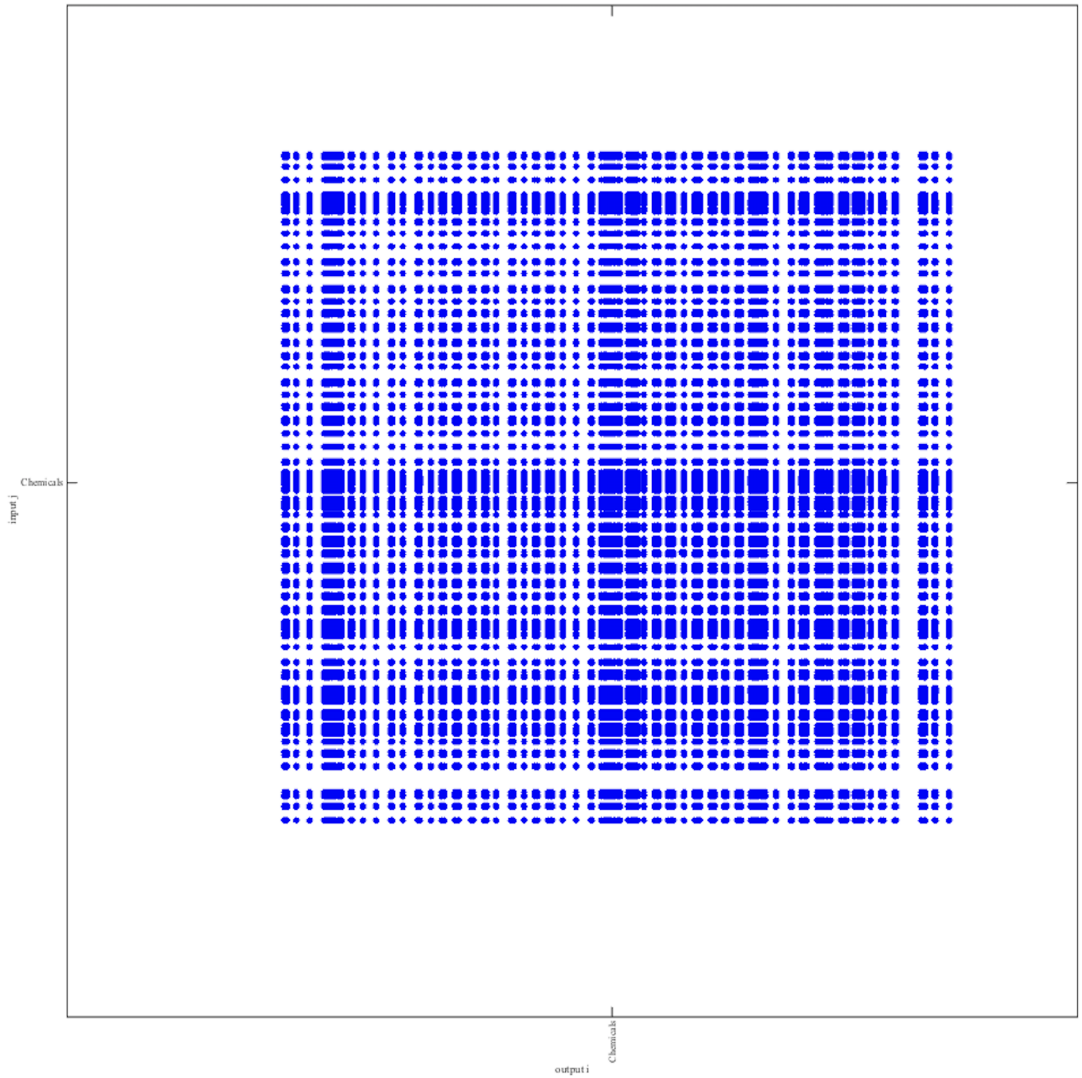
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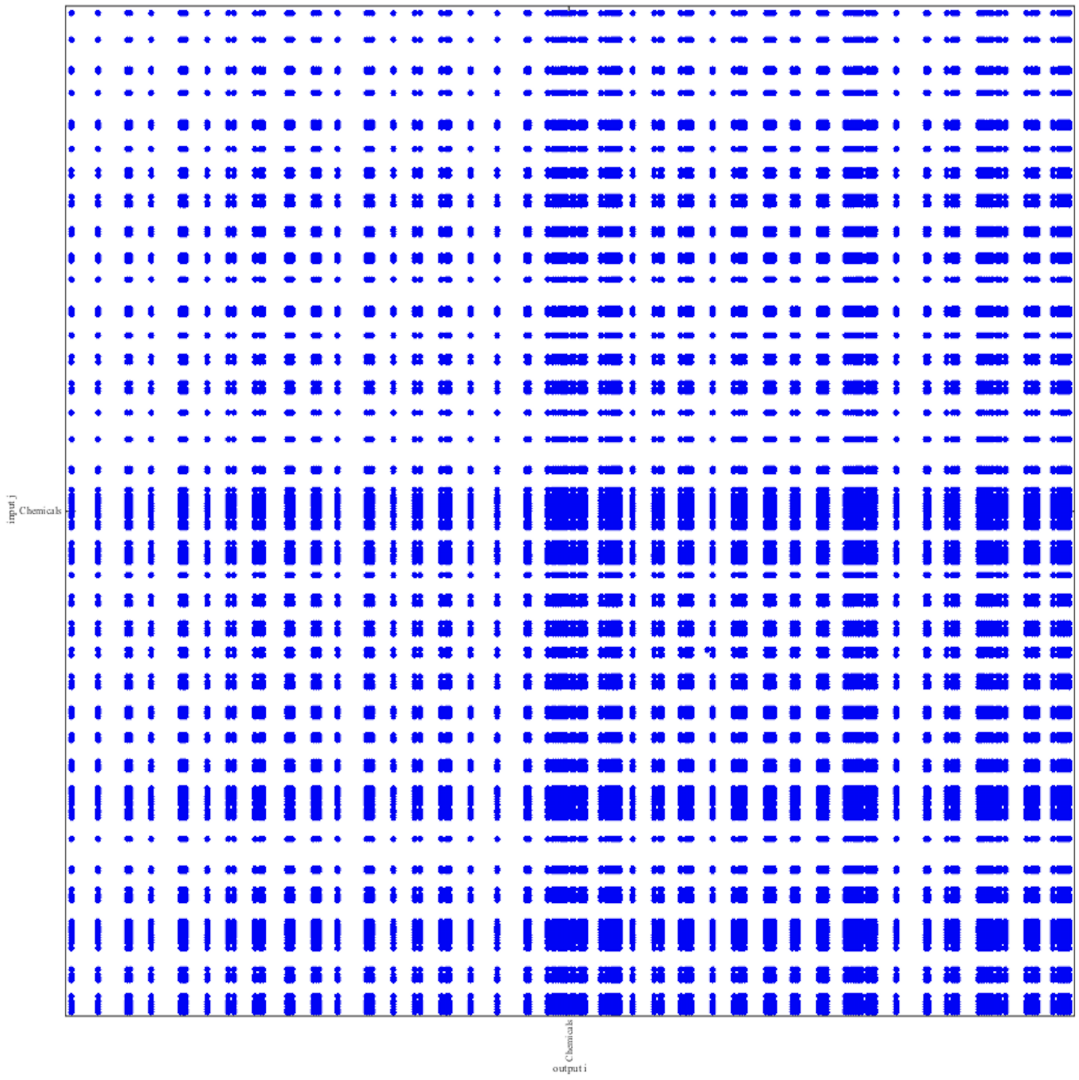
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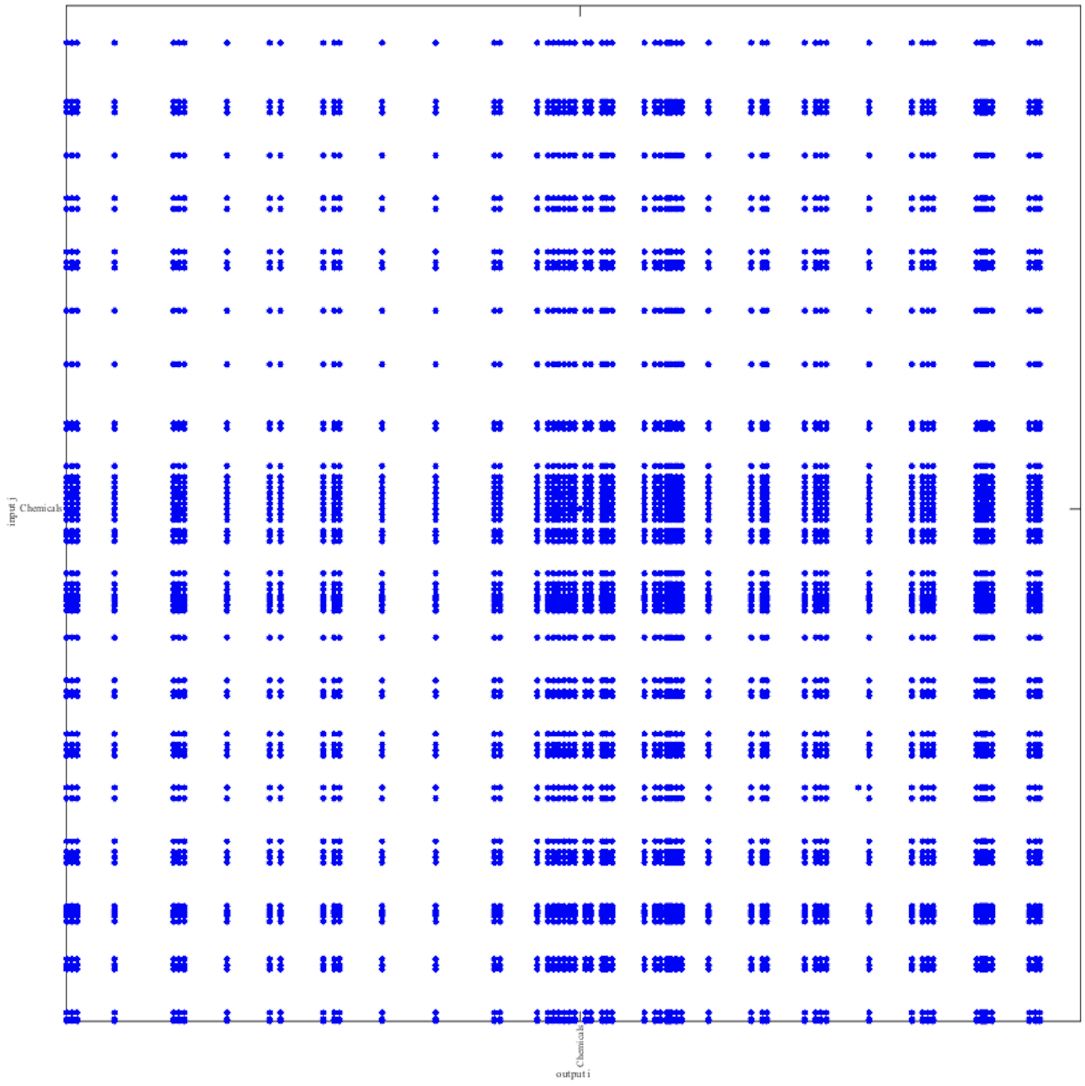
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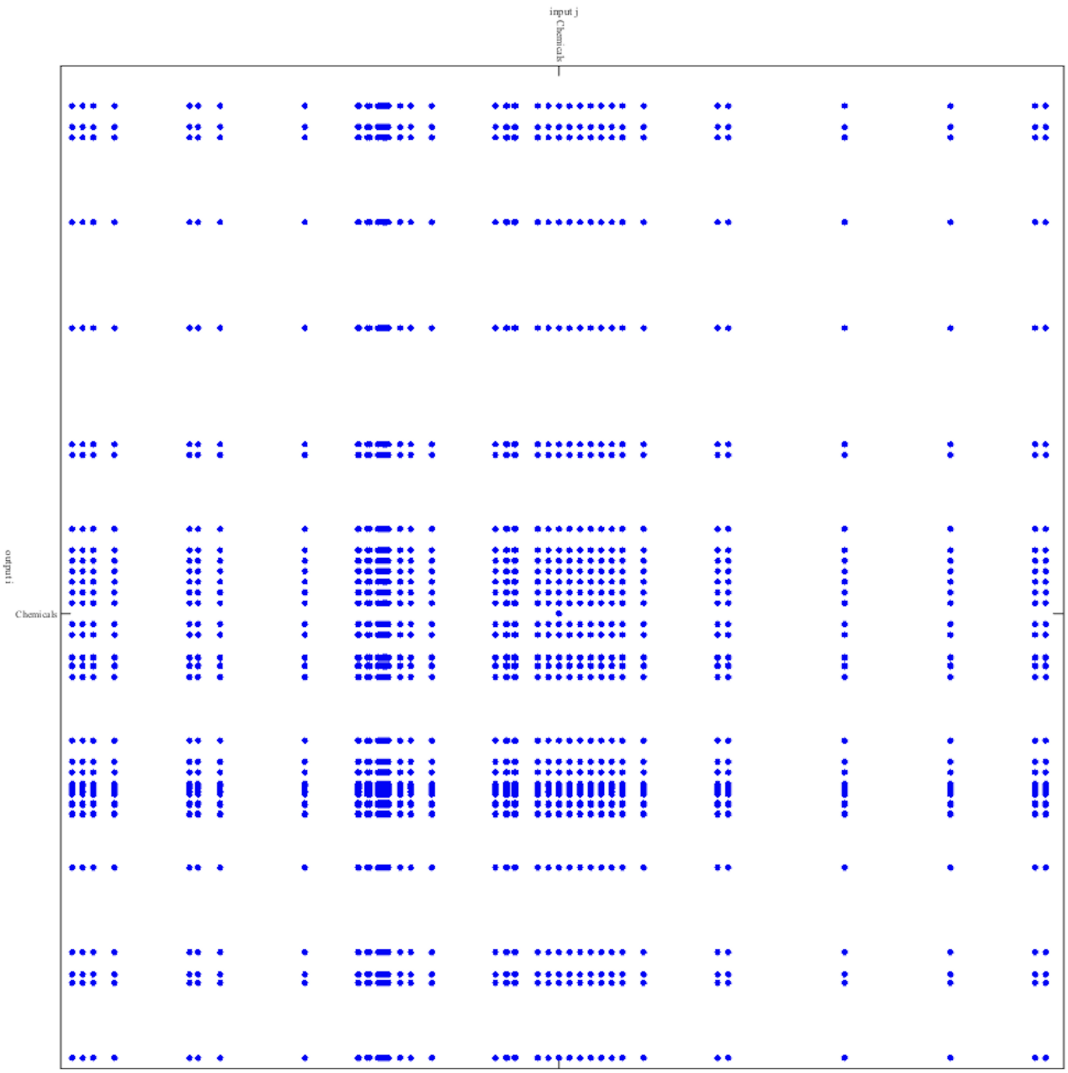
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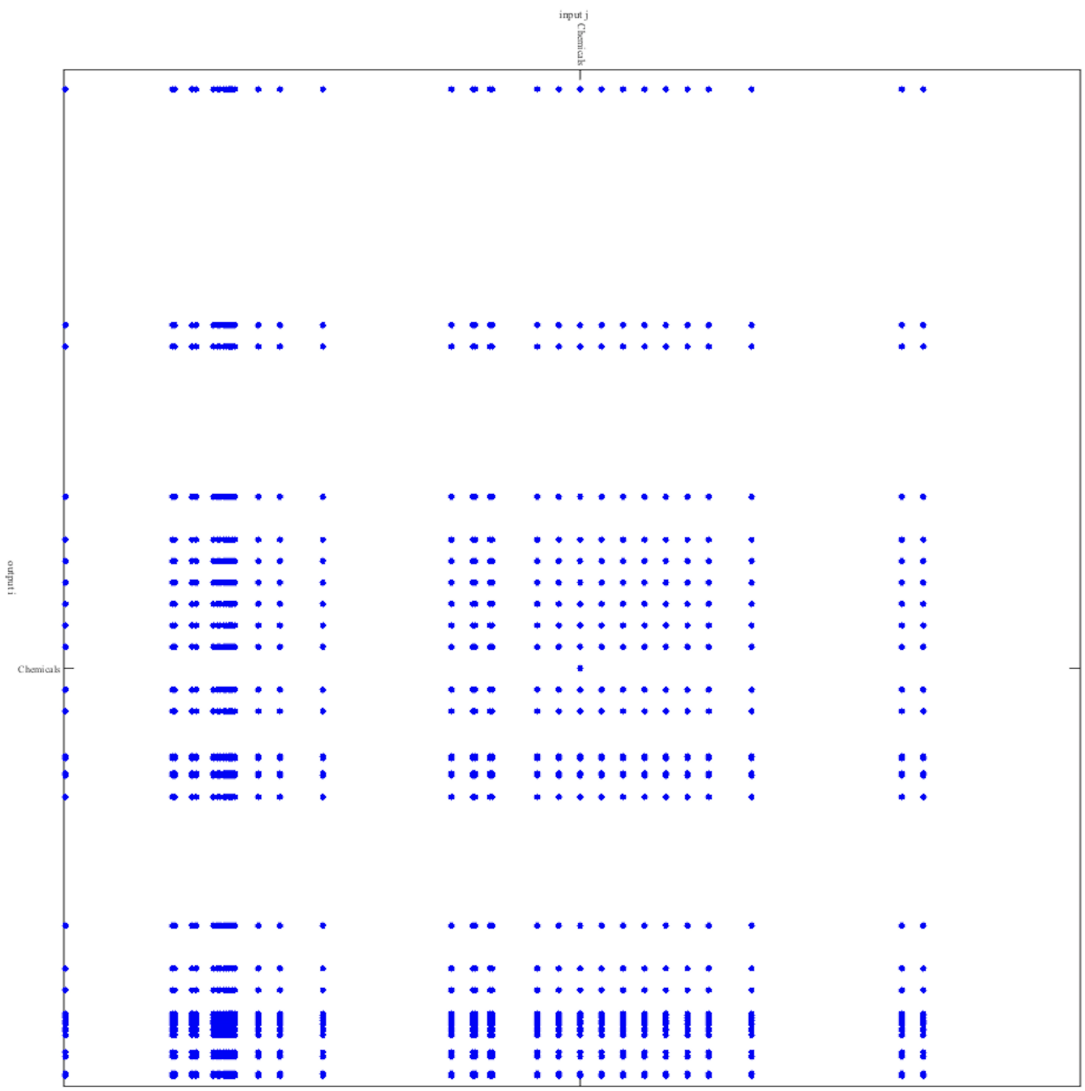
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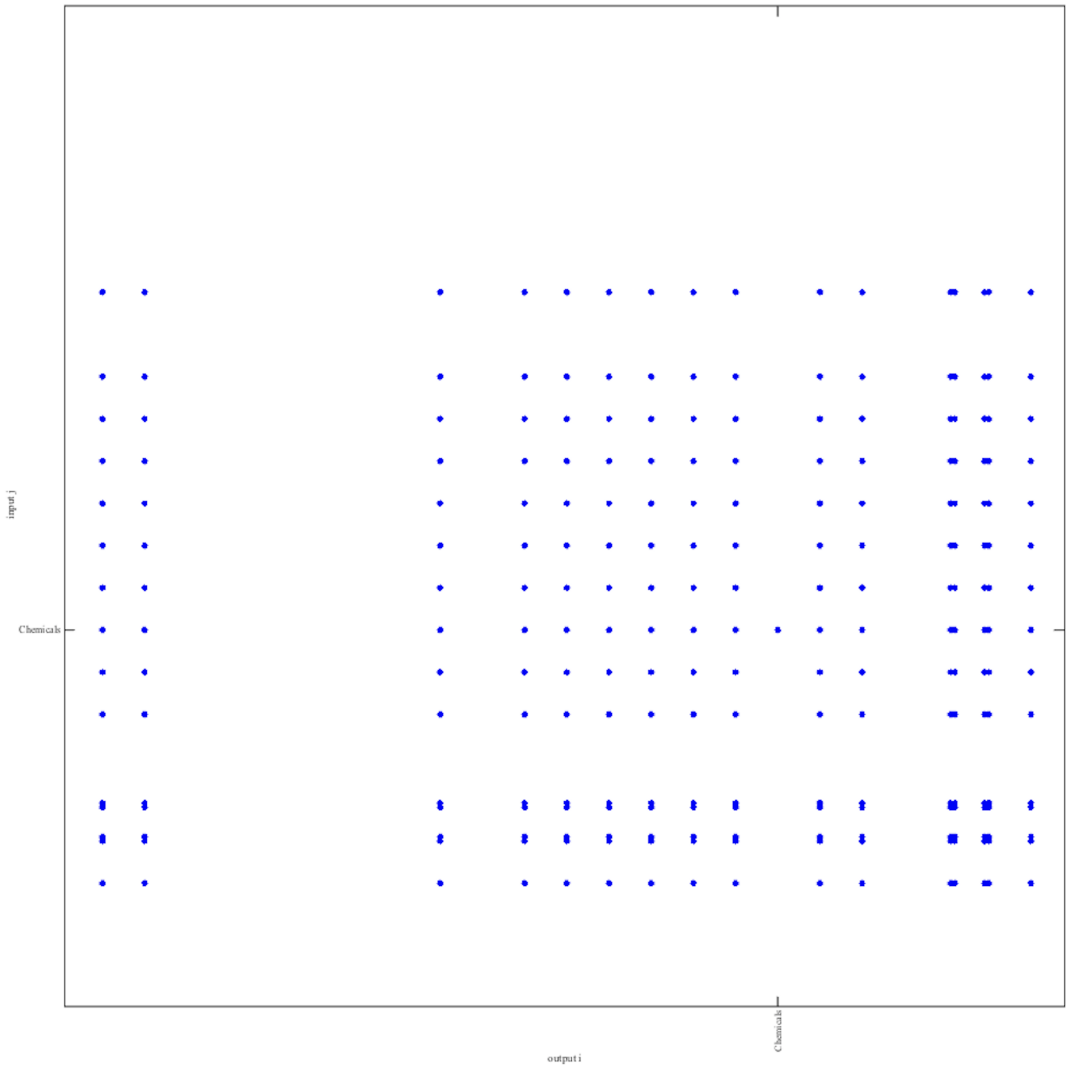
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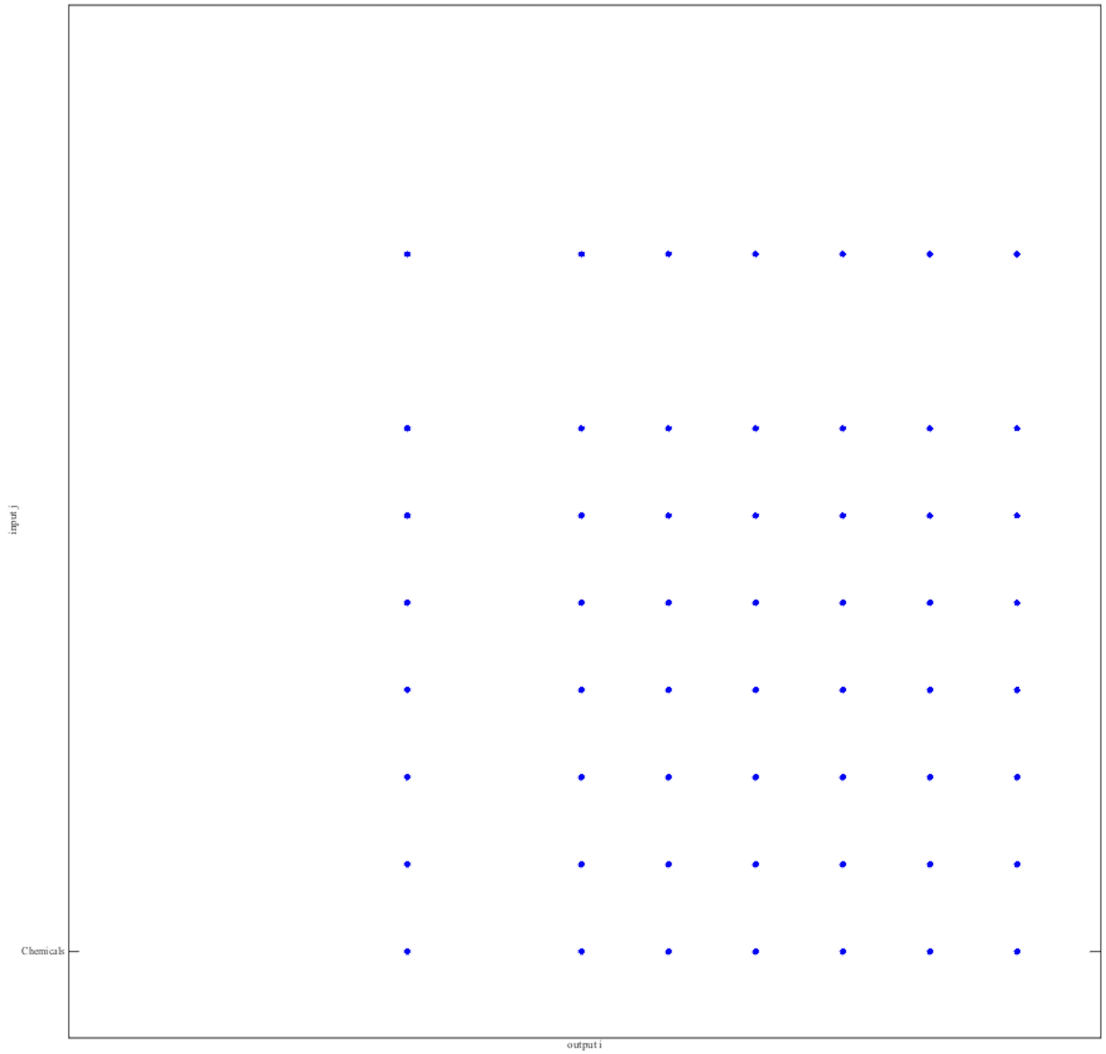
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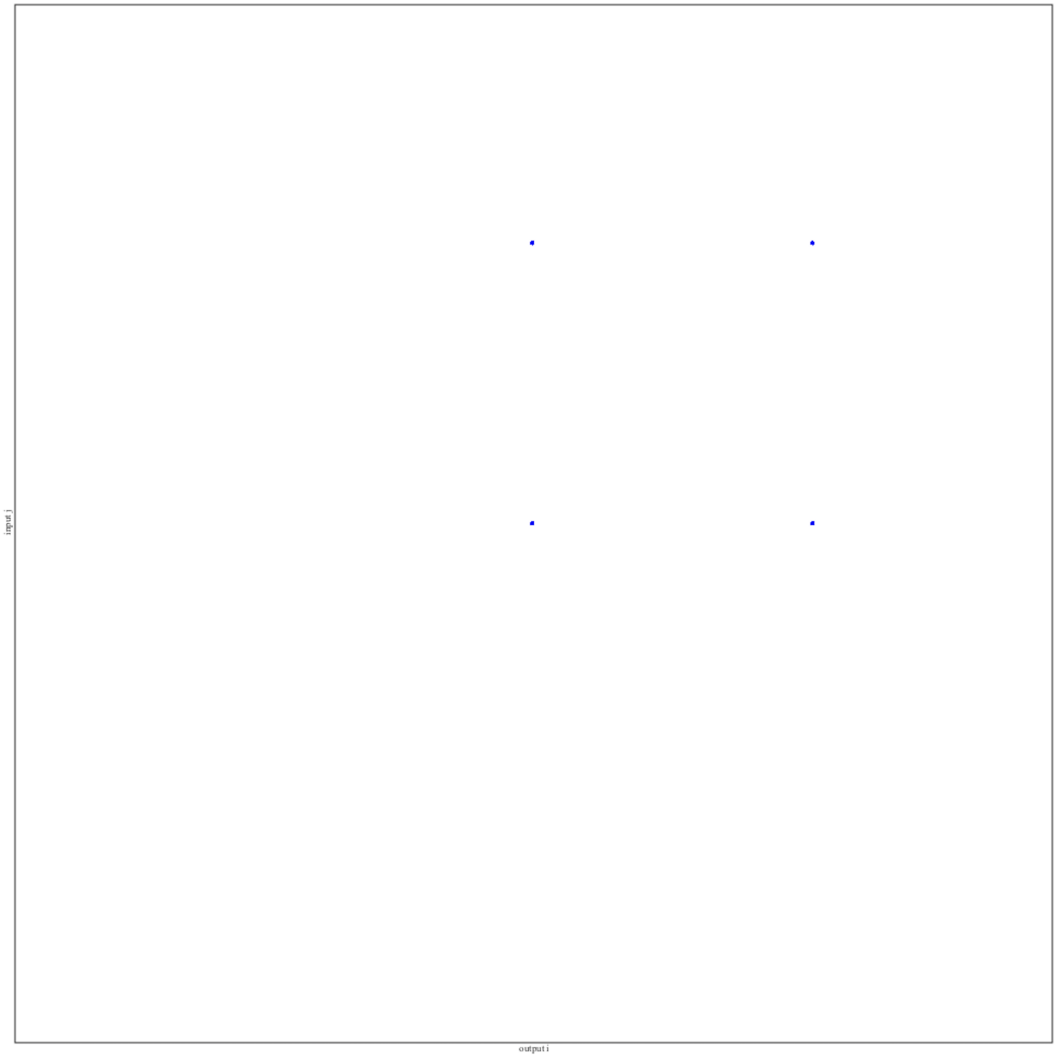

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EU Common External Tariffs

Figure 3: MFN tariffs applied by the EU, by broad category of goods

Product category	Maximum tariff currently applied to certain products within specified category, %	Simple average tariff currently applied to all products within specified category, %
Textiles	12.2	6.6
Clothing	12.0	11.5
Leather, footwear	17.0	4.2
Non-electrical machinery	10.0	1.9
Electrical equipment	14.0	2.8
Transport equipment	22.0	4.3
Other manufacturing	14.0	2.7

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