

THE REGULATION OF CAPITALISM AND CLIMATE REGULATION

Louison CAHEN-FOUROT

May 9th 2018

Institute for Ecological Economics — Wirtschaftsuniversität Wien

Structure of the presentation

- A primer on Regulation theory
- A few results of Regulation theory on environmental issues
- The regulation of capitalism and climate regulation

A PRIMER ON REGULATION THEORY

What does *regulation* mean ?

- In Regulation theory:
 - Set of institutions emerging from power struggles amongst antagonistic classes and embodying socio-economic compromises between them
 - Temporary stabilization and normalization of social conflicts and contradictions endogenously generated by the accumulation process

What does *regulation* means ?

- Institutionnalised compromises at the national level produce a kind of capitalism
- No institutionnalised compromise producing a kind of climate: subtropical or continental climates are not the result of class struggle (even if indirectly affected by it !)
- RT *regulation* cannot be literally translated into the sphere of climate.
- What institutionnalised compromises produce are climate policies, which will affect (but not produce) climate.

- RT: regulation means the set of institutionnalised compromises that produce and stabilize capitalism.
- Climate: climate policies emerging within the regulation of capitalism as a result of these institutionnalised compromises.

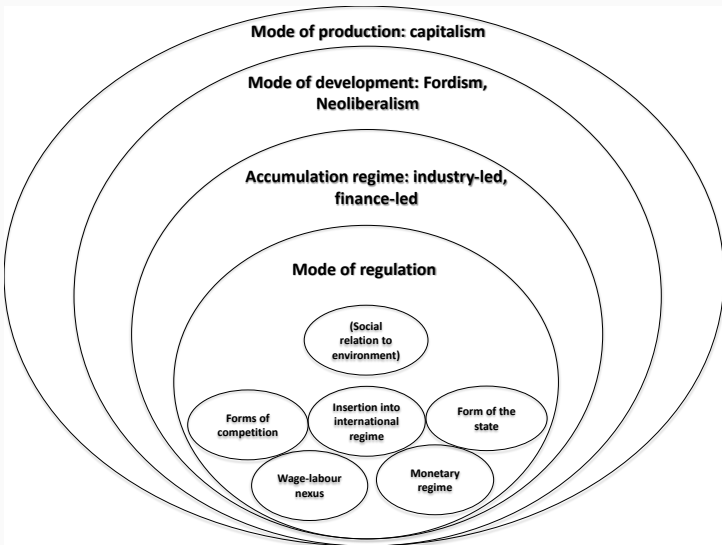


Figure 1: RT basic concepts and framework

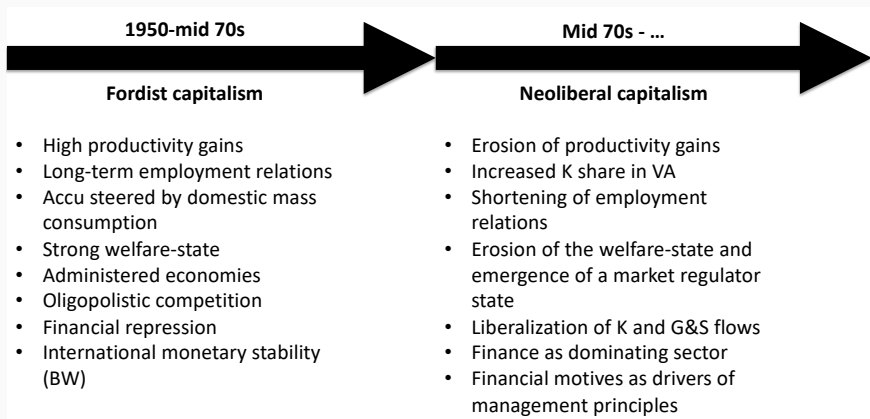


Figure 2: Diversity of capitalisms in recent times for high income countries

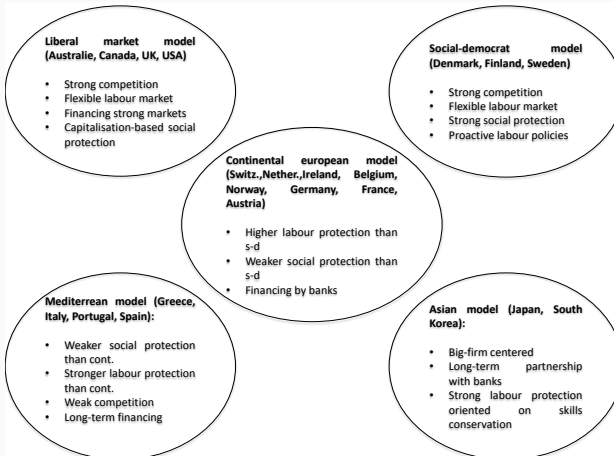


Figure 3: Diversity of capitalisms in space (Amable 2003)

A FEW RESULTS OF REGULATION THEORY ON ENVIRONMENTAL ISSUES

- Elie et al. (2012): A regulationnist approach to the diversity of environmental institutional arrangements in OECD countries
- Cahen-Fourot and Durand (2016): The transformation of the social relation to energy from the Fordism to neoliberal capitalism. A comparative empirical and macroeconomic exploration in high income countries (1950-2010)

THE DIVERSITY OF ENVIRONMENTAL ARRANGEMENTS

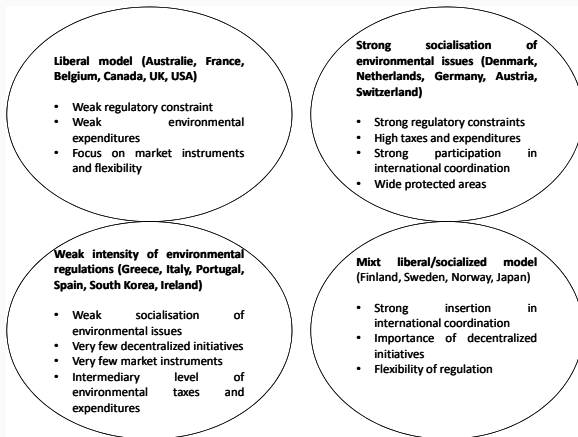


Figure 4: Diversity of environmental institutionnal arrangements in OECD countries (Elie et al. 2012)

THE SOCIAL RELATION TO ENERGY FROM FORDISM TO NEOLIBERALISM

- Characterizing the social relation to energy of Fordism and Neoliberalism in five high income countries from 1950 to 2010
- Link with socio-economic dynamics: productivity gains, labour/capital share in VA
- Mitchell (2009, 2013), Malm (2016):
 - Social relation to the environment is fully part of class relationships
 - Distribution of benefits from energy depends on the bargaining power of the workers of this energy

Energies contribute to shape political and economic regimes:

- Through the specificities of their exploitation
- Through the technostructures they produce

The oil paradox

- Allows the Fordist social compromise because of its abundance and cheap price
- Undermine the social relations of Fordism because of the specificities of its exploitation

FROM AN EXTENSIVE TO AN INTENSIVE USE OF ENERGY: EXERGY QUANTITY

| | Fordism | | Néolibéralism | |
|------------------------------|-----------|-----------|---------------|-----------|
| | 1950-1960 | 1960-1974 | 1974-2000 | 2000-2009 |
| Germany | | 5,11 | -0,22 | -0,5 |
| France | | 5,02 | 0,61 | 0,06 |
| Japan | 6,01 | 6,64 | 2,18 | |
| U. Kingdom (Ayres et Warr) | 2,77 | 2,19 | 0,13 | |
| U. Kingdom (Serrenho et al.) | | 1,16 | 0,36 | -1,18 |
| United States | 2,18 | 3,50 | 1,20 | |
| Mean | 3,65 | 3,94 | 0,71 | -0,54 |

Figure 5: Average annual growth of exergy quantity. Sources: authors from Ayres and Warr (2005) for USA, Japan and UK between 1950 and 2000 ; Serrenho et al. (2014) for France, Germany and UK between 1960 and 2009.

FROM AN EXTENSIVE TO AN INTENSIVE USE OF ENERGY: PRODUCTIVITY OF *USEFUL WORK*

| | Fordism | | Néolibéralism | |
|------------------------------|-----------|-----------|---------------|-----------|
| | 1950-1960 | 1960-1974 | 1974-2000 | 2000-2009 |
| Germany | | -1,30 | 2,30 | 0,72 |
| France | | 0,17 | 1,18 | 1,02 |
| Japan | -2,7 | 0,14 | 1,10 | |
| U. Kingdom (Ayres et Warr) | -2,28 | -1,08 | 1,16 | |
| U. Kingdom (Serrenho et al.) | | 0,79 | 1,61 | 2,71 |
| United States | -0,77 | -1,60 | 1,77 | |
| Mean | -1,92 | -0,48 | 1,52 | 1,48 |

Figure 6: Average annual growth of *useful work* productivity. Sources : authors from Ayres et Warr (2005), Serrenho et al. (2014) and Total Economy Database (PIB).

| | 1970 | 2010 |
|-------------------|--------|-------|
| Germany | -3,69 | 6,14 |
| France | 1,27 | 30,56 |
| Japan | -30,97 | 16,17 |
| U. Kingdom | -0,12 | 31,39 |
| U. States | -1,98 | 12,09 |
| Mean | -7,10 | 19,27 |

Figure 7: Share of imported CO2 in total emissions. Sources : authors from Eora Input-Output Database.

THE SOCIAL RELATION TO ENERGY FROM FORDISM TO NEOLIBERALISM

- Fordism
 - Extensive use of energy and intensive use of labour
 - Fast increase in energy quantity integrated into the production process
 - Supported high productivity gains at the core of the fordist social compromise
- Neoliberalism
 - Intensification and increasing relocation of energy use
 - Slowing down of productivity gains
 - Erosion of the fordist social compromise and restoration of the K share

THE REGULATION OF CAPITALISM AND CLIMATE REGULATION

- Paris agreement: success lies in the ability/williness of countries to improve their commitment every 5 years
- Crucial to understand the socio-economic context into which carbon mitigation ambitions arise
- For biodiversity Boisvert and Vivien (2012) and Görg and Brand (2000) have shown that:
 - Regulation is the product of antagonistic interests and associated power relations within national and international institutions
 - Depend on the structural forms of capitalist reproduction

- In economics: IEA as games between homogeneous rational actors following strategic behaviours
- Carbon mitigation ambitions might be the organic product of historically and spatially located economic and political characteristics
- Necessary to comprehend the emergence of new global climate regulations in the historical context of contemporary globalized finance-led capitalism

- Ecological economics lacks a systematic economic system approach but provides an analytical framework of the environmental dynamics...
- ... Regulation theory lacks consideration for the environment but provides an analytical framework of the historical and spatial diversity of capitalist systems

Objective is twofold:

1. Discussing the theoretical place of the environment in RT: sixth form or no sixth form ?
2. Analyzing carbon mitigation objectives in the context of national modes of regulation of capitalism and of their coexistence within global capitalism: 38 OECD and BRICS countries

6th FORM OR NO 6th ?

- The relation to the environment is not specific to capitalism: any kind of society has a relation to the environment
- Brand and Görg (2008) and Zuindeau (2007): In capitalism, the relation to the environment take a peculiar form because nature is commodified and treated as a form of capital.
- Chester (2010) and Zuindeau (2007): A specific form of the social relation to the environment within capitalism is defined and shaped by the mode of regulation
- Is this relation a institutional form of the mode of regulation in itself or is it encompassed into the five other forms ?

Two positions

1. Becker and Raza (2000) and Cahen-Fourot and Durand (2016): The social relation to nature is a sixth, autonomous, institutional form
 - Socio-technical, cultural and legal apparatus organizing the availability and the demand for natural resources
 - Encompasses codified interactions between humanity and nature
 - Encompasses the effective modalities of these interactions
 - Encompasses the socio-political conflicts and regularities they produce and the way they distort socio-political regulations of accumulation regimes

2. Boyer (2015) and Chester (2010): no autonomous sixth form

- The mode of regulation as a whole is a relation to the environment, no institutional form peculiar to the environment
- Institutional compromises regarding the environment are the projection on the space of the economy-environment relationships of the five institutional forms

- These two polarized positions are not mutually exclusive and should rather be seen in a complementary way
- The five structural forms of RT are likely to influence the economy-environment relationship as is their combination into the mode of regulation

- Assumption: we currently experience an autonomization process of the social relation to the environment
- Ecological issues become more pressing:
 - Existing institutions progressively unable to normalize increasing ecological conflicts...
 - ... and to embody satisfying compromises regarding the access to and the distribution of environmental cost and benefits.
- i.e. no social demand for climate policies before the effects of climate change started to be felt or known (Rousseau and Zuindeau 2007)

- O'Connor (1988): *"As labor exploitation (...) engendered a labor movement which during particular times and places turned itself into a "social barrier" to capital, nature exploitation (...) engenders an environmental movement (...) which may also constitute a "social barrier" to capital."* (p. 27)

- The social relation to the environment is not *fully* embedded into the five structural forms anymore...
- ... and is not *only* the projection of the latter on the space of the economy-environment relationships anymore.
- It is becoming a structural form in itself and is increasingly shaping the modes of regulation and accumulation regimes in combination with the other forms
- 6th form to be taken into account in the empirical analysis

The regulation of climate:

- National level: organic product of the regulation of capitalism as the expression of institutionnalised compromises between social classes and groups — including ecological issues
- Global level: institutionnalised compromised between the modes of regulation coexisting within global capitalism

Methodology

- Analysis located at the level of the mode of regulation
- Characterizing the modes of regulation of capitalism through their six structural forms
- Comparing with carbon mitigation ambitions (INDCs for COP21)

Sample and data

- Sample: Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Rep, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, India, Ireland, Israel, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Russia, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Turkey, UK, US
- 2015 data (or most recent before)

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

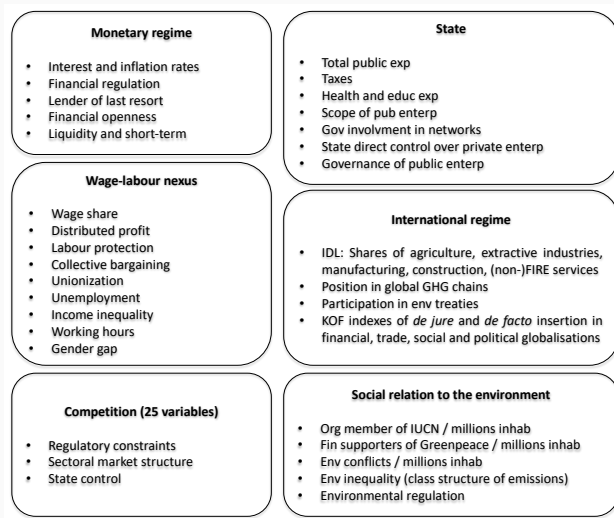


Figure 8: Variables for each institutional forms

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

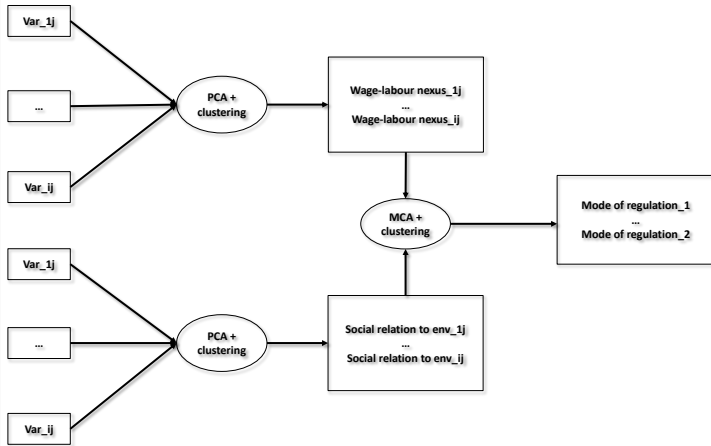


Figure 9: Statistical methods employed: Principal Components Analysis, Multiple Correspondence Analysis and Hierarchical Clustering

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

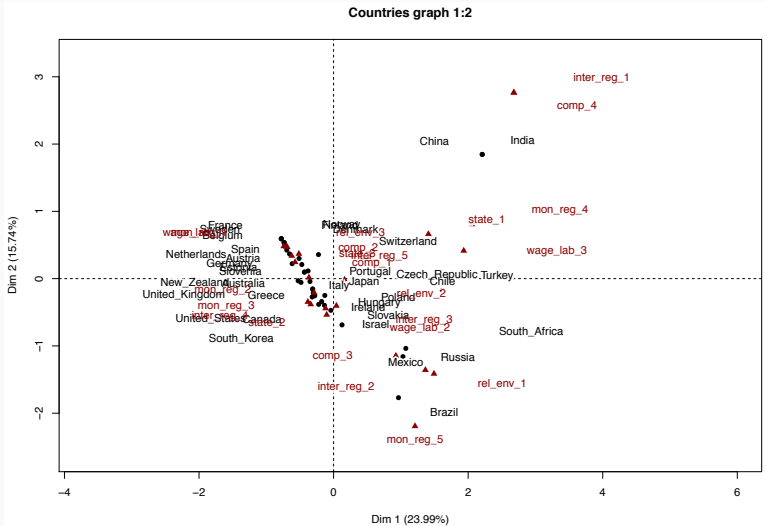


Figure 10: Results of the MCA with India and China

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

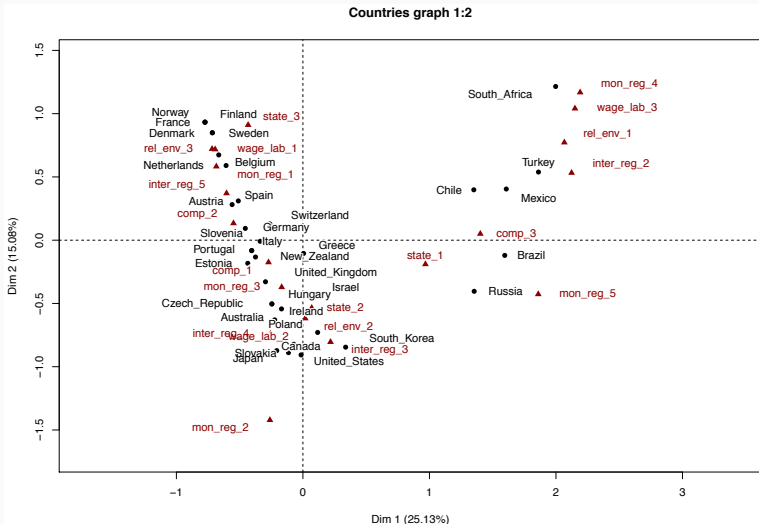


Figure 11: Results of the MCA without India and China

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

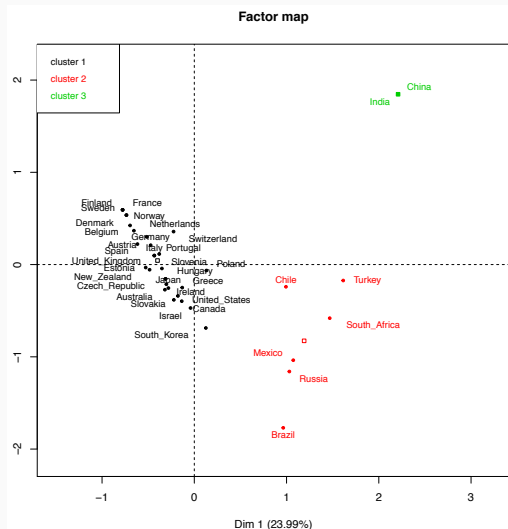


Figure 12: Results of the classification with India and China

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

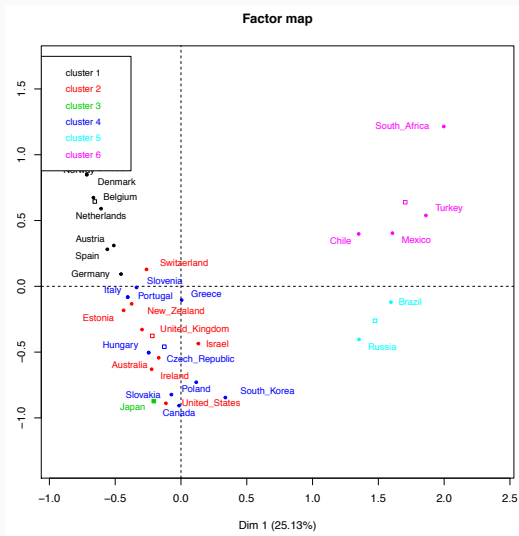


Figure 13: Results of the MCA classification without India and China

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

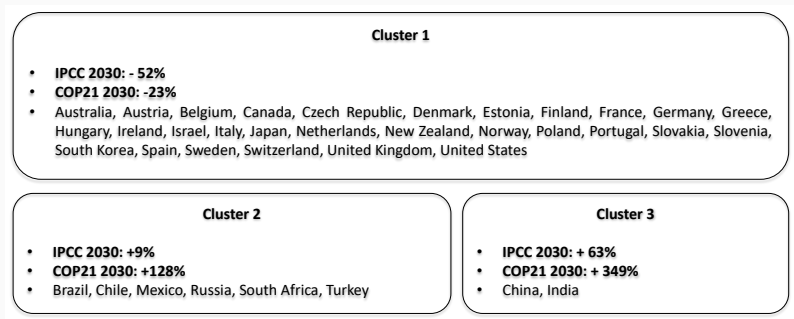


Figure 14: Clusters with China and India

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

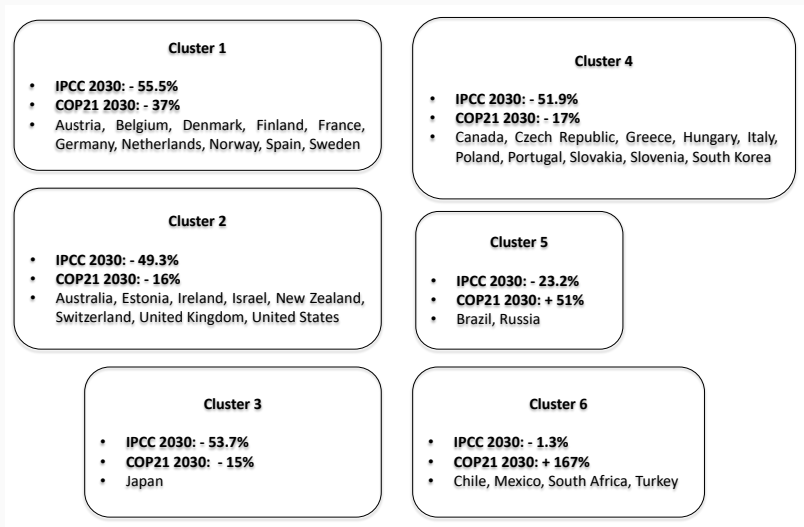


Figure 15: Clusters without China and India

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

| Full sample | | | |
|-------------|--------------|---------------|---|
| Cluster | IPCC by 2030 | COP21 by 2030 | Mode of regulation |
| 1 | -52% | -23% | Stronger insertion in all globalisations and end-of-pipe location in IDL (net importers of GHG). Competitive markets and limitation of the role of the state. Stable monetary regime less liquid and short-term oriented. More equal and labour-oriented wage-labor nexus. Stronger political demand for environmental quality (existence of a dominating social bloc supporting environmental policies [?]). |
| 2 | 9% | 128% | Insertion in the international regime oriented towards primary products. Higher environmental inequalities and weaker environmental protection. Oligopolistic competition or monopoly. More unequal and less labour-oriented wage-labor nexus. Monetary regime prone to instability. |
| 3 | 63% | 349% | Beginning of global value chains. Strong state control on the market and in the provision of goods and services but not a welfare state. Monetary regime prone to instability. More unequal and less labour-oriented wage-labor nexus. |

Figure 16: Modes of regulation with China and India

THE REGULATION OF CLIMATE: A PRODUCT OF CAPITALISM REGULATION

| Without outliers | | | |
|------------------|--------------|---------------|---|
| Cluster | IPCC by 2030 | COP21 by 2030 | Mode of regulation |
| 1 | -55.5% | -37% | More equal and labour-oriented wage-labor nexus. Stronger insertion in all globalisations and end-of-pipe position in IDL (net importers of GHG). Stronger political demand for environmental quality (existence of a dominating social bloc supporting environmental policies [?]). Welfare-state type of public intervention. Stable and financialized monetary regime. |
| 2 | -49.3% | -16% | Weaker insertion into political globalization. Wage-labour nexus organized around flexibility and weaker workers rights. Atomistic competition |
| 3 | -53.7% | -15% | Very important role of the central bank to stabilise the monetary regime. |
| 4 | -51.9% | -17% | Weak environmentalism (weak political demand for environmental policies [?]). Stable monetary regime less liquidity and short-term oriented. Insertion in the international regime through extractive activities. Competitive markets and limitation of the role fo the state. |
| 5 | -23.2% | +51% | Monetary regime prone to instability. Insertion in the international regime oriented through primary products. Oligopolistic competition or monopoly. |
| 6 | -1.3% | +167% | More unequal and less labour-oriented wage-labour nexus. Monetary regime prone to instability |

Figure 17: Modes of regulation without China and India

DISCUSSION

Most ambitious countries for emissions mitigation:

- Regulation more favourable to labour
- Regulation more favourable to the environment
- Lipietz hypothesis still holds (?): wage-labour nexus and climate regulation partly overlap
 - Countries with a more labour-oriented regulation have the humans means to improve their GHG efficiency.
 - Climate regulation : comparative advantages relatively to competitors.
- Social relation to environment seems to play a role of its own
- At the end of global GHG chains (fiscal base less directly linked to GHG emissions) => favours dominant social bloc supporting environmental policies (?)

CONCLUSION

CONCLUSION

- Results not surprising
- Climate ambitions reflect regulation of national capitalisms
- Also reflect situation of these capitalisms within global capitalism
- Next steps:
 - Deal with the outliers issues
 - Only OECD
 - Only BRICS
 - Only EU
 - Only non-EU

MERCI DE VOTRE ATTENTION !
DANKE FÜR IHRE AUFMERKSAMKEIT !