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**The role of institutional quality on the performance in the export of coconut products**

**Jessie Lin, University of Goettingen, [jessie.lin@uni-goettingen.de](mailto:jessie.lin@uni-goettingen.de)**

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# The Role of Institutions on the Performance in the Export of Coconut Products

Jessie Lin, Insa Flachsbarth, and Stephan von Cramon-Taubadel

University of Goettingen, Department of Agricultural Economics and Rural Development

## INTRODUCTION

- Production and trade of high value agricultural commodities have become significant in global supply chains
- Growing literature on institutions and bilateral trade, but few on agricultural trade
- Good governance leads to increased agricultural trade due to lower transaction costs and better facilitation of markets (Bojnec & Ferto, 2009; Mendonca et al., 2014).



- No focus on single commodities and the different categories of value addition
- Coconut sector comprises of:
  - Traditionally low value products
  - High value niche products
- We consider product-specific heterogeneities when evaluating institutional effects

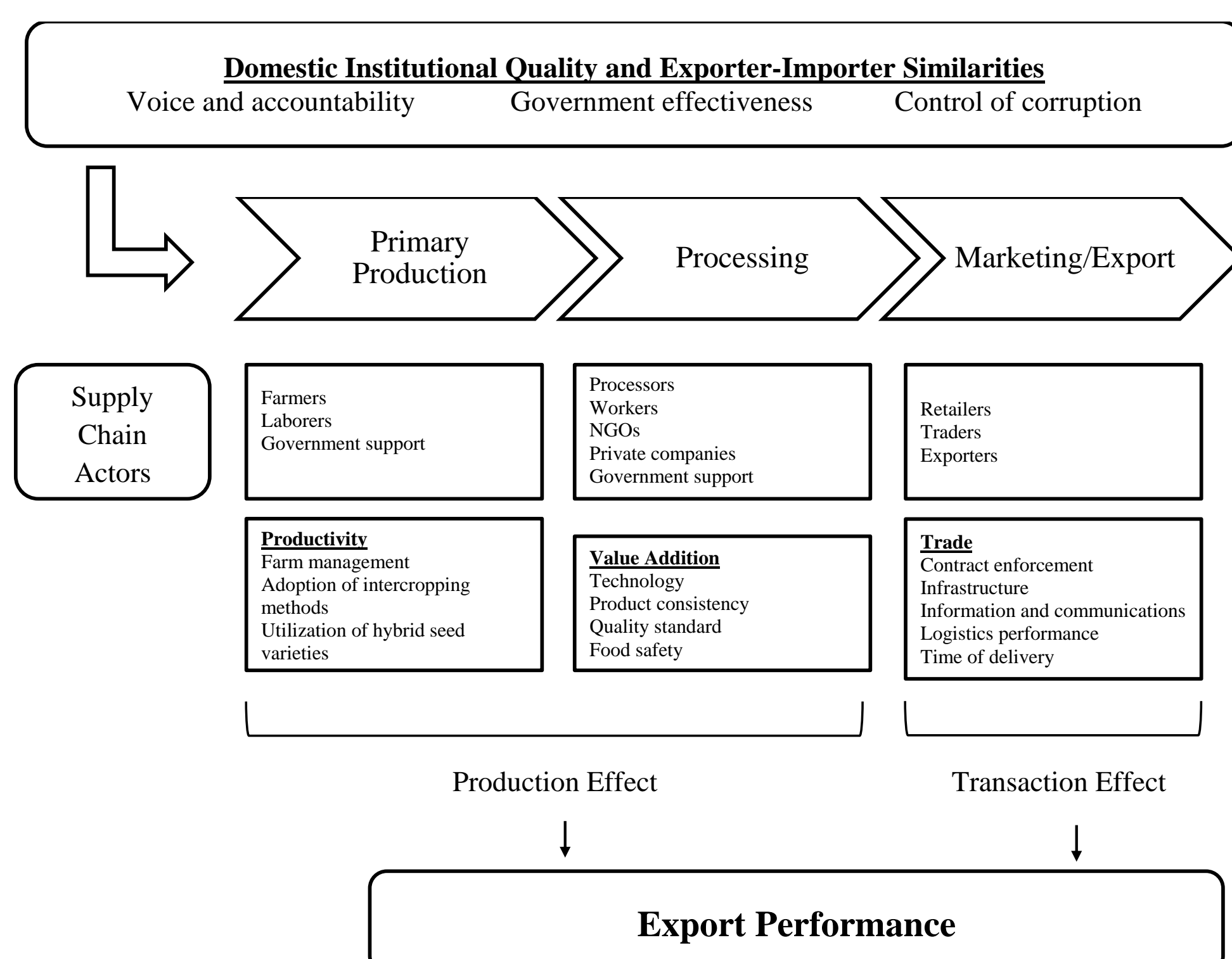
## OBJECTIVES

To assess the influence of institutions on the export performance of coconut related products from the top 26 producing countries to the top 15 coconut importing regions, considering different product categories

### Research Questions:

What kinds of institutions are relevant for trade in coconut products with different levels of value addition?  
Does institutional similarity influence bilateral trade of coconut products due to familiarization of procedures involved during trade?

## CONCEPTUAL FRAMEWORK

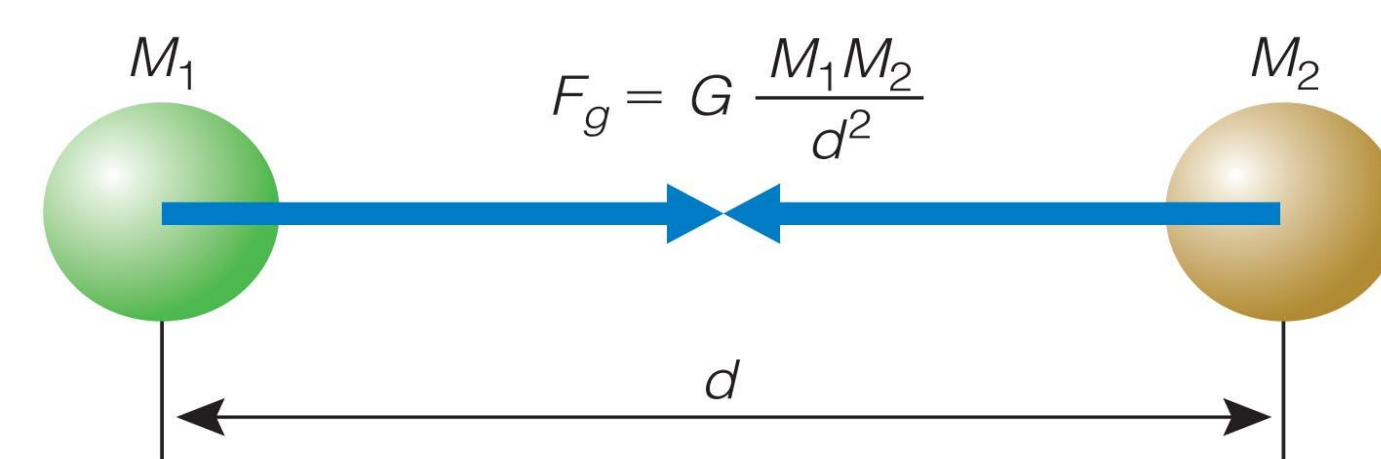


## METHODOLOGY

### The Gravity Model

- First introduced by Tinbergen (1962) to assess bilateral trade, while Anderson (2003) laid out the theoretical foundations
- In basic form considers geographic distance between countries  $i$  and  $j$  and GDPs of both countries to represent trade costs (Shepherd, 2013)

$$X_{ij} = \beta_0 + \beta_1 DIST_{ij} + \beta_2 GDP_i + \beta_3 GDP_j + \epsilon_{ij}$$



Gravity variables	Institutional variables	Fixed effects
$\ln DIST_{ij}$	$VA_i$	$\mu_j$
$\ln Production_{it}$	$GE_i$	$\nu_k$
$\ln GDP_{jt}$	$CC_i$	$\delta_t$
$LANG_{ij}$		
$RTA_{ijt}$		
$Religion_{ij}$		
$Contig_{ij}$		

where  $i$  = exporting country,  $j$  = importing country,  $k$  = coconut-product,  $t$  = year  
VA = voice and accountability, GE = gov't effectiveness, CC = corruption control

### → To address Multilateral Resistance

#### Bonus-Vetus Method

$$\ln Dist_{MTRij} = \ln Dist_{ij} - \frac{1}{N} \sum_{j=1}^N \ln Dist_{ij} - \frac{1}{2} \frac{1}{N^2} \sum_{i=1}^N \sum_{j=1}^N \ln Dist_{ij}$$

#### PPML model per coconut category (Santos Silva & Tenreyro, 2006).

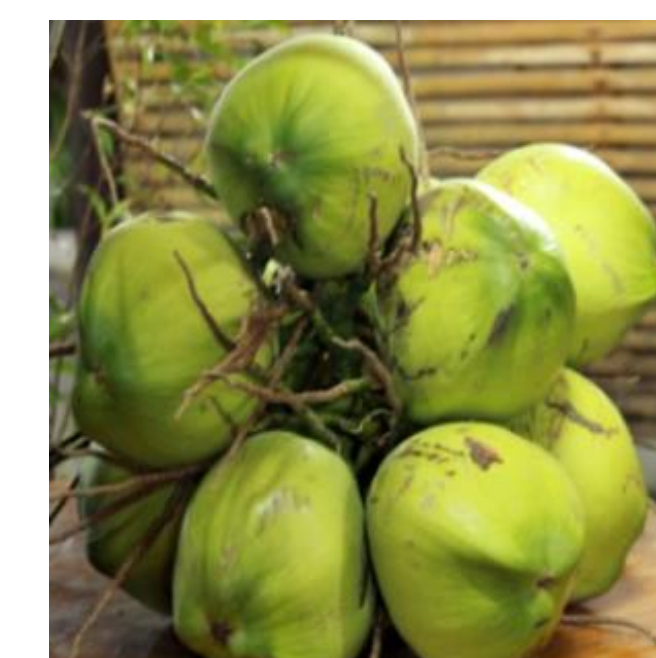
$$X_{i,j,t}^k = \exp \left[ \beta_0 + \beta_1 \ln DIST_{ij} + \beta_2 \ln Production_{it} + \beta_3 \ln GDP_{jt} + \beta_4 LANG_{ij} + \beta_5 RTA_{ijt} + \beta_6 Religion_{ij} + \beta_7 Contig_{ij} + \beta_8 VA_{it} + \beta_9 GE_{it} + \beta_{10} CC_{it} + \mu_j + \delta_t \right] \epsilon_{ijt}$$

#### PPML model for aggregated coconut sector

$$X_{i,j,t} = \exp \left[ \beta_0 + \beta_1 \ln DIST_{ij} + \beta_2 \ln Production_{it} + \beta_3 \ln GDP_{jt} + \beta_4 LANG_{ij} + \beta_5 RTA_{ijt} + \beta_6 Religion_{ij} + \beta_7 Contig_{ij} + \beta_8 VA_{it} + \beta_9 GE_{it} + \beta_{10} CC_{it} + \mu_j + \delta_t \right] \epsilon_{ijt}$$

## RESULTS

	Low-value added products		
	Copra	Coir	Oilcake
$\ln DIST$	-0.387 (0.246)	-0.129 (0.173)	-1.893*** (0.240)
$\ln GDP$	6.373*** (0.742)	1.878*** (0.411)	1.467*** (0.226)
$\ln Production$	0.590*** (0.059)	1.547*** (0.158)	2.162*** (0.147)
Contig	1.273** (0.513)	1.115*** (0.313)	-0.588 (0.384)
LANG	0.620** (0.255)	-0.652*** (0.252)	-0.641** (0.305)
RTA	0.460 (0.453)	2.678*** (0.538)	0.413 (0.278)
Religion	0.324 (0.456)	-7.736*** (0.974)	3.383* (1.778)
VAi	-0.012 (0.012)	-0.096*** (0.011)	-0.039*** (0.013)
GEi	-0.054*** (0.019)	-0.043** (0.018)	0.102*** (0.025)
CCi	-0.019* (0.011)	0.128*** (0.020)	-0.019 (0.024)
Importer FE	YES	YES	YES
Time FE	YES	YES	YES
Observations	8,085	12,206	8,085



	High-value added products			
	Coconut Oil	Milk/Water	Activated carbon	Fresh or Dried
$\ln DIST$	0.884*** (0.138)	-0.910*** (0.103)	-1.329*** (0.096)	-0.367*** (0.104)
$\ln GDP$	0.341** (0.173)	1.499*** (0.247)	1.135*** (0.092)	1.163*** (0.197)
$\ln Production$	1.435*** (0.081)	0.497*** (0.065)	1.074*** (0.071)	1.150*** (0.066)
Contig	0.570*** (0.185)	1.228*** (0.132)	-1.210*** (0.178)	0.418** (0.209)
LANG	-0.343** (0.165)	0.785*** (0.127)	-0.191 (0.238)	-0.335* (0.186)
RTA	0.378* (0.206)	-0.461*** (0.124)	-0.457*** (0.158)	0.0662 (0.183)
Religion	5.691*** (0.724)	-1.882** (0.820)	0.399 (1.092)	4.684*** (0.493)
VAi	-0.032*** (0.005)	-0.058*** (0.005)	-0.080*** (0.006)	-0.056*** (0.006)
GEi	0.096*** (0.011)	0.074*** (0.010)	0.048*** (0.008)	0.040*** (0.0108)
CCi	-0.022** (0.010)	-0.011 (0.011)	0.032*** (0.008)	-0.014 (0.009)
Importer FE	YES	YES	YES	YES
Time FE	YES	YES	YES	YES
Observations	16,170	16,170	8,085	16,170

## CONCLUSIONS AND RECOMMENDATIONS

- Institutional quality matters for trade of coconut products
- Certain indicators increase coconut trade while others decrease or yield no effect on trade
- Results are category-specific
- Government effectiveness increases exports of coconuts with higher value addition; strengthening government effectiveness can lead to a value-chain upgrade in the coconut sector
- Control of corruption increases coconut exports on an aggregate level
- Distance increases trade of coconut oil
- Each indicator measures different aspects of institutions and should not be assessed as an aggregated measure

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## Contact

Jessie Lin  
Doctoral Researcher  
GlobalFood  
University of Goettingen  
Jessie.lin@uni-goettingen.de  
Twitter: @Jessie\_\_Lin