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# Protection of Geographical Indications in Trade Agreements: is it worth it?

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**BATModel** better agri-food  
trade modelling  
for policy analysis



## Geographical indications (GIs)

- Provide consumers with information on the geographical provenance and the characteristics of the products
- Aim at promoting and protecting the names of agricultural products and foodstuffs according to their origin
- Intend to sustain the competitiveness within the agri-food chains



## European GIs in trade agreements

- Long time contentious issue in European trade relationships (WTO DSB in 1999 with the US, in 2003 with Canada...)
- Promoted by the European Union in multilateral and bilateral negotiations
- List of GIs included in recent EU trade agreements
  - EU-Korea (2012), EU-South Africa (2017), EU-Canada (2018), EU-Japan (2019)...

## Literature on GIs

- Consumer's side : perception of labelled products (*Menapace et al. 2011, Hassan et al. 2011, Deselnicu 2013...*)
- Producer's side : Impact of GIs on survival of firms (*Bontemps et al. 2013*)
- Exporter's side : *Duvaleix, Emlinger, Gagné et Latouche 2021* on the French cheese industry
  - Price and quality effect of GI on exports
  - Higher market access to European markets and to countries with a similar policy about geographical indications
  - No volume effect

## This paper

- Investigates the impact of the inclusion of lists of GIs in European RTA on trade patterns
  - at the extensive margin (probability of export)
  - at the intensive margin (value)
  - on unit value (proxy for prices)
- Uses an original and exhaustive dataset of French agri-food firms data concerned by geographical indications
  - merged with customs data
  - merged with data on firms characteristics
- Shows that protection of GIs in RTA has a positive impact on trade

## Data sources

- **INAO** dataset : authorized plants for a given GI product 2012-2019
- **French customs dataset** : export in value and quality, by firm, destination and NC8 product
- **FARE Dataset** from INSEE : characteristics by firm and year (size, productivity)
- list of GIs products included in RTA

## Correspondance issues

### 1 Correspondence **GI products** $\Rightarrow$ **NC8 codes**

- A GI product may correspond to several NC8
- A NC8 may correspond both to GI and non-GI product
  - $\Rightarrow$  All exports of a authorized firm of a NC8 code concerned by a GI are considered labelled in our dataset
  - $\Rightarrow$  GI firms may export both labelled and non-labelled products

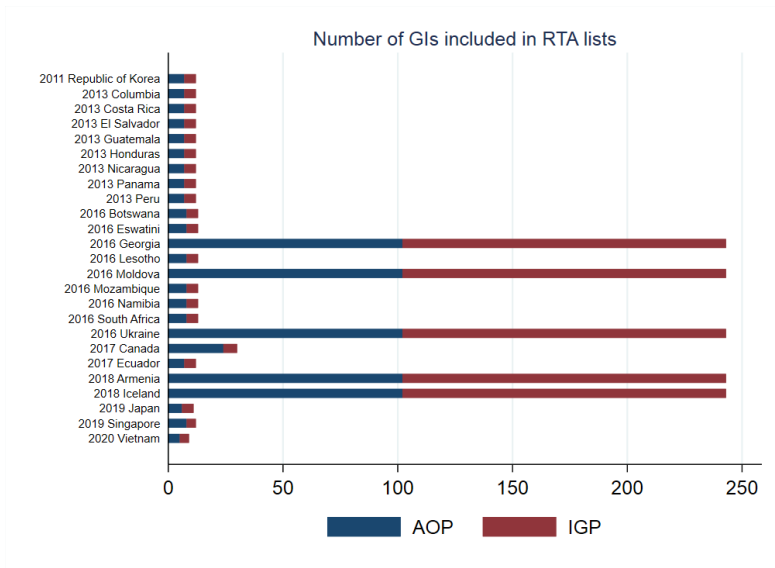
### 2 Correspondence **plant** (SIRET) $\Rightarrow$ **firms** (SIREN)



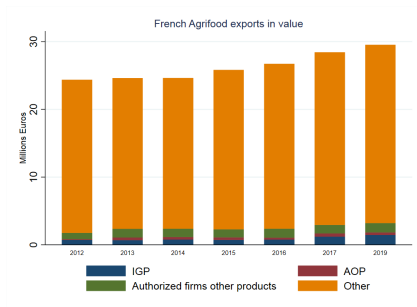
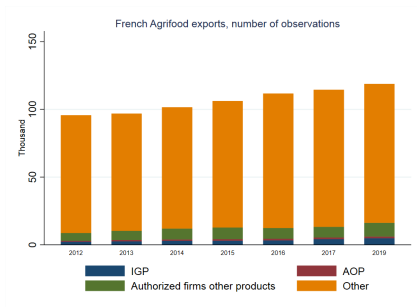
## Descriptive statistics

- 225 French **Geographical Indications** (99 AOP and 126 IGP)
- 313 **NC8 codes** (over a total of 2,313), mainly in the dairy and meat sectors
- 337 **authorized firms** (over 5,046)
- GIs exported to 160 **destinations** (over 226)
- 25 countries have RTAs with the EU which include **lists of GIs**

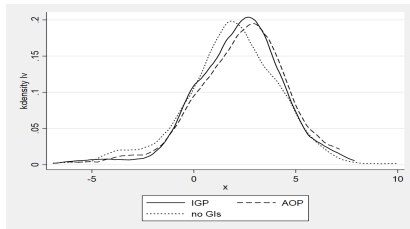
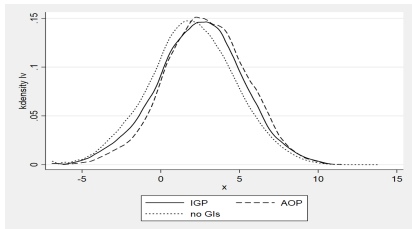
# Descriptive statistics



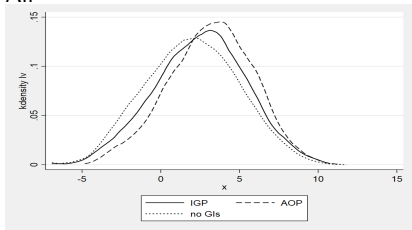
# Descriptive statistics



# Descriptive statistics

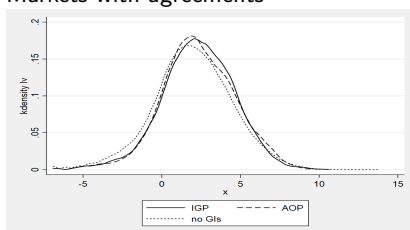


All



EU

Markets with agreements



Other markets

# Specification

$$Exp_{fjkt} = \alpha GI_{fkt} + \beta GI_{fkt} \times Agreement_{jkt} + \Pi_{ft} + \xi_{jkt} + \varepsilon_{fjkt}$$

- $GI_{ft}$  is a dummy indicating whether firm  $f$  is authorized to handle GIs for  $k$  in  $t$
- $Agreement_{jkt}$  is a dummy indicating whether country  $j$  recognizes a GI for product  $k$  in  $t$
- $\Pi_{ft}$  time variant firm characteristics (productivity) or fixed effects
- $\xi_{jkt}$  fixed effects controls for characteristics of the market of country  $j$  and good  $k$  the year  $t$
- $Exp_{fjkt} =$ 
  - $lv_{fjkt}$  log of export values of  $f$  to  $j$  for the  $k$  at  $t$
  - $X_{fjkt}$  dummy=0 if  $f$  exports  $k$  to  $j$  at  $t$
  - $luv_{fjkt}$  log of export unit values of  $f$  to  $j$  for the  $k$  at  $t$

## Results: intensive margin

|  | (1)                   | (2)                   | $\ln v_{fjkt}$<br>(3) | (4)                  | (5)                  |
|--|-----------------------|-----------------------|-----------------------|----------------------|----------------------|
| productivity <sub>ft</sub>               | 0.0157<br>(0.0101)    |                       |                       |                      |                      |
| $GI_{fkt}$                               | 0.6885***<br>(0.0573) | 0.8314***<br>(0.0598) | 0.8654***<br>(0.0623) | 0.3176<br>(0.9704)   |                      |
| $GI_{fkt} \times \text{Agreement}_{jkt}$ | 0.3446*<br>(0.1976)   | 0.3452*<br>(0.2069)   | 0.5115**<br>(0.2132)  | 0.4726**<br>(0.2385) | 0.8797**<br>(0.3670) |
| $GI_{fkt} \times EU_j$                   | 0.0906<br>(0.0597)    | 0.1206**<br>(0.0598)  | 0.1113<br>(0.0715)    | 0.1111<br>(0.0806)   | 0.1171<br>(0.1015)   |
| N  | 576,970               | 587,525               | 571,657               | 482,162              | 381,385              |
| R2                                       | 0.52                  | 0.53                  | 0.67                  | 0.83                 | 0.87                 |
| destination-product-time                 | yes                   | yes                   | yes                   | yes                  | yes                  |
| Firm                                     | yes                   | -                     | -                     | -                    | -                    |
| firm-time                                | no                    | yes                   | yes                   | yes                  | -                    |
| Firm-destination                         | no                    | no                    | yes                   | yes                  | -                    |
| Firm-product                             | no                    | no                    | no                    | yes                  | -                    |
| firm-product-time                        | no                    | no                    | no                    | no                   | yes                  |
| firm-destination-time                    | no                    | no                    | no                    | no                   | yes                  |

Notes: All continuous variables are in logarithm. Clustered standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Results: extensive margin

|  | (1)                   | (2)                   | $X_{fjkt}$<br>(3)     | (4)                   | (5)                   |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| productivity <sub>ft</sub>                   | 0.0003<br>(0.0007)    |                       |                       |                       |                       |
| GI <sub>fkt</sub>                            | 0.0434***<br>(0.0036) | 0.0516***<br>(0.0038) | 0.0503***<br>(0.0033) | 0.0128<br>(0.0376)    |                       |
| GI <sub>fkt</sub> × Agreement <sub>jkt</sub> | 0.0170***<br>(0.0062) | 0.0162***<br>(0.0062) | 0.0173***<br>(0.0066) | 0.0097*<br>(0.0058)   | 0.0123*<br>(0.0069)   |
| GI <sub>fkt</sub> × EU <sub>j</sub>          | 0.0600***<br>(0.0053) | 0.0614***<br>(0.0053) | 0.0598***<br>(0.0042) | 0.0689***<br>(0.0040) | 0.0758***<br>(0.0040) |
| N  | 9,850,369             | 10,253,238            | 10,090,376            | 10,090,165            | 9,116,999             |
| R2   | 0.18                  | 0.19                  | 0.39                  | 0.50                  | 0.55                  |
| destination-product-time                     | yes                   | yes                   | yes                   | yes                   | yes                   |
| Firm   | yes                   | -                     | -                     | -                     | -                     |
| firm-time                                    | no                    | yes                   | yes                   | yes                   | -                     |
| Firm-destination                             | no                    | no                    | yes                   | yes                   | -                     |
| Firm-product                                 | no                    | no                    | no                    | yes                   | -                     |
| firm-product-time                            | no                    | no                    | no                    | no                    | yes                   |
| firm-destination-time                        | no                    | no                    | no                    | no                    | yes                   |

Notes: All continuous variables are in logarithm. Clustered standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Results: unit values

|  | (1)                 | (2)                 | luv <sub>fjkt</sub><br>(3) | (4)                   | (5)                   |
|--|---------------------|---------------------|----------------------------|-----------------------|-----------------------|
| productivity <sub>ft</sub>                   | -0.0017<br>(0.0031) |                     |                            |                       |                       |
| GI <sub>fkt</sub>                            | 0.0055<br>(0.0138)  | 0.0027<br>(0.0148)  | -0.0015<br>(0.0154)        | 0.1948<br>(0.2269)    |                       |
| GI <sub>fkt</sub> × Agreement <sub>jkt</sub> | 0.1170*<br>(0.0650) | 0.0941<br>(0.0639)  | 0.1398*<br>(0.0721)        | 0.2239***<br>(0.0811) | 0.3426***<br>(0.1241) |
| GI <sub>fkt</sub> × EU <sub>j</sub>          | -0.0047<br>(0.0140) | -0.0015<br>(0.0145) | 0.0175<br>(0.0170)         | 0.0501**<br>(0.0195)  | 0.0774***<br>(0.0235) |
| N  | 576,414             | 586,953             | 571,097                    | 481,732               | 380,962               |
| R2   | 0.77                | 0.78                | 0.84                       | 0.90                  | 0.92                  |
| destination-product-time                     | yes                 | yes                 | yes                        | yes                   | yes                   |
| Firm   | yes                 | -                   | -                          | -                     | -                     |
| firm-time                                    | no                  | yes                 | yes                        | yes                   | -                     |
| Firm-destination                             | no                  | no                  | yes                        | yes                   | -                     |
| Firm-product                                 | no                  | no                  | no                         | yes                   | -                     |
| firm-product-time                            | no                  | no                  | no                         | no                    | yes                   |
| firm-destination-time                        | no                  | no                  | no                         | no                    | yes                   |

Notes: All continuous variables are in logarithm. Clustered standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



## Results: heterogeneity of GIs

|   | $\ln v_{fjkt}$<br>(1) | $\ln uv_{fjkt}$<br>(2) | $X_{fjkt}$<br>(3)     |
|---|-----------------------|------------------------|-----------------------|
| $IGP_{fkt}$                               | 0.8593***<br>(0.0739) | -0.0530***<br>(0.0195) | 0.0558***<br>(0.0043) |
| $IGP_{fkt} \times \text{Agreement}_{jkt}$ | 0.3978<br>(0.2950)    | -0.0764<br>(0.1099)    | 0.0122<br>(0.0085)    |
| $IGP_{fkt} \times EU_j$                   | 0.0334<br>(0.0775)    | 0.0778***<br>(0.0200)  | 0.0447***<br>(0.0047) |
| $AOP_{fkt}$                               | 0.6113***<br>(0.0917) | 0.0572***<br>(0.0192)  | 0.0364***<br>(0.0042) |
| $AOP_{fkt} \times \text{Agreement}_{jkt}$ | 0.5781**<br>(0.2765)  | 0.2179**<br>(0.0908)   | 0.0278***<br>(0.0089) |
| $AOP_{fkt} \times EU_j$                   | 0.2798**<br>(0.1189)  | -0.0788***<br>(0.0241) | 0.0803***<br>(0.0082) |
| N   | 571,657               | 571,097                | 10,090,376            |
| r <sup>2</sup>                            | 0.67                  | 0.84                   | 0.39                  |
| destination-product-time                  | yes                   | yes                    | yes                   |
| firm-time                                 | yes                   | yes                    | yes                   |
| Firm-destination                          | yes                   | yes                    | yes                   |

Notes: All continuous variables are in logarithm. Clustered standard errors in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Conclusion

- We show that :
  - GIs foster exports of French agri-food firms
  - the recognition of GIs in trade agreements increases both the intensive and extensive margins of trade, as well as unit values for these products
  - this outcome is mainly driven by AOP, the oldest and most renowned geographical indication

→ In favor of the inclusion of lists of GIs in trade agreements

## Future steps

- Investigate whether the inclusion of GIs in RTA increases the perceived quality of products (Khandelwal 2013)
- Look at potential spillover effects for the other products of the authorized firms
- Explore the heterogeneity by sector and by country