

# **Looking for ways to characterize countries socio- politically and economically using longitudinal data**

By

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# Outline

... It is a work in progress...

- The context
- The goal
- The data
- Methods of analysis
- The results
  - ▶ **Clustering according to characteristics**
  - ▶ **Clustering according to Trust**
  - ▶ **Relationship between clusters**
- Conclusion

# The context

- We are interested in understanding change over time in institutional trust.
- Previous research (Durand et al., 2017) has shown that more than 40% of the variance between countries is explained by the region where these countries are, in our case, for now,
  - ▶ Latin America
  - ▶ West Asia and North Africa (WANA)
  - ▶ Sub-Saharan Africa
  - ▶ Asia
- Why would region be related to trust? Are there characteristics that differentiate regions and are related to trust?

# The problem

**“With your feet in a ice bucket and your head in the oven, on average you are comfortable”**

- There is much heterogeneity between countries within region in change over time in different measures of trust.
- We want to characterize countries in order to understand heterogeneity & homogeneity within and between regions.
- Not many authors could validate a relationship between socio-politico-economic indicators and trust, and certainly not a substantial one.

# The goal

- Understand differences between regions in institutional trust, taking into account change over time.
- We do not want to predict perceptions (Trust) with perceptions, but with “factual” data.
- Can we cluster countries longitudinally,
  - According to change in the countries’ characteristics?
  - According to change in trust in various institutions?

# DATA

## On trust

- A combined data base of Barometers, LAPOP and World Values Surveys.
- 756 surveys, conducted in 98 countries from 1995 to 2016,
  - ▶ In four regions: South & Central America, West Asia and North Africa (WANA), Sub-Saharan Africa, Asia.
- 1M respondents, 13M measures of trust.
  - ▶ Pertaining to 11 institutions grouped into 14 categories,
    - 4 political (State/Gvt\*, Pol. Parties, Elections, Intl Org.)
    - 4 administrative (Army, Police, judiciary, Public Adm.)
    - 4 social (Media, Religion, Trade Unions, NGO)
    - 2 economic (Banks, Private enterprises).

# Data

## On countries' characteristics

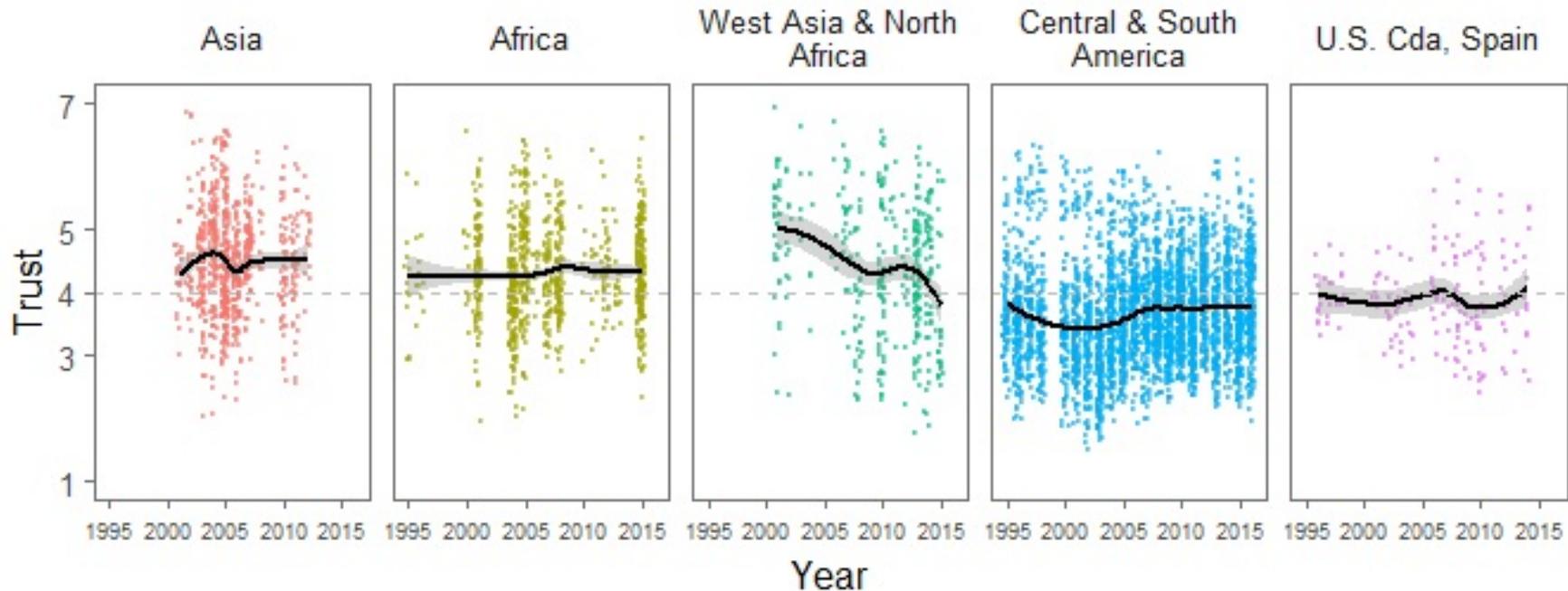
- Same countries as for trust, 1990-2016
- Economic situation:
  - ▶ LN (GDP) per capita (QOG - UN)
  - ▶ Gini:
    - Disposition and Market (SWIID)
- Social situation:
  - ▶ Proportion of urban population (QOG - UN)
  - ▶ Diversity:
    - Ethnic fractionalization (QOG -Alvesina et al.); E-GSMA
    - Religious fractionalization (QOG -Alvesina et al.)
- Political:
  - ▶ Polity2 index of democratic regime

# Methods of analysis

- We use K-means longitudinal analysis in order to cluster countries into homogenous groups
  - ▶ Based on Trust -- total institutional trust and trust in the State&Government
  - ▶ And on social, economic and political characteristics.
- Since we cannot predict the past by the future, ...
  - ▶ We use Correspondence analysis to examine whether there is a relationship between clusters of characteristics, region, and clusters of Trust.

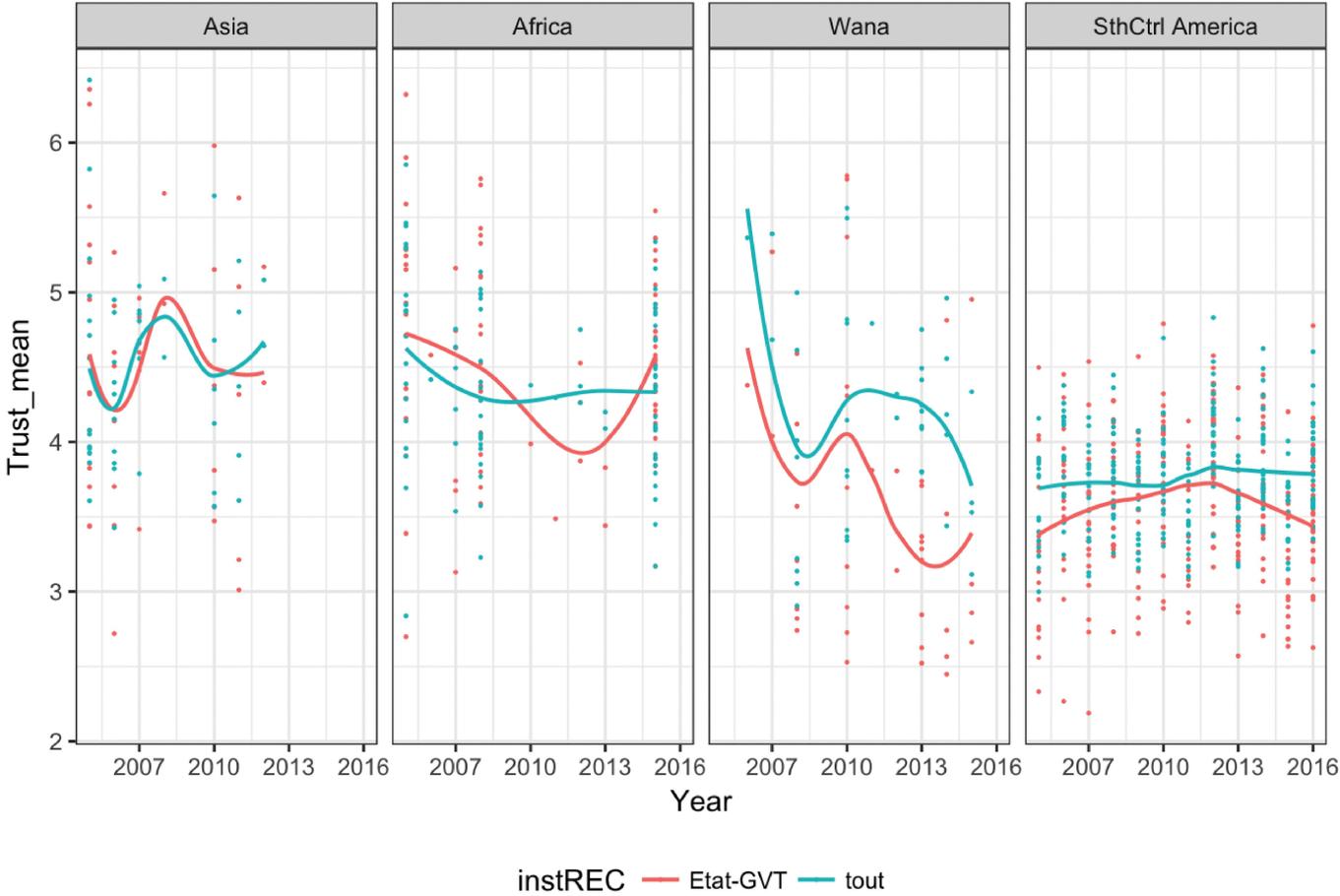
# First, Trust

Mean trust over time

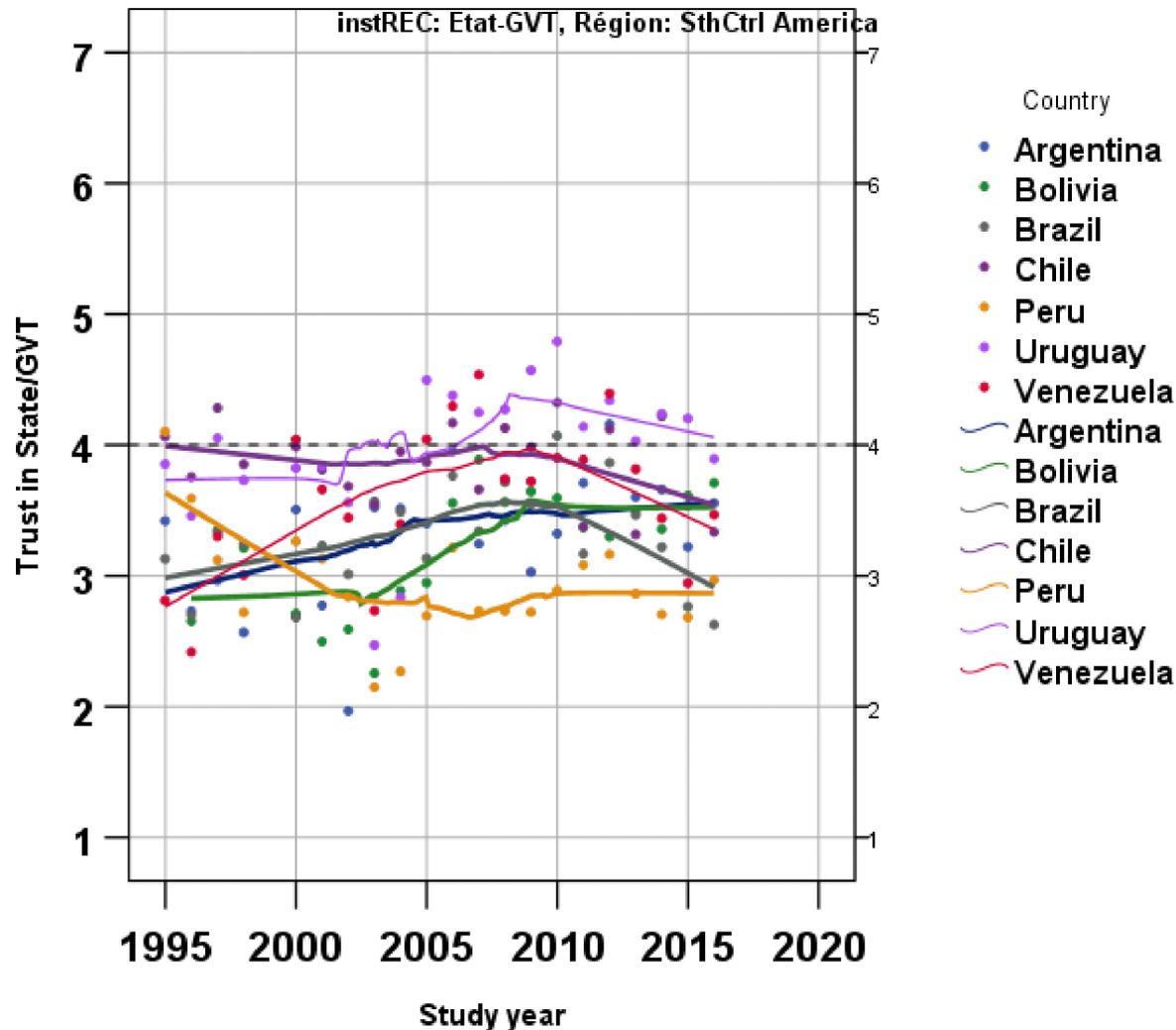


- Mean trust is stable except in the WANA region, where it is decreasing.
- On average,...

# Comparison of average trust & trust in State/Government, by region



# Trust in State-Government, Latin America, some countries



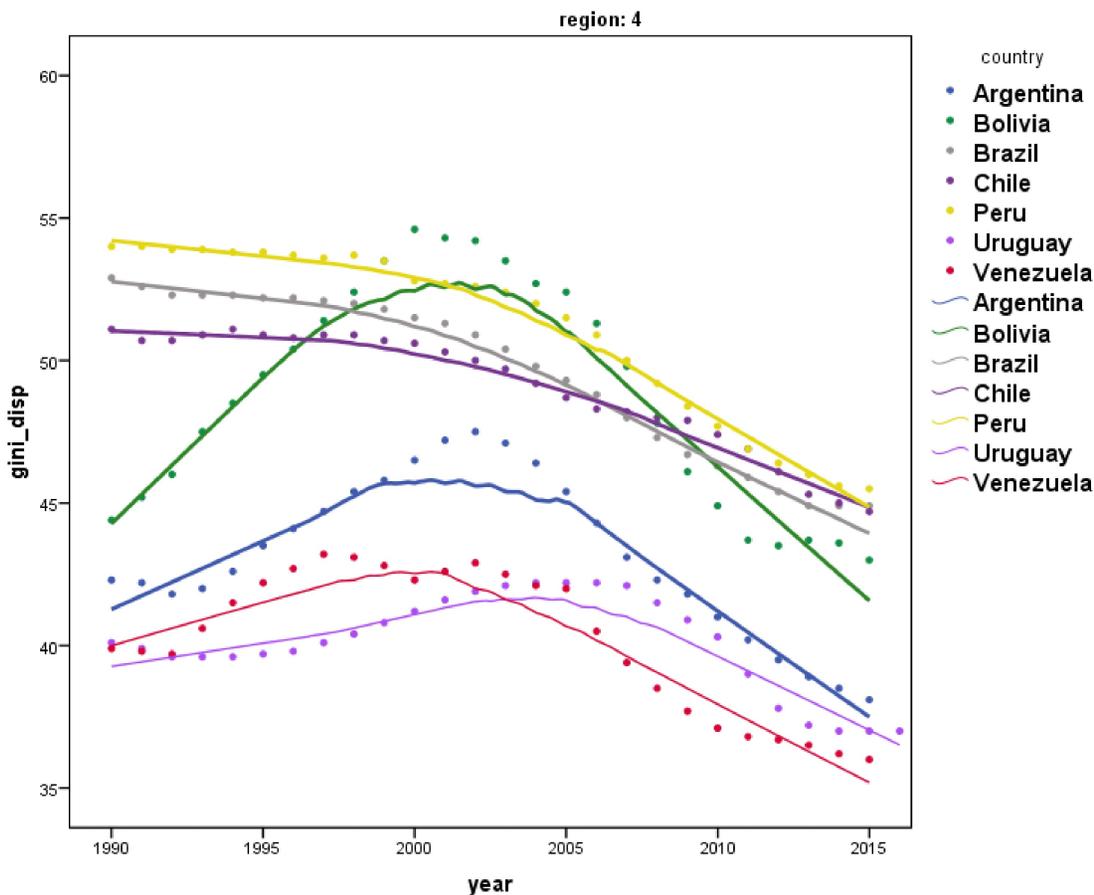
- Increases in Bolivia, Argentina
- Decreases in Peru, Chile
- Quadratic trend in Brazil & Venezuela.

# What about economic characteristics? In Latin America

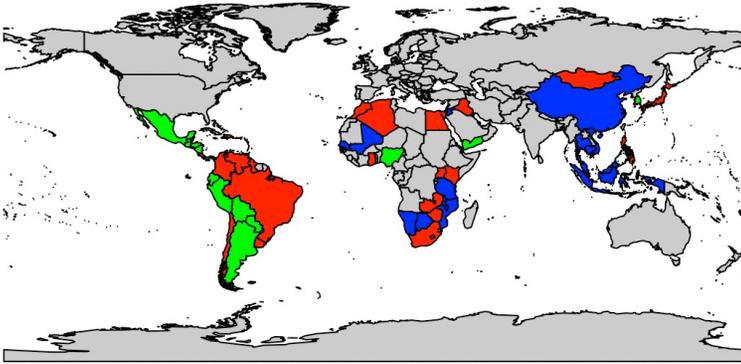
Solt GINI\_disp

■ A rise in inequalities often precedes a change of gvt: Bolivia, Venezuela, Argentina, Uruguay.

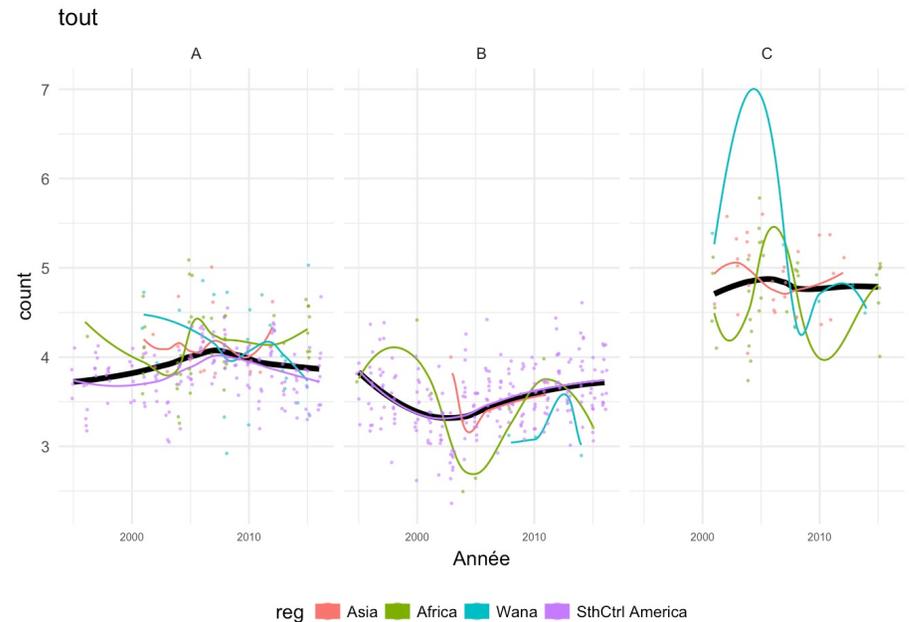
- 3 groups of trajectories:
- ▶ Argentina, Uruguay, Venezuela
  - ▶ Peru, Brazil, Chile
  - ▶ Bolivia



# Mean Institutional Trust

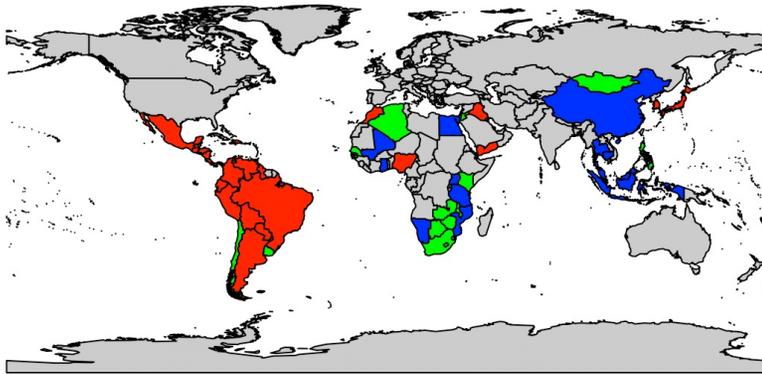


A-Rouge, B-Vert, C-Bleu

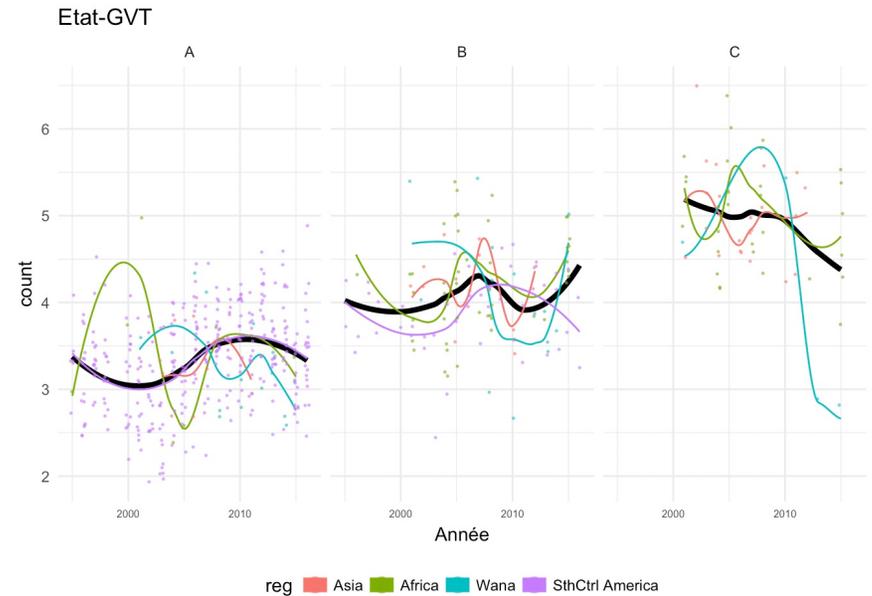


- Latin America is in the two low-trust clusters.
- Most of Asia is in the high trust cluster
- Africa & Wana: mixed.

# Trust in the State & Government



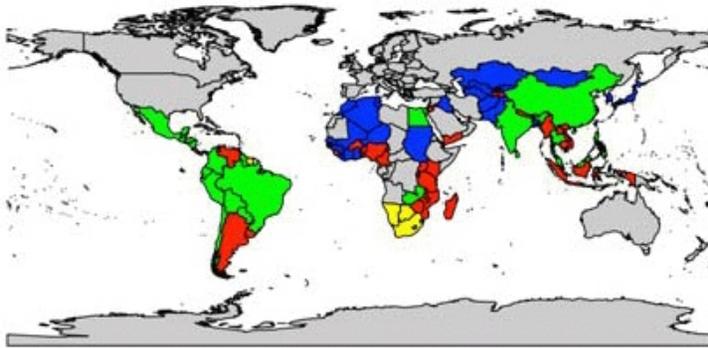
A-Rouge, B-Vert, C-Bleu



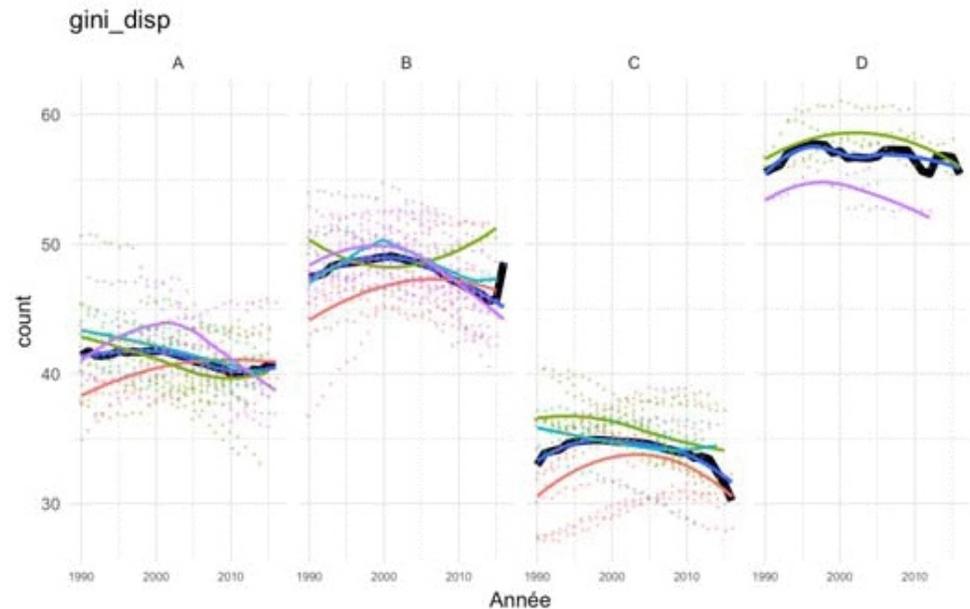
- Most of Latin America is in the low trust cluster (red)
- Most of Asia is in the high trust cluster (Blue).
- Africa & Wana are mixed.

# GINI\_disp index; level & shape

Estimate of inequality in equivalized household disposable (post-tax, post-transfer) income; the clustering takes into account the level of the index.



A-Rouge, B-Vert, C-Bleu, D-Jaune

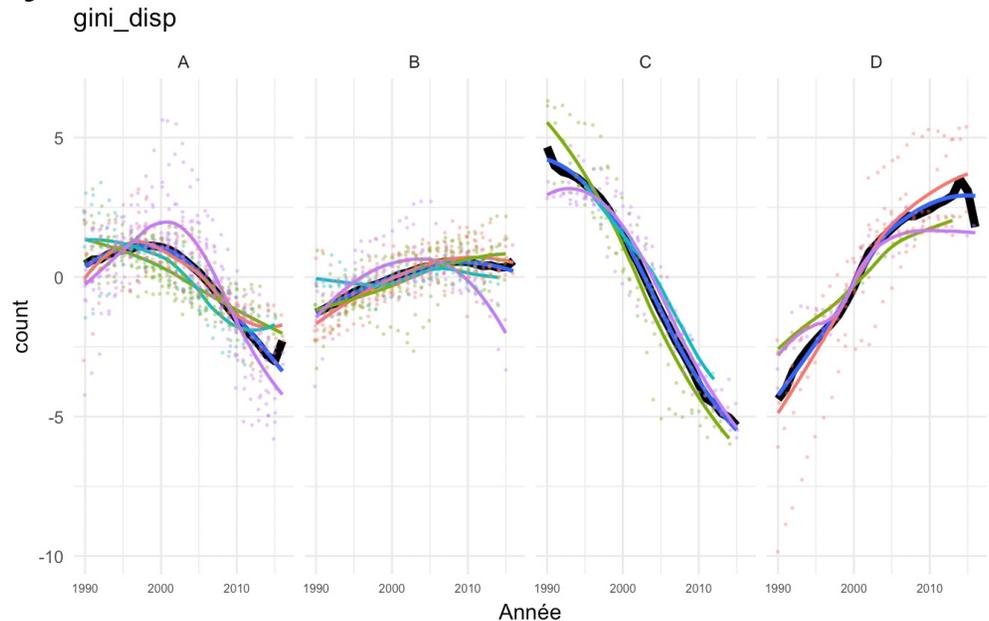
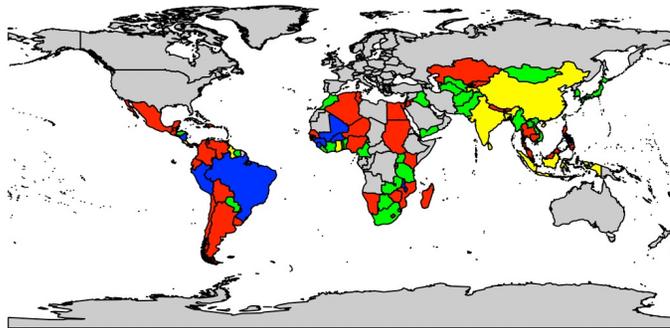


reg Asia Africa Wana SthCtrl America

- Latin America: medium level, mostly quadratic
- South Africa: high inequalities
- Wana & Asia: mixed but low inequalities countries (blue) are present in both regions.

# Gini\_disp index - shape

Estimate of inequality in equalized household disposable (post-tax, post-transfer) income; the clustering maximises the shape of change over time, independently from the level.



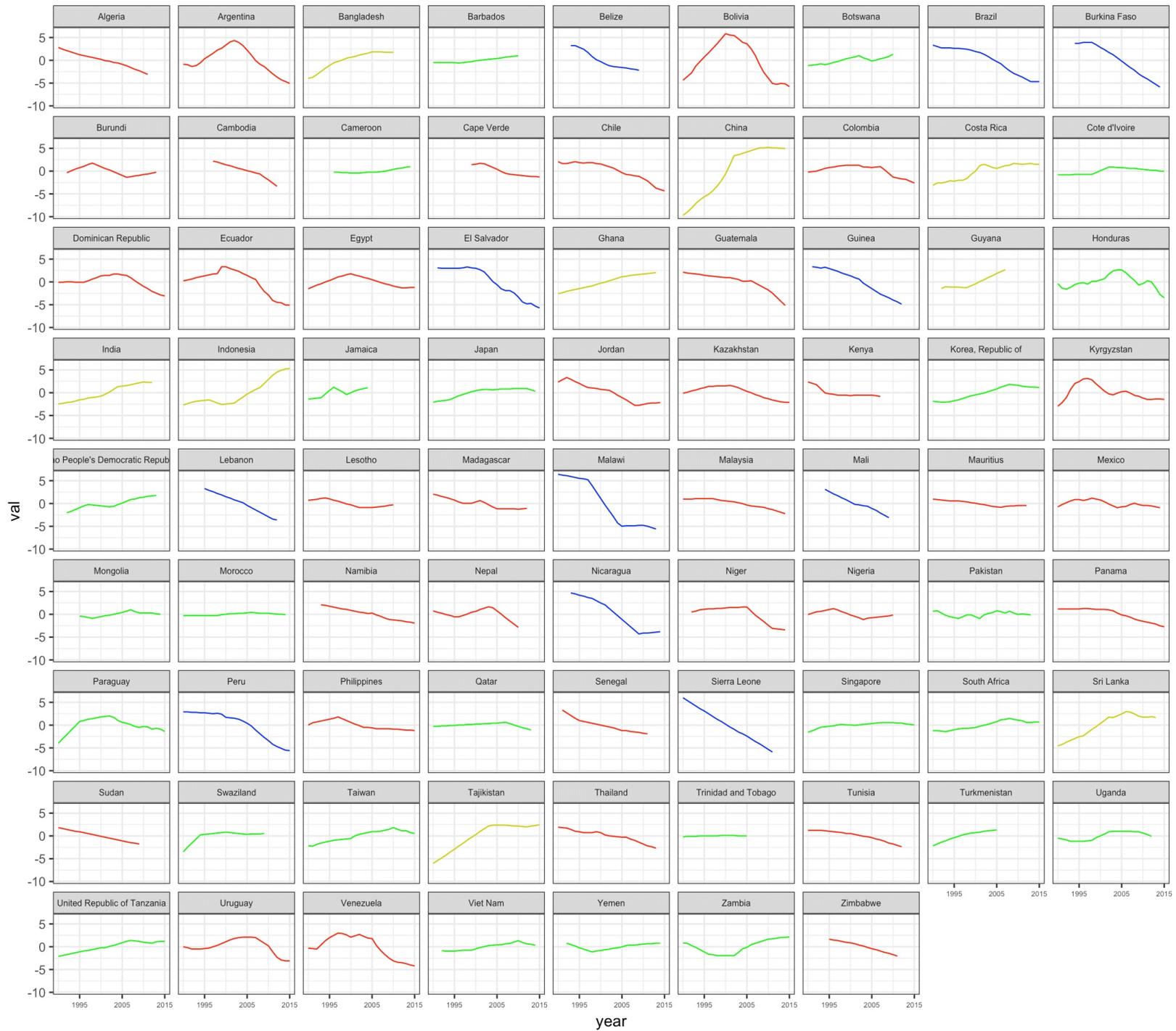
A-Rouge, B-Vert, C-Bleu, D-Jaune

reg Asia Africa Wana SthCtrl America

Latin America: Quadratic trend or decreasing (blue & red).

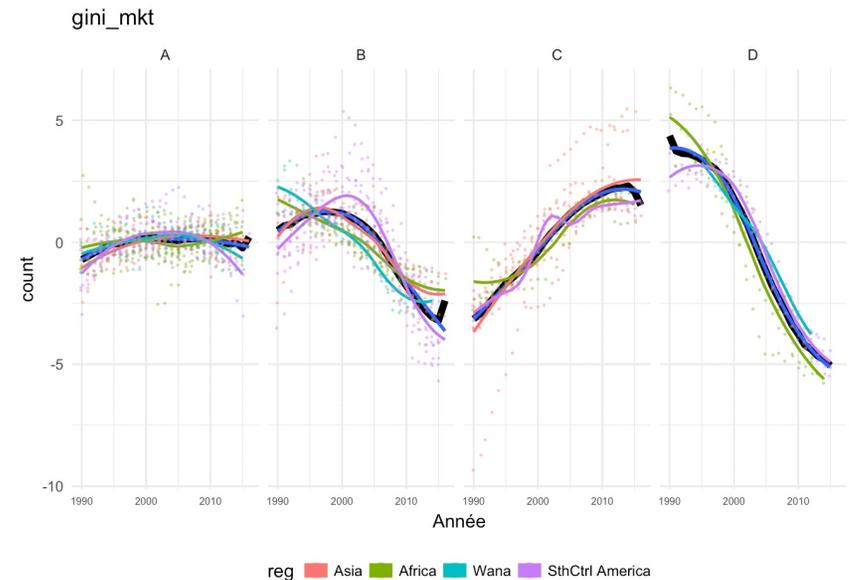
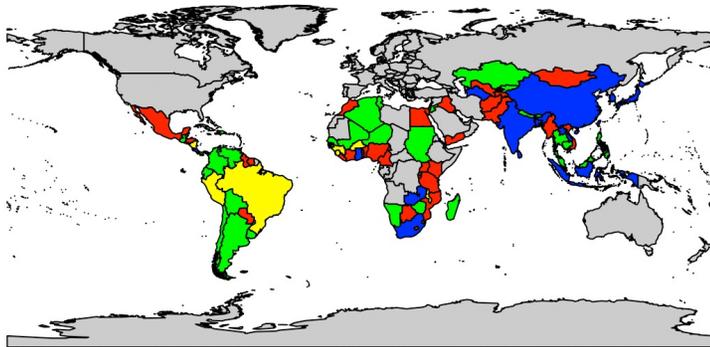
Africa & Wana: mixed, but not increasing.

Asia: mostly increasing (Yellow)



# Gini\_market index - shape

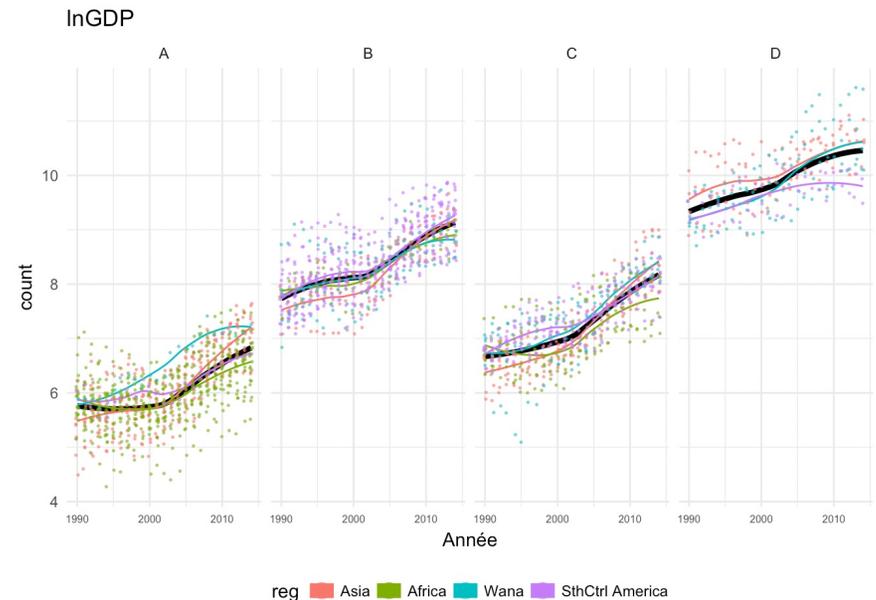
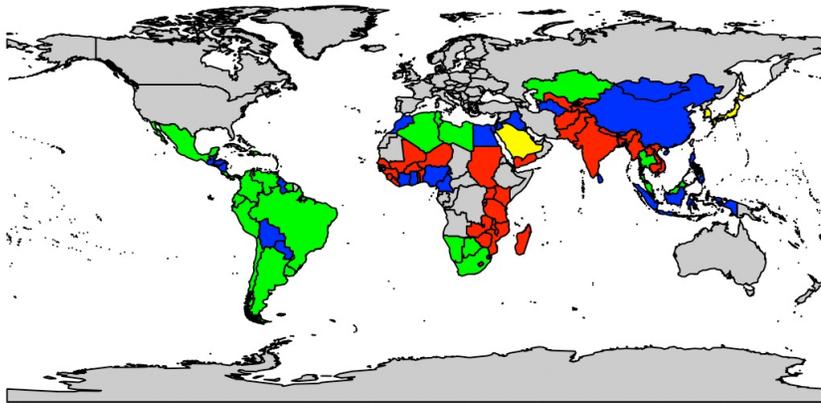
Estimate of inequality in equalized household market (pre-tax, pre-transfer) income; the clustering maximises the shape of change over time, independently from the level.



A-Rouge, B-Vert, C-Bleu, D-Jaune

- Latin America: quadratic or decreasing
- Africa & WANA: mixed.
- Asia, South Africa: Increasing.

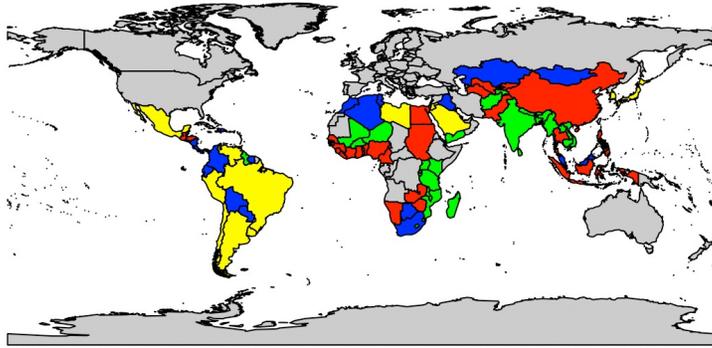
# GDP (Ln)



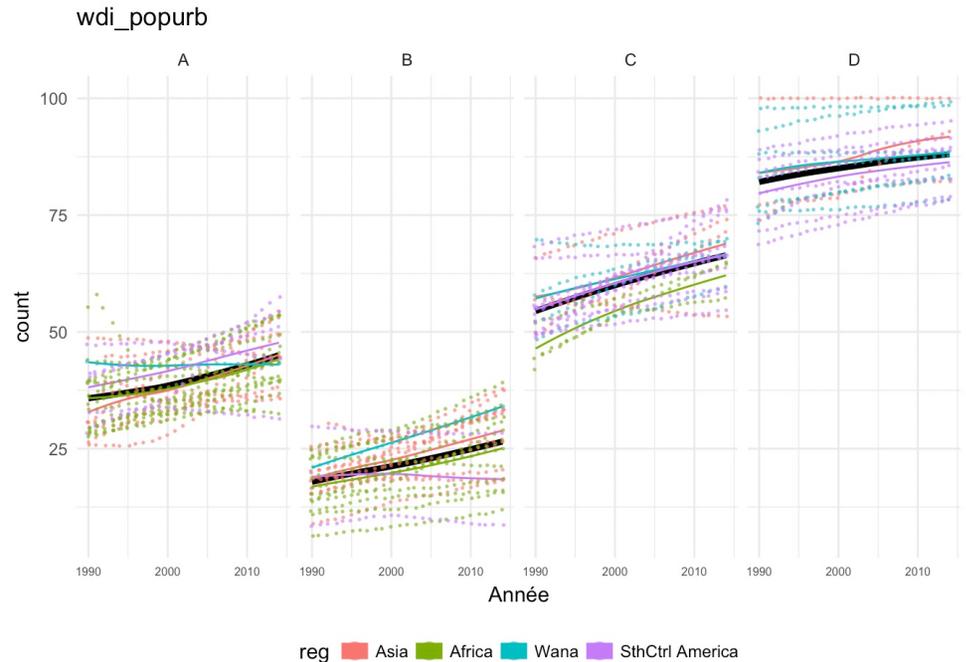
A-Rouge, B-Vert, C-Bleu, D-Jaune

- Latin America: Medium-High mostly
- Other regions: mixed;

# Urban Population

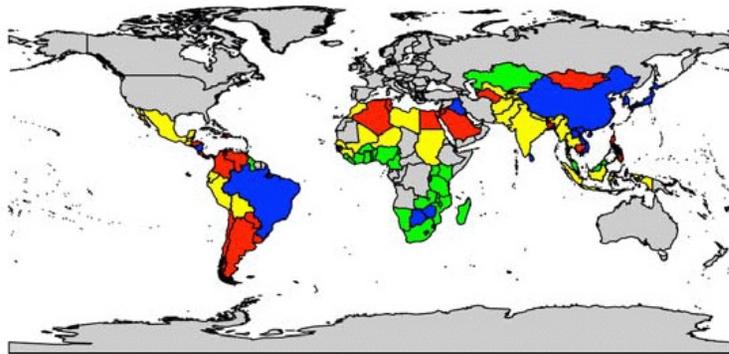


A-Rouge, B-Vert, C-Bleu, D-Jaune

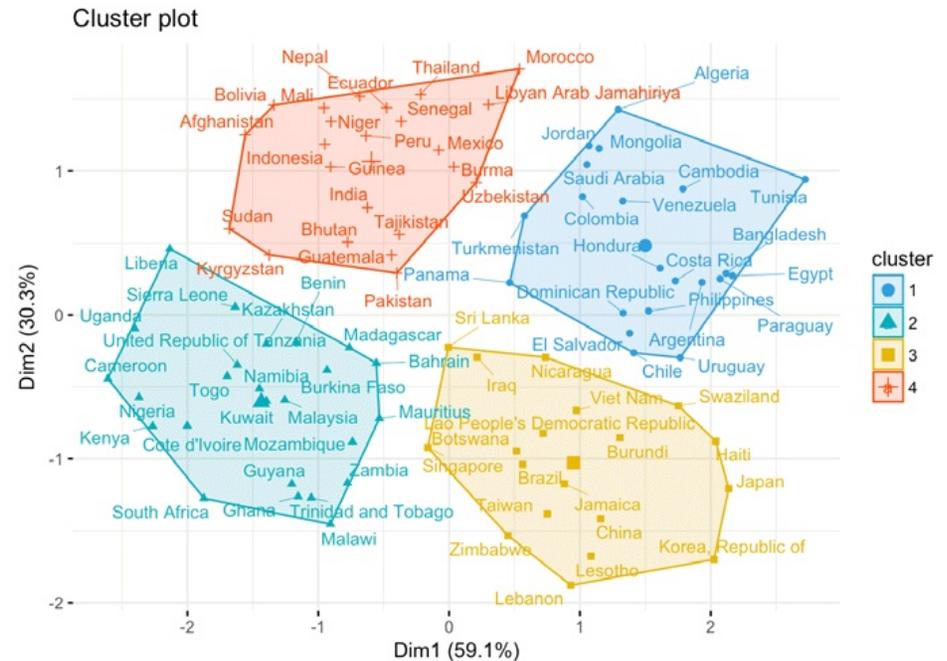


Medium-High (blue) & High (yellow) proportion of urban population characterizes Latin America

# Diversity - ethnic & religious

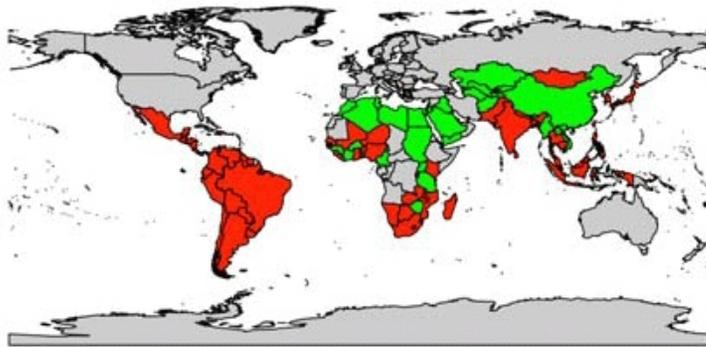


1-Rouge, 2-Vert, 3-Bleu, 4-Jaune

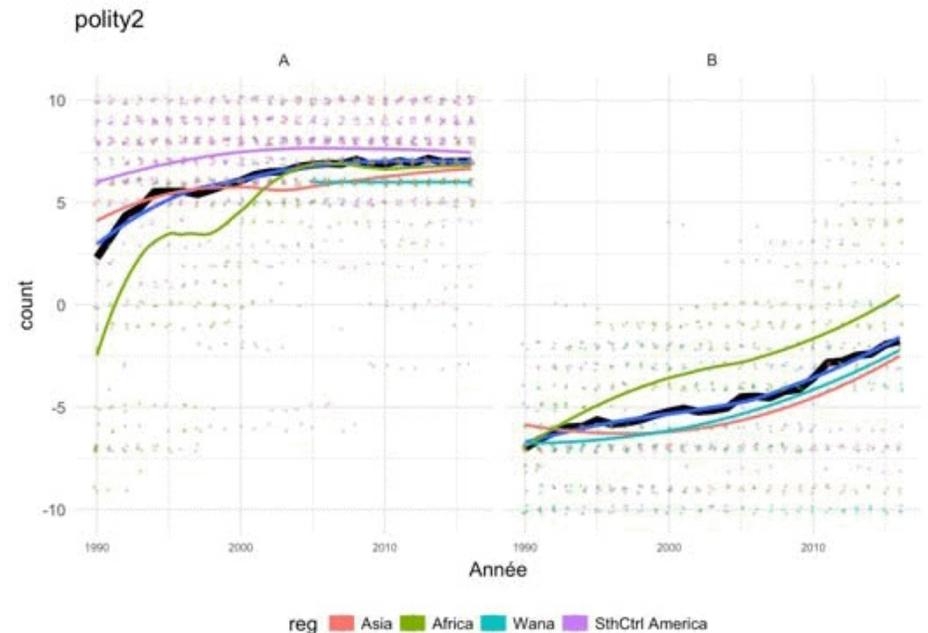


Variation within regions:  
 Red: Low diversity; Green: High diversity  
 Blue: Low ethnic, high religious  
 Yellow: High ethnic, low religious

# Polity2 (democratic Regimes)



A-Rouge, B-Vert

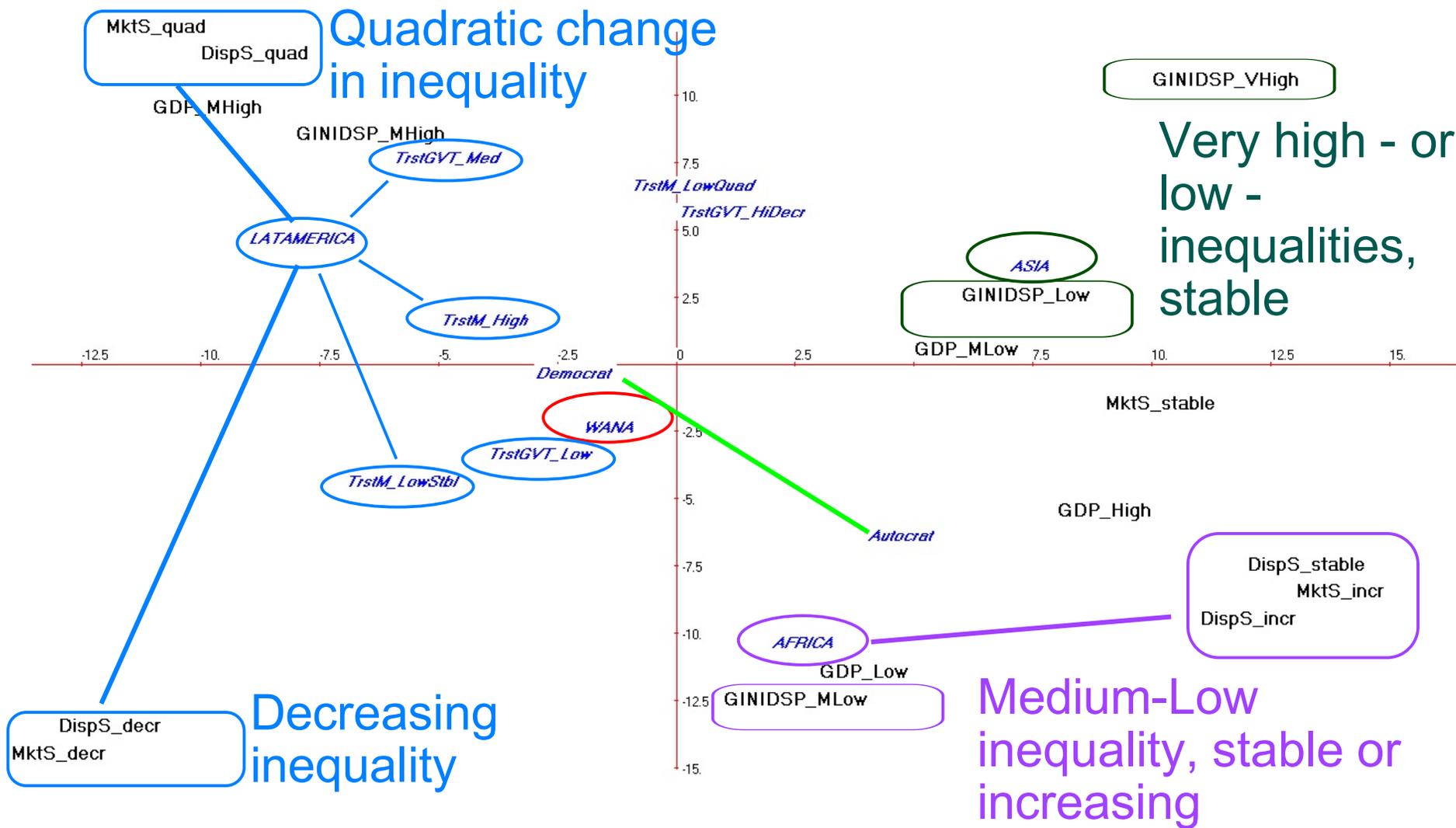


- Red: More democratic regimes characterize Latin America
- Green: More autocratic regimes characterize WANA.
- Asia & Africa are mixed.

# First conclusion

- We see that some clusters are more present in some regions:
  - ▶ For example, Latin America:
    - all in the democratic cluster,
    - most countries high urbanized and with a high  $\ln(\text{GDP})$ .
- But other analysis show clusters almost evenly distributed in different regions.
  - ▶ Diversity & Gini - shape indices, for example.

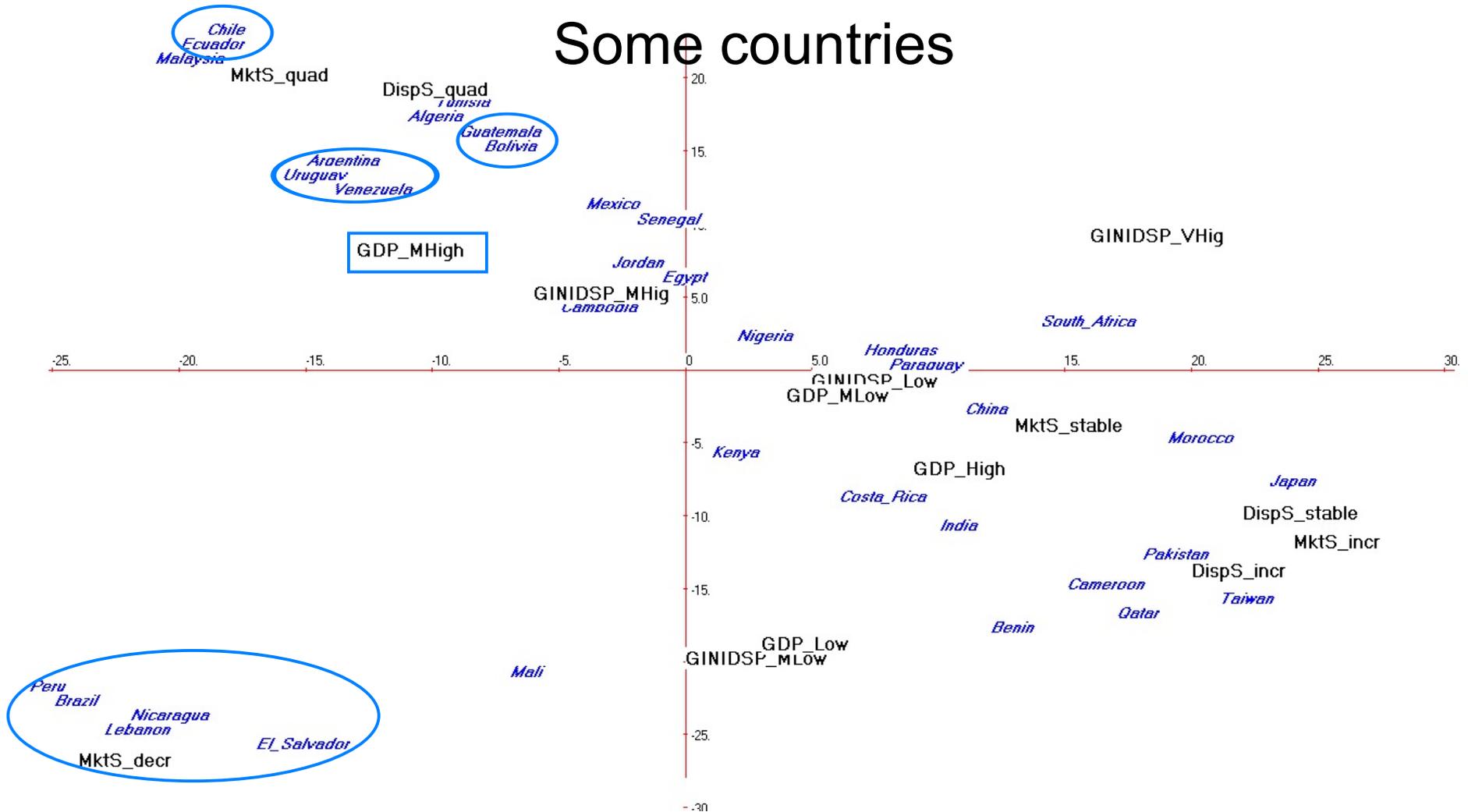
# Relationship between clusters of economic situation & clusters of trust?



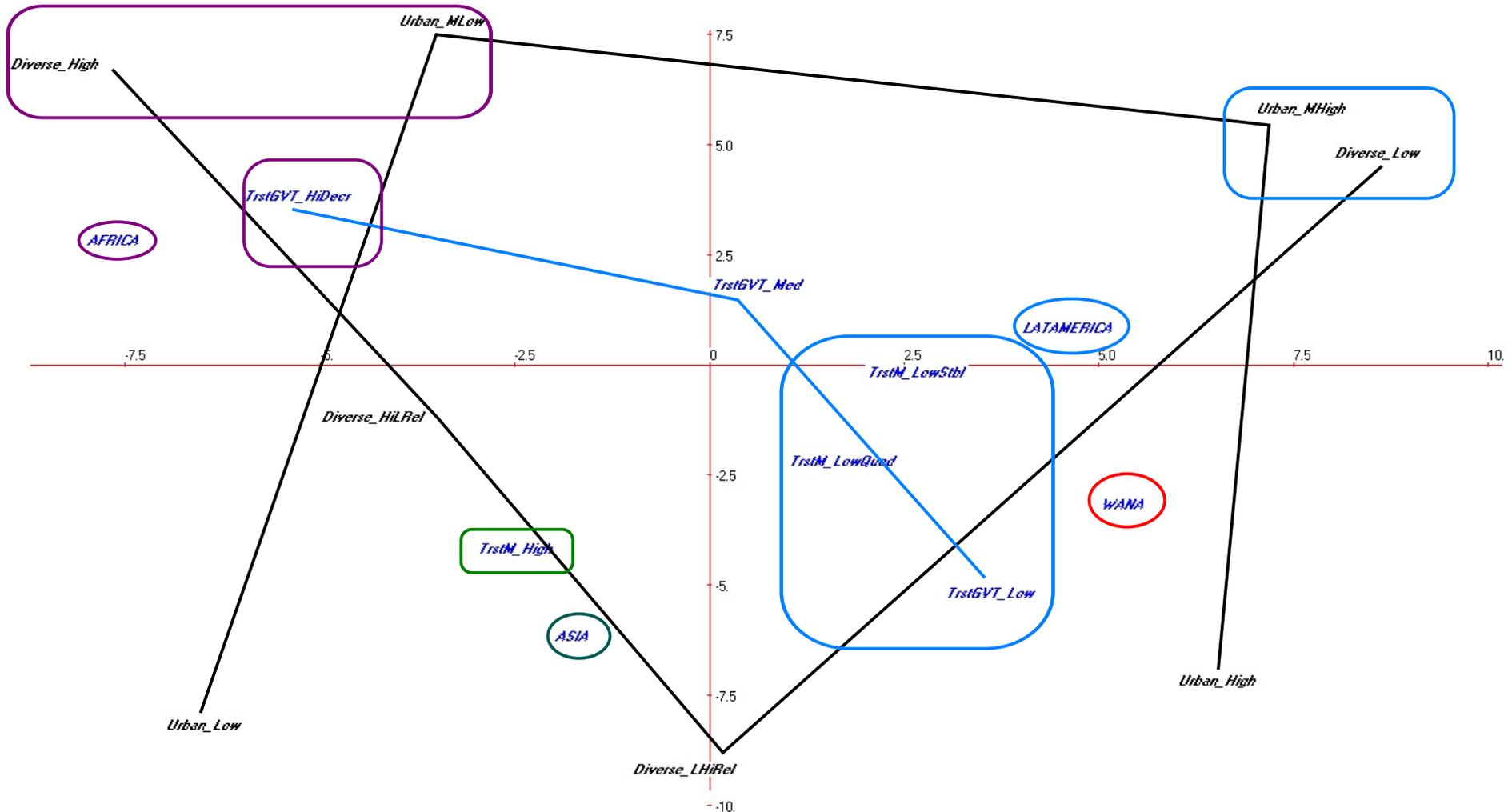
The graph shows no relationship bw trust & economic situation

# Clusters of economic situation & clusters of trust

Some countries



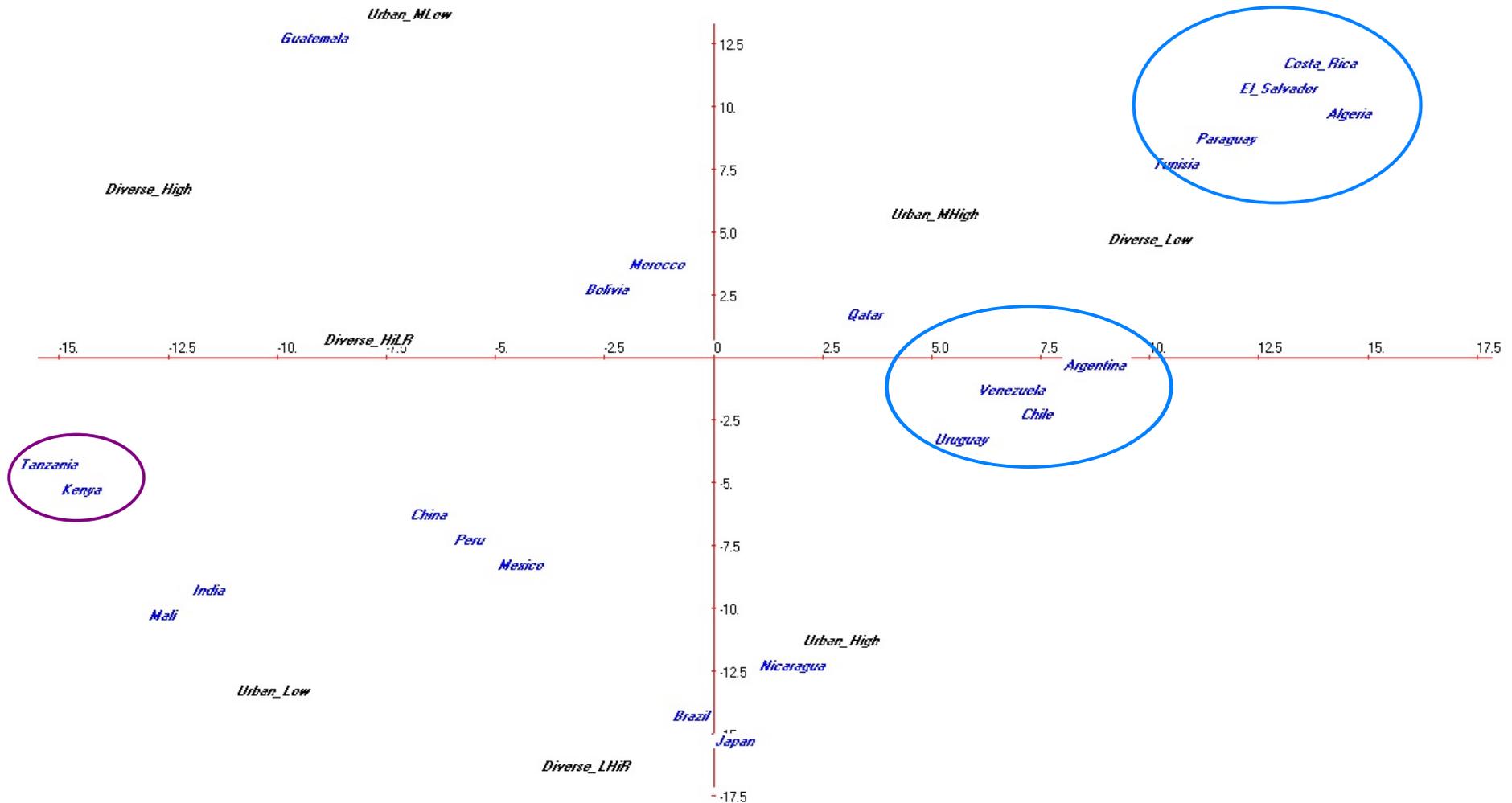
# Relationship between clusters of social situation & clusters of trust?



The graph shows low trust in Government to be associated high urban population & low diversity.

# Relationship between clusters of social situation & clusters of trust?

Some countries



# Validating using 4-level regression analysis

- Shows that:
  - ▶ Polity2 index (democratic vs autocratic regime) is related:
    - Negatively to trust in the Government & the political parties.
    - But positively to trust in the electoral process.
  - ▶ Proportion of urban population related negatively with average trust.
  - ▶ Other variables not related, including an index of change over 5 years in the gini\_disp index.
  - ▶ These variables (+ WGI\_mean) explain a similar proportion of variance that region.

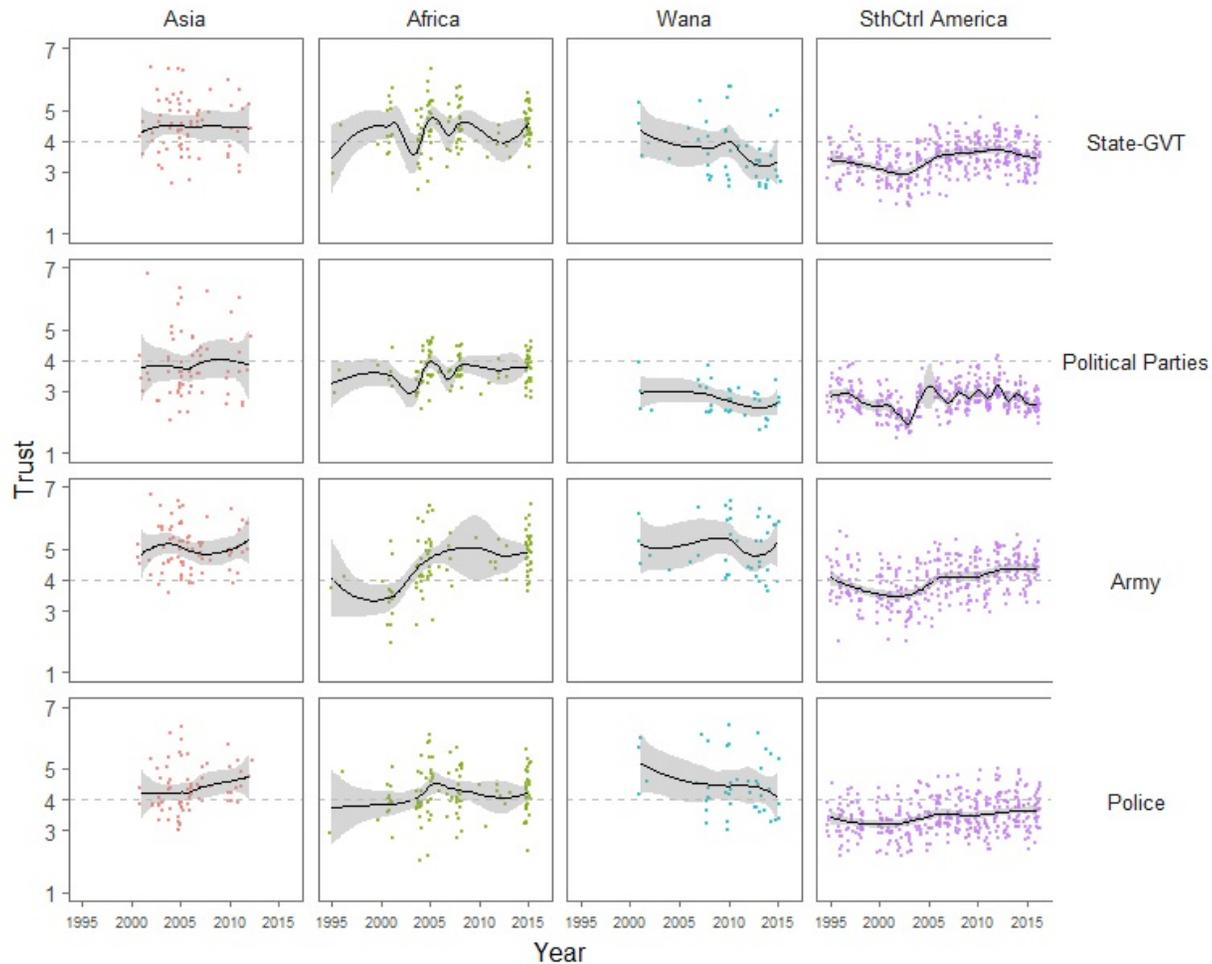
# Conclusion

- We could find variables that inform about regional differences. The interpretation of these findings is not yet obvious, however.
- Latin America is characterized by low trust, democratic regimes & a highly urbanized population.
  - Can we conclude that democracy & the proportion of urban population are associated by low trust?  
What influences what?
- In other regions, there is much heterogeneity within region in all aspects.
- Some clusters are defined by quadratic trends. This may hamper the capacity to validate relationships between some characteristics & trust.

# Next steps

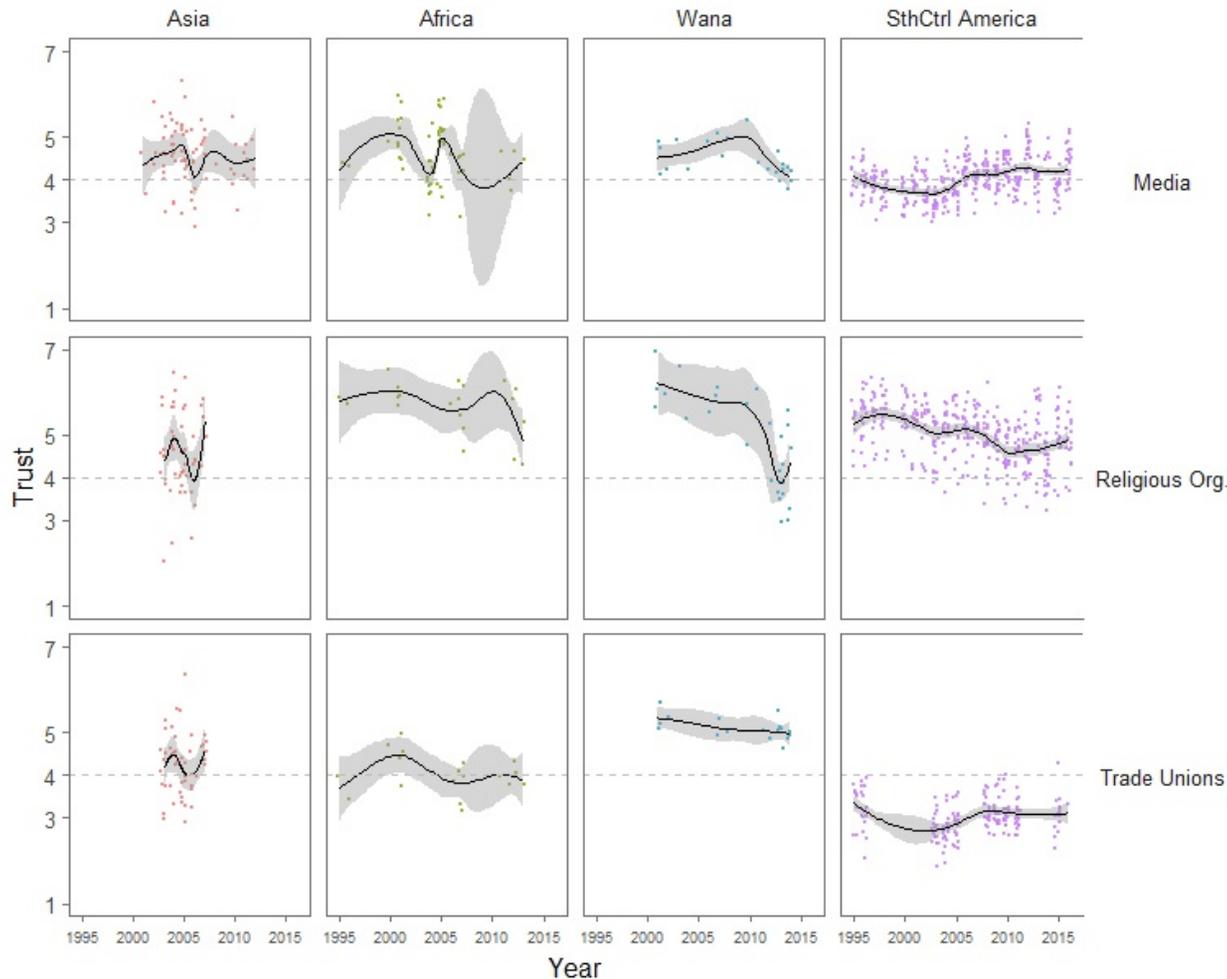
- More thorough review of the literature and selection of other indicators (V-Dem data base & World Governance indicators).
- Clustering of trust according to other institutions:
  - ▶ Elections
  - ▶ Political parties
  - ▶ Army, police
  - ▶ Trade Unions
  - ▶ Religious leaders/ the Church.

# Trust in the State/government, compared with political parties, army & police



- Trust in the state-gvt differ from mean institutional trust:
- Asia, stable;
- Africa: variable;
- Wana: declining;
- South-Central America: variable.

# An example: Trust in the Media, Religious Organizations & Trade Unions



- Trust in the state-gvt differ from mean institutional trust:
- Asia, stable;
- Africa: variable;
- Wana: declining;
- South-Central America: variable.