



CROSS-IMPACT ANALYSIS OF CUBAN ROLE IN GLOBAL GEOPOLITICS AND GEOECONOMICS: GEOPOLITICAL ANALYSIS AND ENERGY TRANSFORMATION AND CLIMATE CHANGE CHALLENGES IN THE CUBAN SOCIO-ECONOMIC CONTEXT

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& RESEARCHER JASMIN LAITINEN

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ENERGY TRANSFORMATION AND CLIMATE CHANGE CHALLENGES

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- Research Director, Finland Futures Research Centre, Turku School of Economics, University of Turku
- Adjunct Professor, University of Helsinki and University of Lapland
- Professor, Big Data Excellence Center, Kazimieras Simonavicius yliopisto, Vilnius, Lithuania
- Principal Investigator, PI, Marie Skłodowska-Curie Program (2020-2021), European Commission
- Researcher, the IRIS project, Cuban Energy Transformation – Integration of renewable intermittent sources in the power system, the Academy of Finland
- Manufacturing 4.0, EL-TRAN (2016-2020) the Academy of Finland, Strategic Research Council
- European Stress Tests Pilot Project (European Parliament, Danish Technological Institute, Copenhagen Economics)
- Researcher, RISCAPE: European Research Infrastructures in the International Landscape, European Commission 2017-2019
- Scientific Diplomat, European Integration Studies (EIS), Institute of Europe, Technological University of Kaunas, Kaunas, Lithuania
- Academic lectures to the European Science Foundation (ESF), to the Chinese Academy of Social Sciences (CASS), to the Russian Academy of Sciences, (RAS), and to the RAND Europe (among others)
- Adviser, the Next Society Institute and the Allied ICT Finland, AIF
- In 2020 Foresight Expert of the European Parliament (Stress Testing EU Policies, with the Danish Institute of Technology and the Copenhagen Economics)



SENIOR EXPERT, DR JYRKI LUUKKANEN



- Established leading expert in energy planning and energy-economic models.
- Senior expert, Dr Jyrki Luukkanen has directed numerous research projects for more than 40 years. He has been the director of EDULINK project PROCEED and Erasmus+ capacity building project CRECE developing energy education in Cuba,
- He is the director of the IRIS research project analyzing Cuban national-level energy development, funded by the Academy of Finland.

MASTER STUDEND JASMIN LAITINEN

- Researcher in Finland Future Research Centre, Turku School of Economy, University of Turku
- Master's student of Political Science, majoring in International relations in Tampere University
- Part of the IRIS project (Cuban Energy Transformation – Integration of renewable intermittent sources in the power system) since 2021 as an editor and researcher
- Topics of interest: European Union, energy politics, geopolitics
- Background training in European Union politics

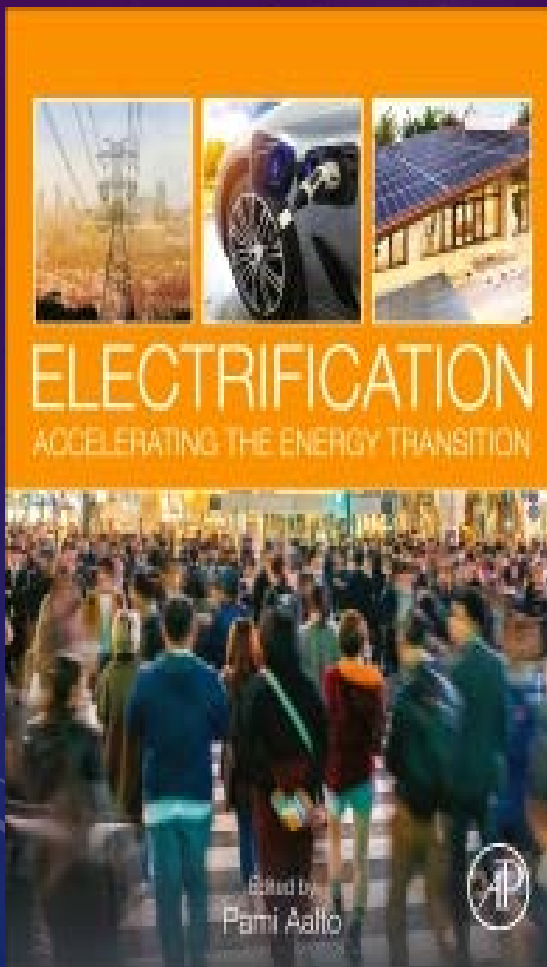


BACKGROUND

- Sustainability can be seen as general desirable vision for developing countries
- Global geopolitics is a neglected global driving factor in many climate and energy policy transformation analyses
- Geopolitical, social and economic contexts have important impacts for energy transformation and climate change challenges
- All nations and economies have their own Smart Specialisation Strategies (S3 approaches) also own Sustainable Smart Specialisation Strategies (S4 approach)
- Countries are not existing in a political vacuum, but countries face geopolitical and geoeconomic environment, and so does also the Cuban economy and society
- Understanding geopolitical and geoeconomic realities is a reliable backbone for rational energy system planning and decision-making in a changing decision environment

GLOBAL ELECTRIFICATION PROCESS IS GOING ON: NOT A LINEAR PROCESS

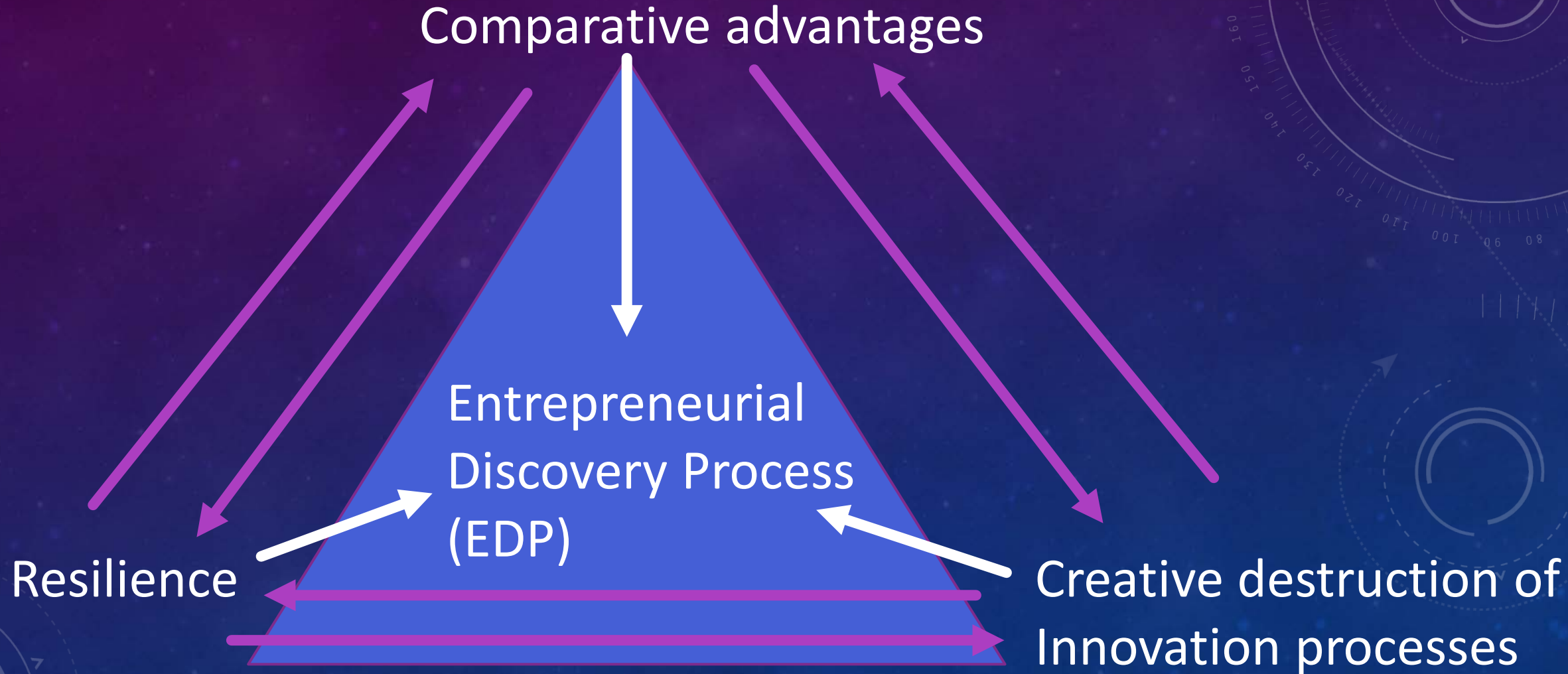
- Good to read: Pami Aalto (Ed.) Electrification Accelerating the Energy Transition. 1st Edition - August 8, 2021



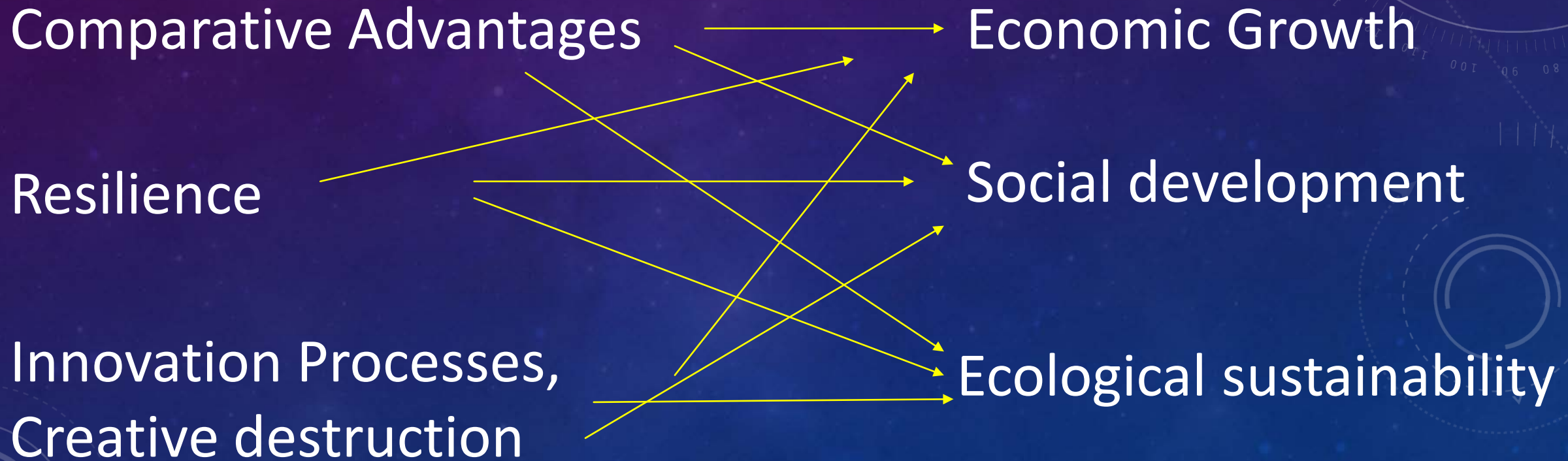
PILLARS OF SUSTAINABLE DEVELOPMENT: ADVANCED SUSTAINABILITY APPROACH



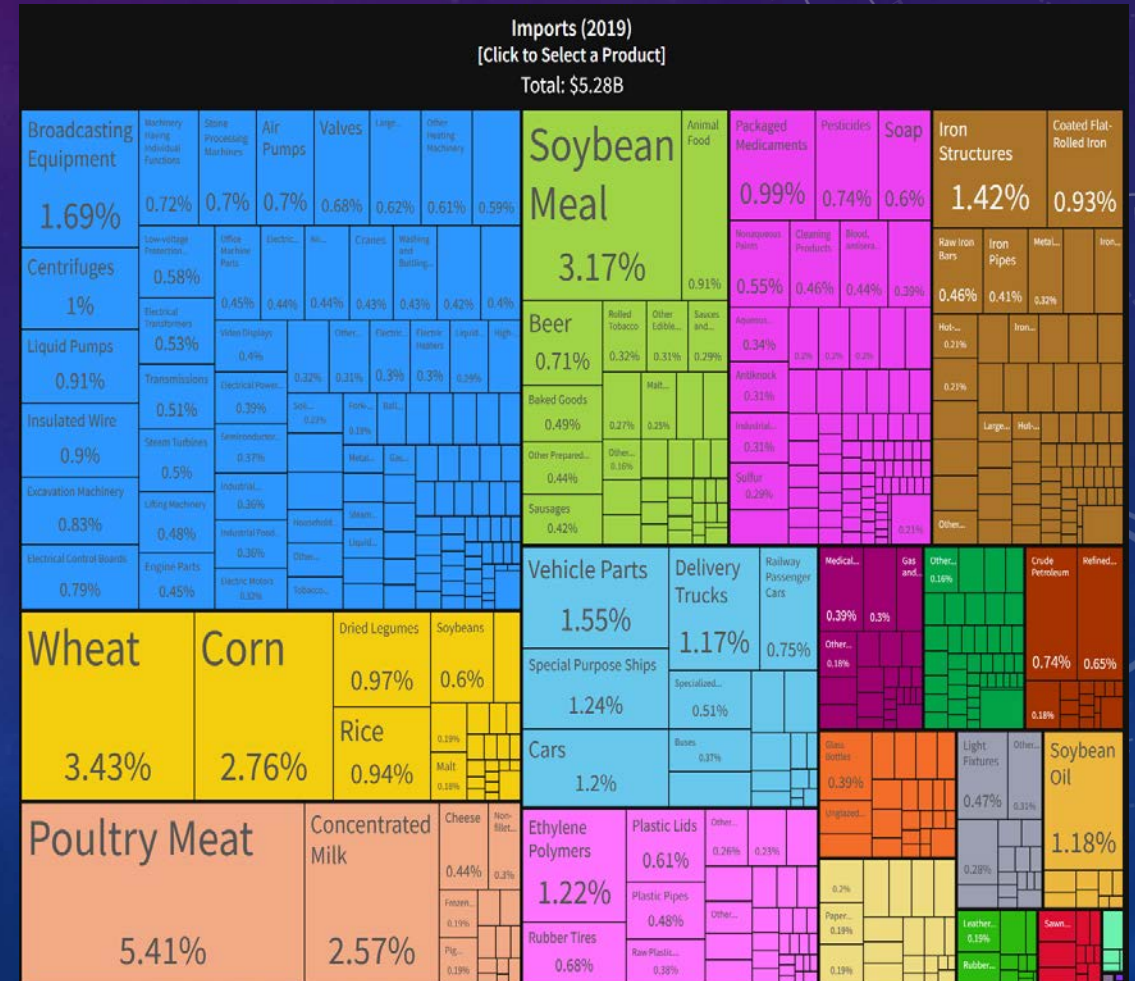
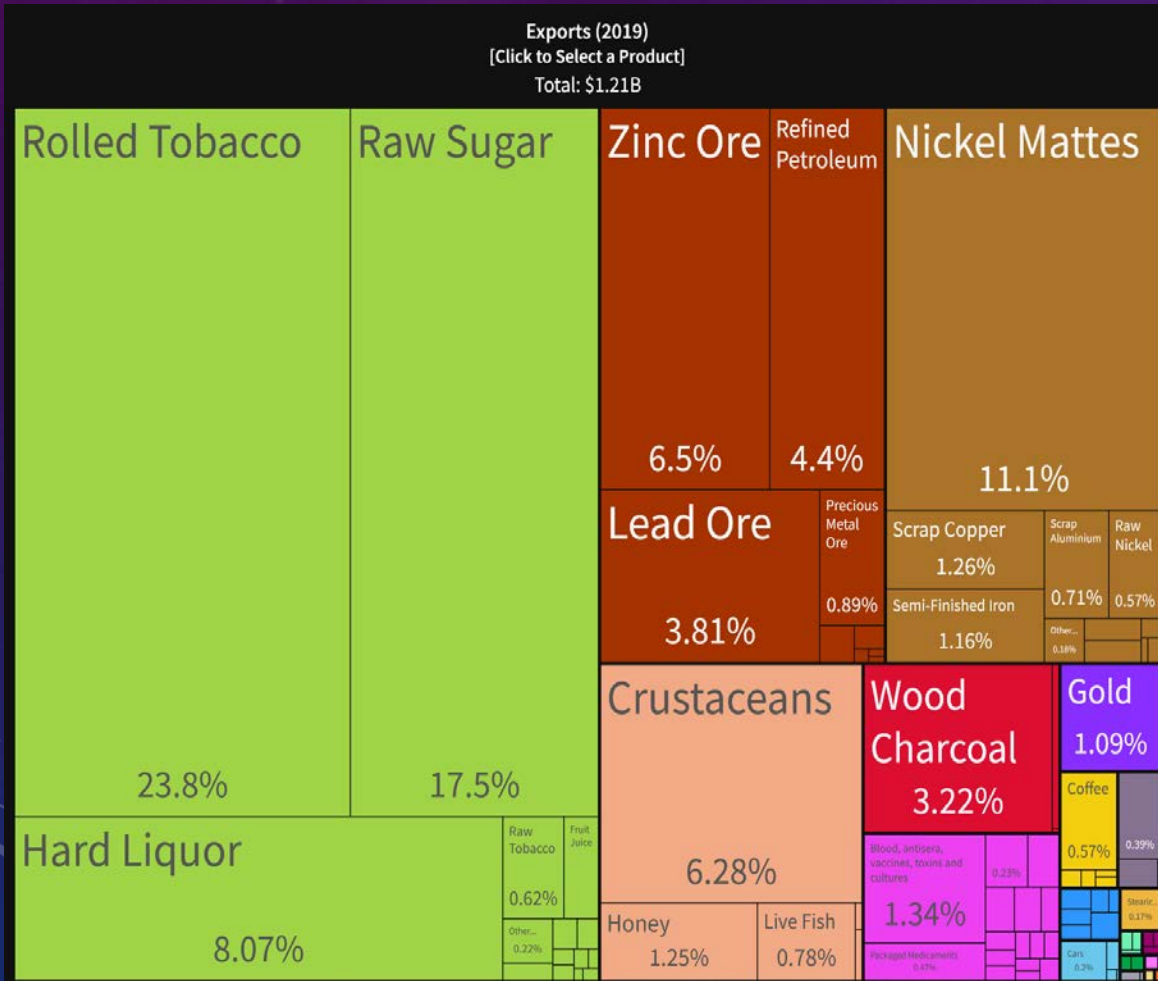
NATIONAL DEVELOPMENT: PILLARS OF SMART SPECIALISATION STRATEGY (S3, EUROPEAN COUNTRY APPROACH)



KEY ISSUES OF THE S4 APPROACH



THE EXPORT AND THE IMPORT OF CUBA IN 2019 (OEC 2022)



GEOPOLITICS AND GEOECONOMICS (WIGELL & VIHMAS 2016)

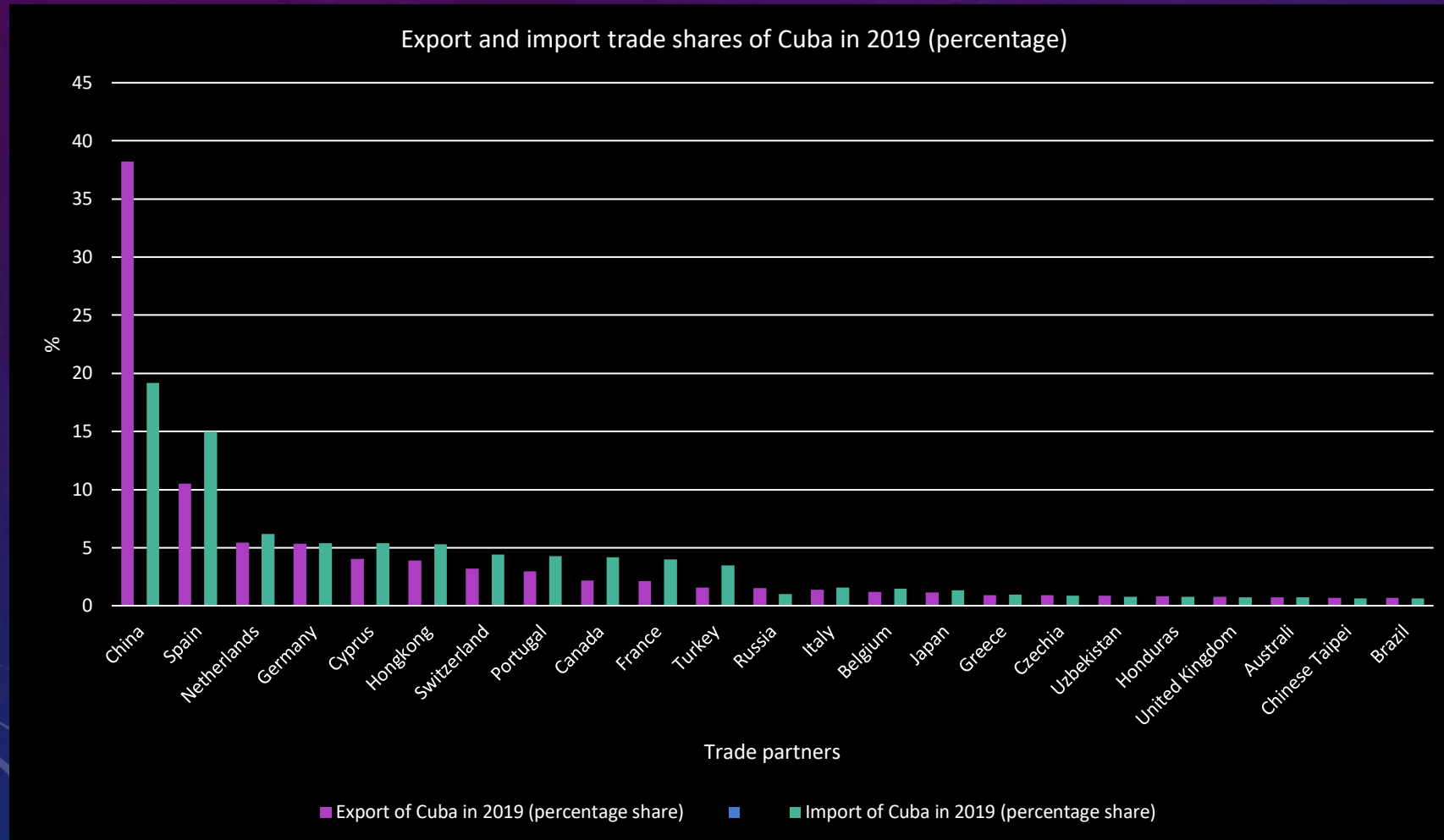
	Geopolitics	Geoeconomics
Operational (agent):		
Means	Military	Economic
Visibility	Overt	Covert
Logic	Confrontation	Selective accommodation
Effects (target):		
Threat perception	High	Low/medium
Action-reaction force	Centripetal	Centrifugal
Behavioural tendency	Counterbalancing Bandwagoning	Underbalancing

GEOPOLITICAL AND GEOECONOMIC CHALLENGES AND OPPORTUNITIES FOR CUBA

Cuban military forces are limited to defence operations and do not constitute a

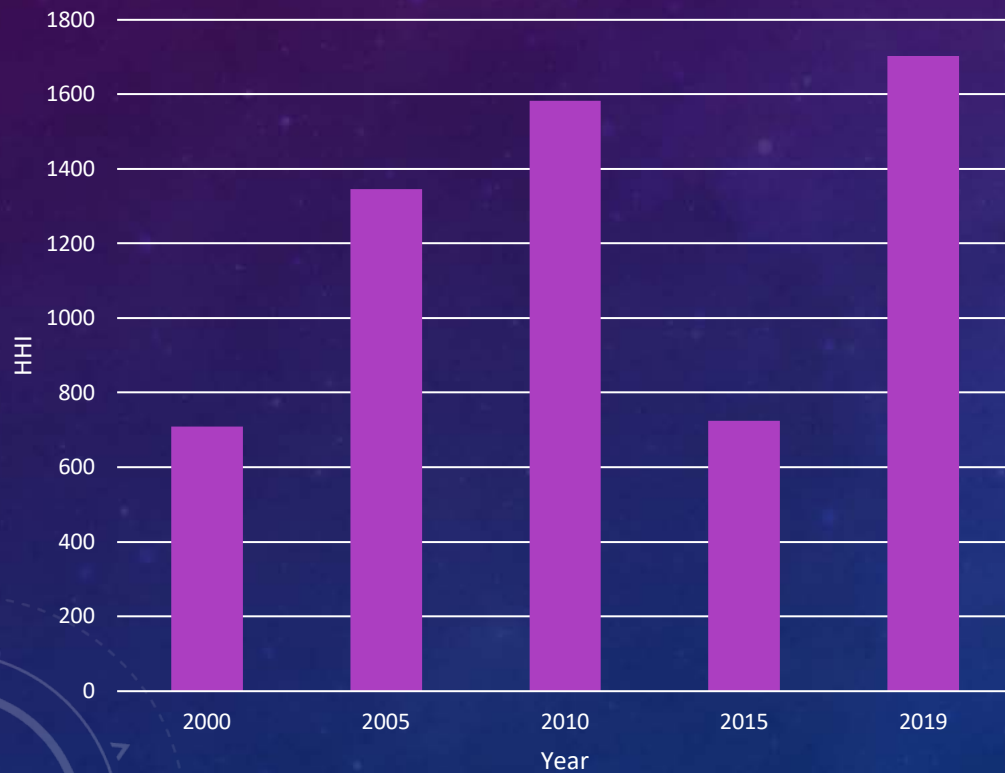
	Geopolitics	Geoeconomics
Operational (agent):		
Means	Military: Limited military power	Economic: US-Cuba embargo, rise of China, EU collaboration
Visibility	Overt: Blockade	Covert: New trade partnerships, bilateral networking
Logic	Confrontation: US	Selective accommodation: China, EU countries, ECLAC
Effects (target):		
Threat perception	High: US	Low/medium: Other countries
Action-reaction force	Centripetal: ALBA	Centrifugal: Blockade
Behavioural tendency	Counterbalancing/ Bandwagoning: US	Underbalancing: Economic restructuring, new ownership structures

EXPORT AND IMPORT OF CUBA IN 2019 (OEC 2022)

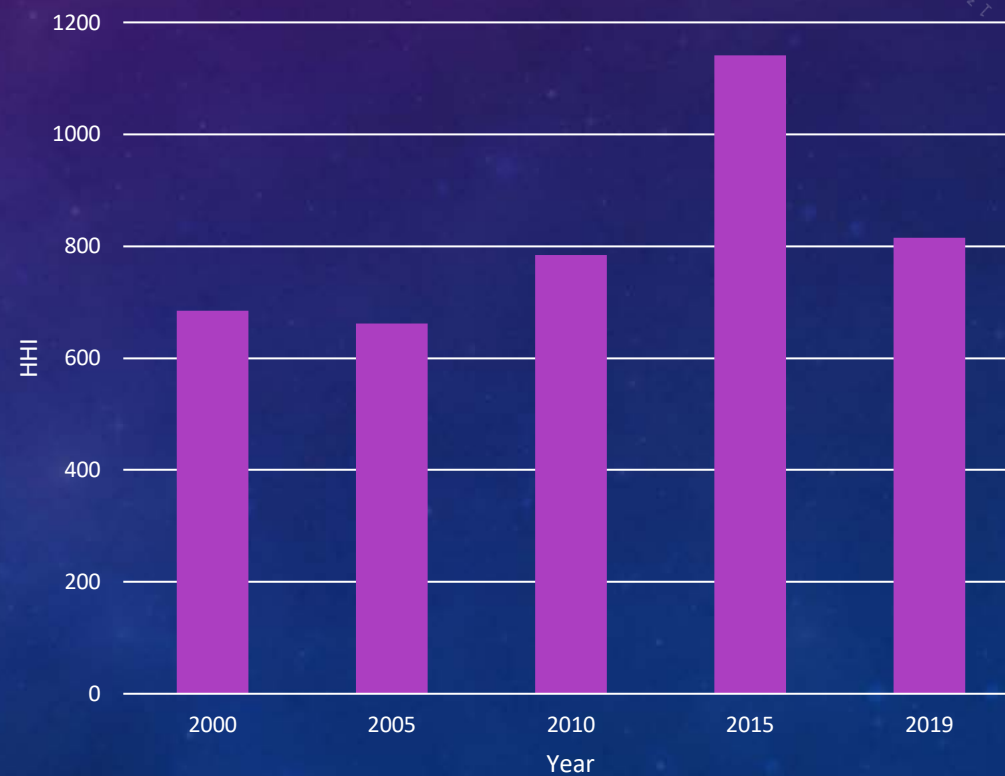


HERFINDAHL-HIRCHMAN INDEX (HHI) ANALYSIS OF THE EXPORT AND IMPORT STRUCTURES OF THE CUBAN ECONOMY

HHI-analysis - Export Structure of Cuba

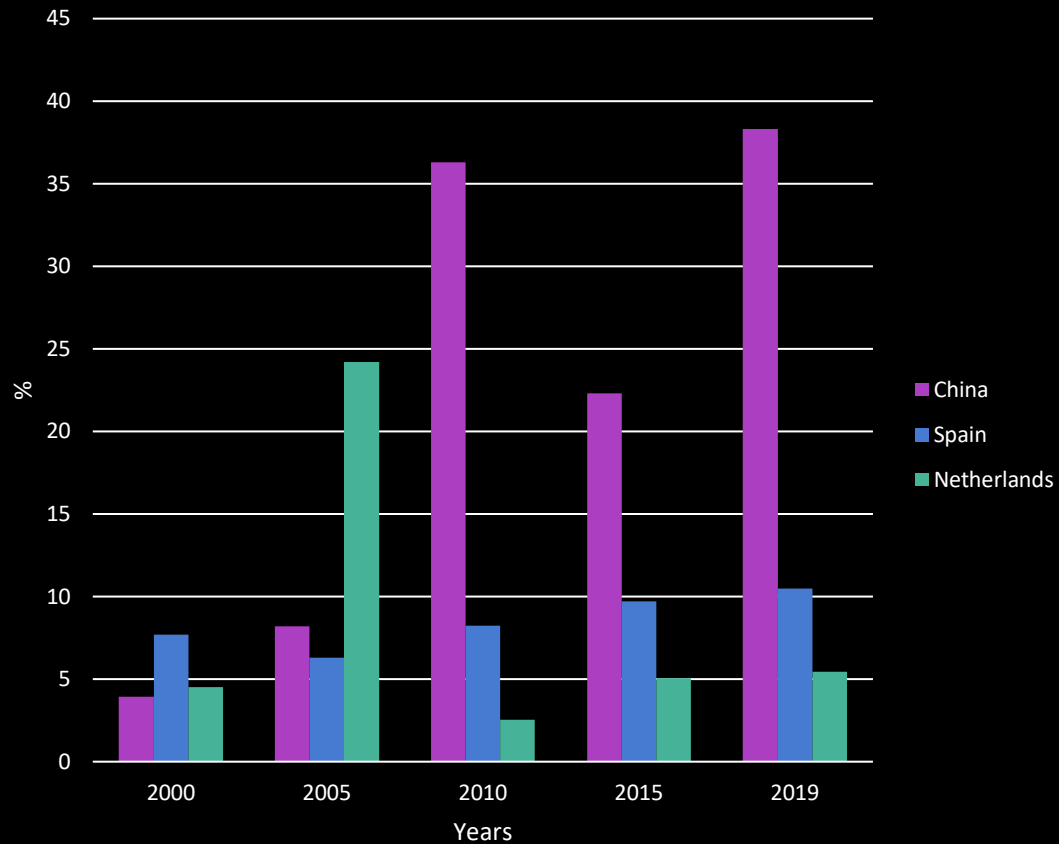


HHI-analysis - Import Structure of Cuba

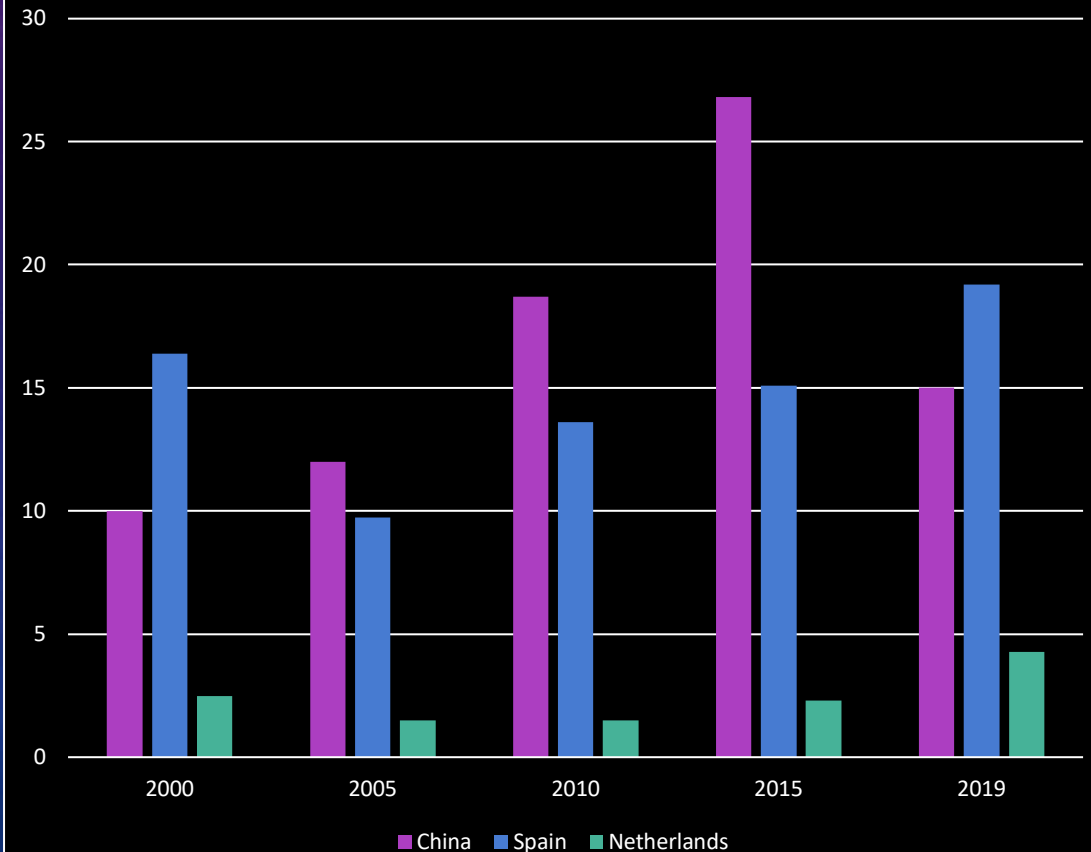


CUBA-CHINA'S TRADE PARTNERSHIP ROLE IS STRENGTHENING IN CUBA (OEC 2022)

The export (%) of Cuba to China, Spain and Netherlands in 2000, 2005, 2010, 2015 and 2019



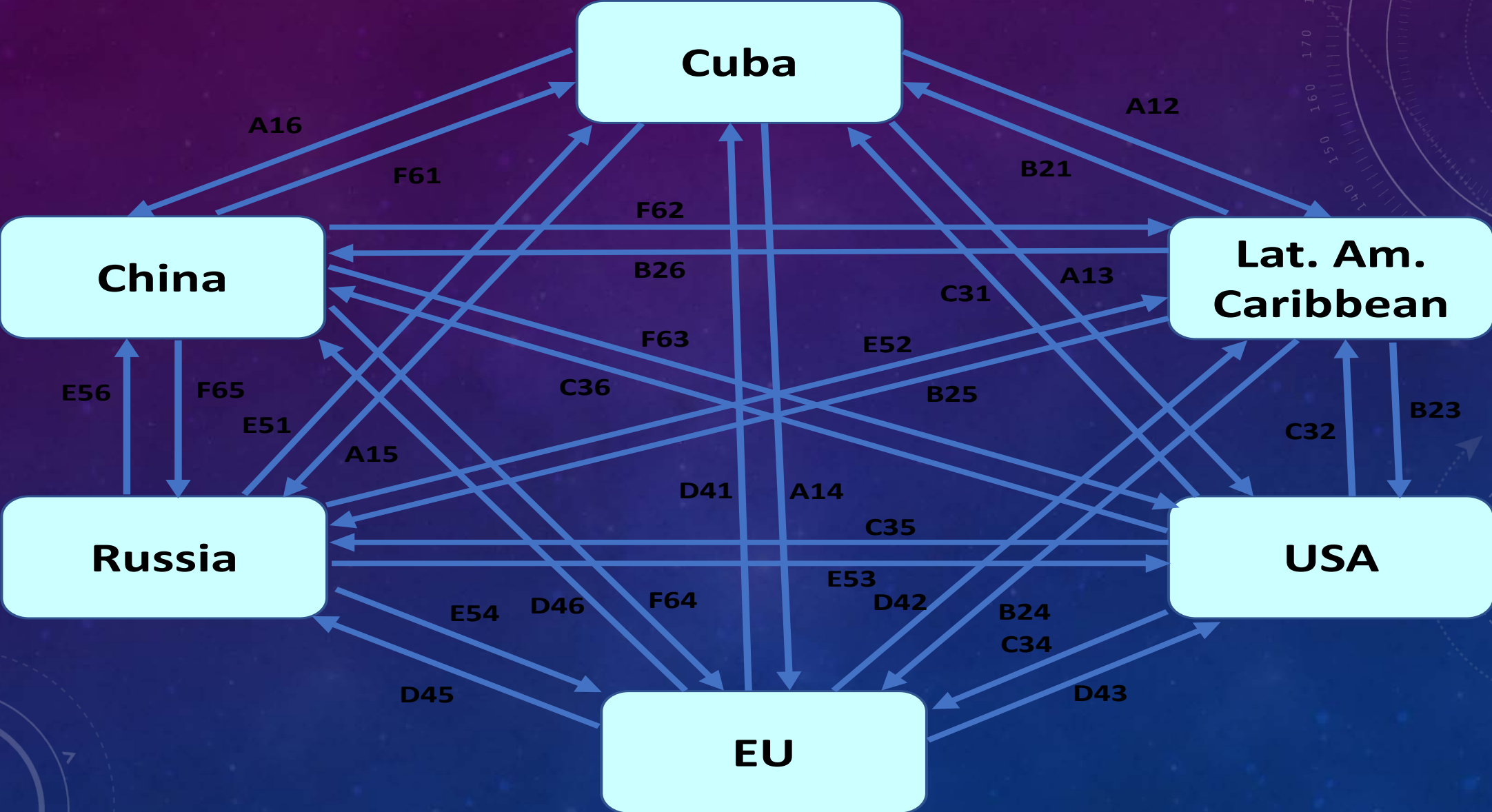
The import (%) of Cuba from China, Spain and Netherlands in 2000, 2005, 2010, 2015 and 2019



CHANGING REALITIES OF GLOBAL GEOPOLITICS

- The geopolitical role China and other BRICSA countries are rising gradually
- New cold war atmosphere has emerged because of many political reasons and tensions – is hot war possible?
- The role US as a global leader country has been challenged in many ways
- The role of the European Union is problematic: The EU is trying to be a balancing partner in geopolitical tensions in the Latin America
- Chinese Latin American Silk Road project goes on in spite of ongoing COVID-19 crisis - many relevant uncertainties exist

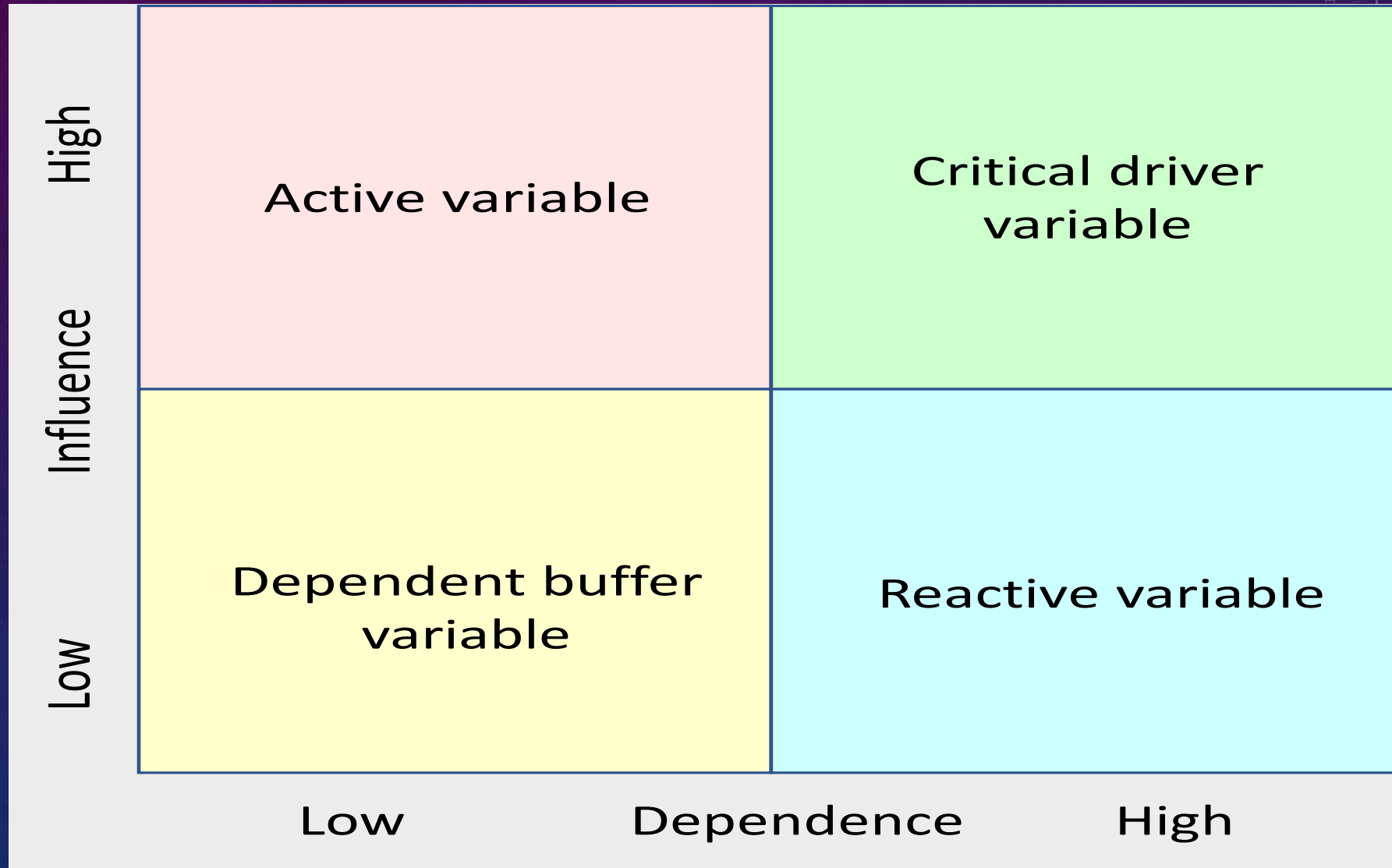
GEOPOLITICAL ANALYSIS OF CUBA BEFORE 2035



CROSS-IMPACTS OF THE NATIONS. DIRECT IMPACT OF THE ROW VARIABLE ON THE COLUMN VARIABLE

		A	B	C	D	E	F
Cuba	A		A12	A13	A14	A15	A16
Lat. Am. and Caribbean	B	B21		B23	B24	B25	B26
USA	C	C31	C32		C34	C35	C36
EU	D	D41	D42	D43		D45	D46
Russia	E	E51	E52	E53	E54		E56
China	F	F61	F62	F63	F64	F65	

CLASSIFICATION OF THE TYPES OF VARIABLES IN CROSS-IMPACT ANALYSIS



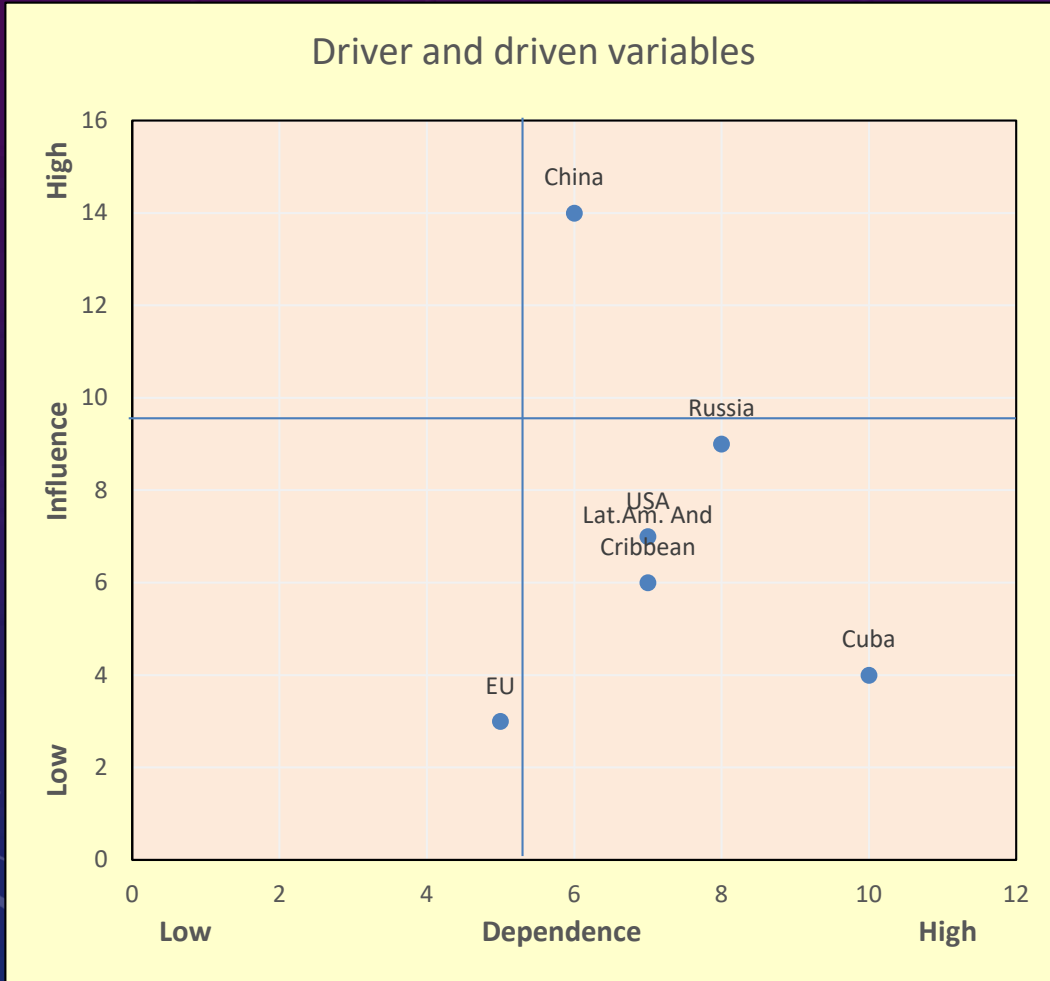
FRAMEWORK OF CROSS-IMPACT ANALYSIS FOR CUBA

- Three alternative scenarios, (1) the Two Red Flags Scenario, (2) the Pan American Renaissance Scenario and (3) the Second Cold War Scenario
- Time horizon of scenario analysis is till 2035
- All alternative scenarios are based on the Exit algorithm and there are also other algorithms available (e.g. Bayesian approaches), more results can be calculated with other algorithms later

THE TWO RED FLAGS SCENARIO: SCENARIO ASSUMPTIONS

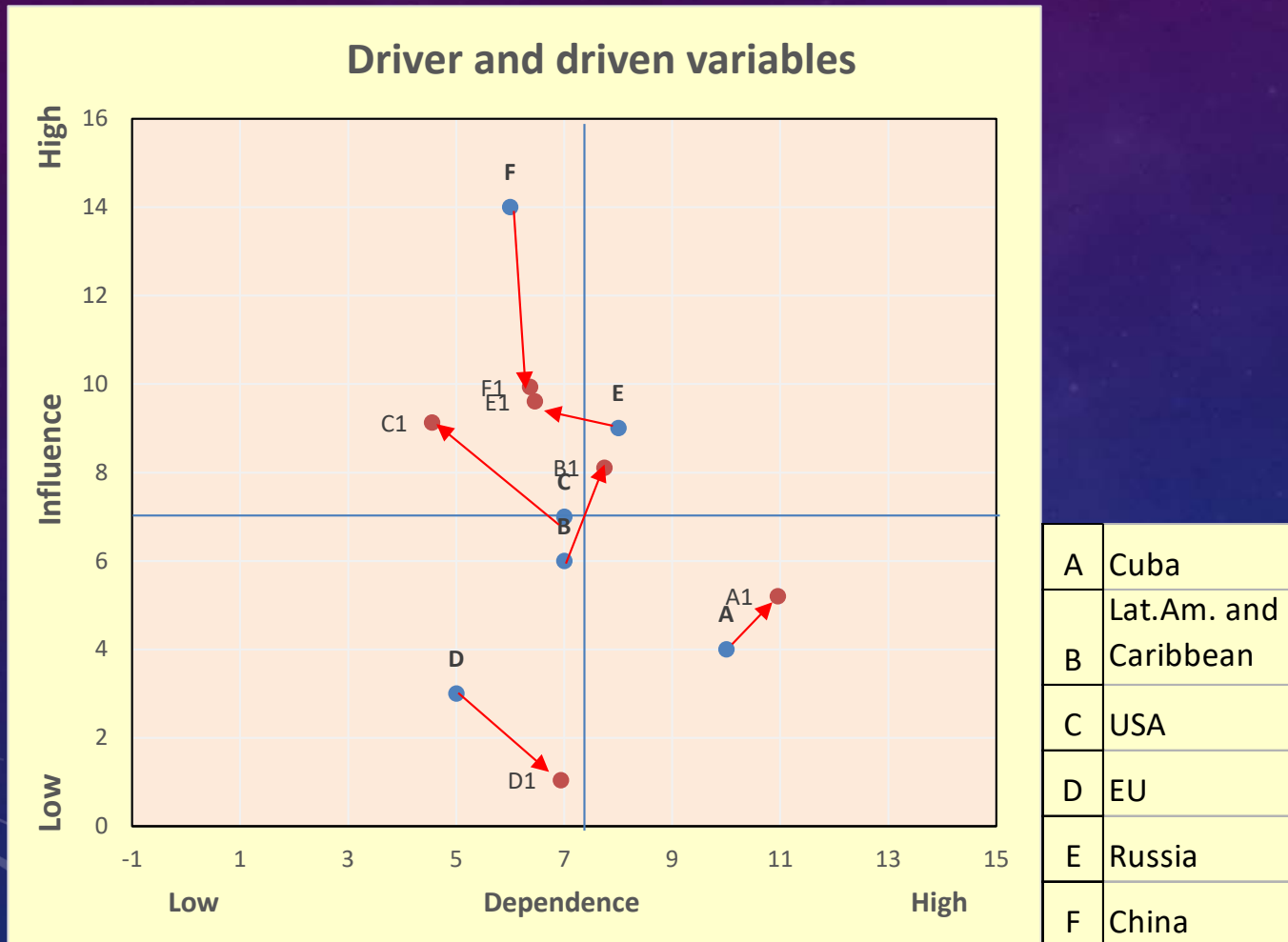
Scale: -4, -3, -2, -1, 0, +1, +2, +3 +4		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
Cuba	<i>A</i>		1	-1	0	1	1
Lat.Am. and Caribbean	<i>B</i>	1		-2	0	1	2
USA	<i>C</i>	-2	-1		-1	-2	-1
EU	<i>D</i>	1	1	0		-1	0
Russia	<i>E</i>	2	1	-2	2		2
China	<i>F</i>	4	3	2	2	3	

THE TWO RED FLAGS SCENARIO: FIRST ROUND RESULTS



		Driven	Driver
Cuba	A	10	4
Lat. Am. And Cribbean	B	7	6
USA	C	7	7
EU	D	5	3
Russia	E	8	9
China	F	6	14

LOCATION OF THE STATES IN THE INFLUENCE-DEPENDENCE CHART IN THE TWO RED FLAGS SCENARIO BASED ON DIRECT IMPACTS.



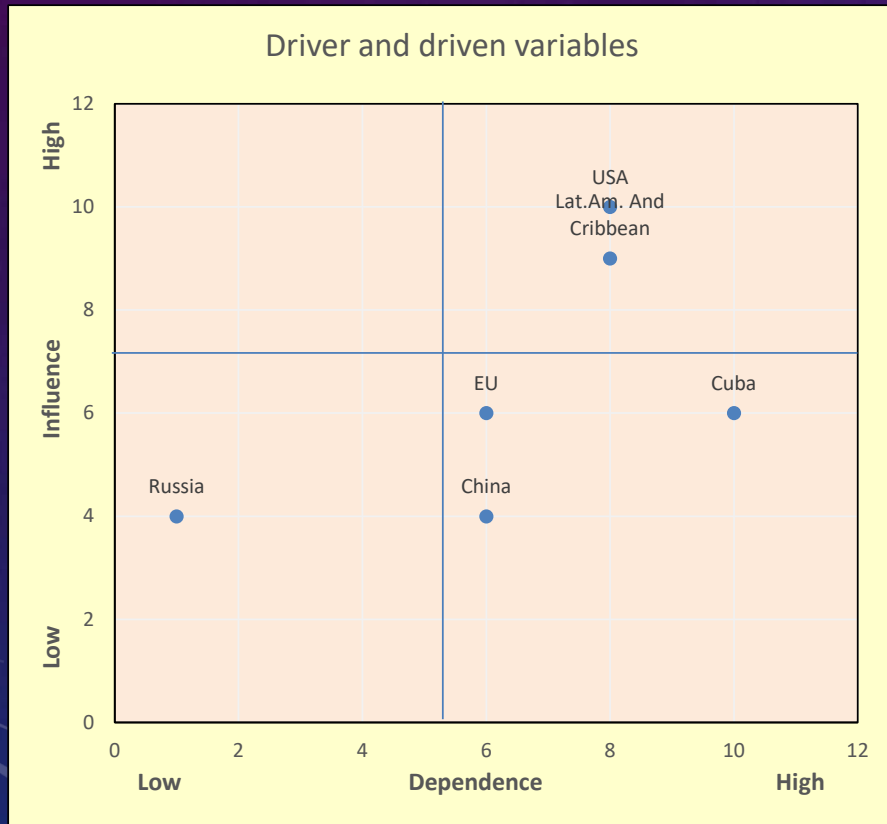
SCENARIO 2: THE PAN AMERICAN RENAISSANCE



THE PAN AMERICAN RENAISSANCE SCENARIO SCENARIO: SCENARIO ASSUMPTIONS

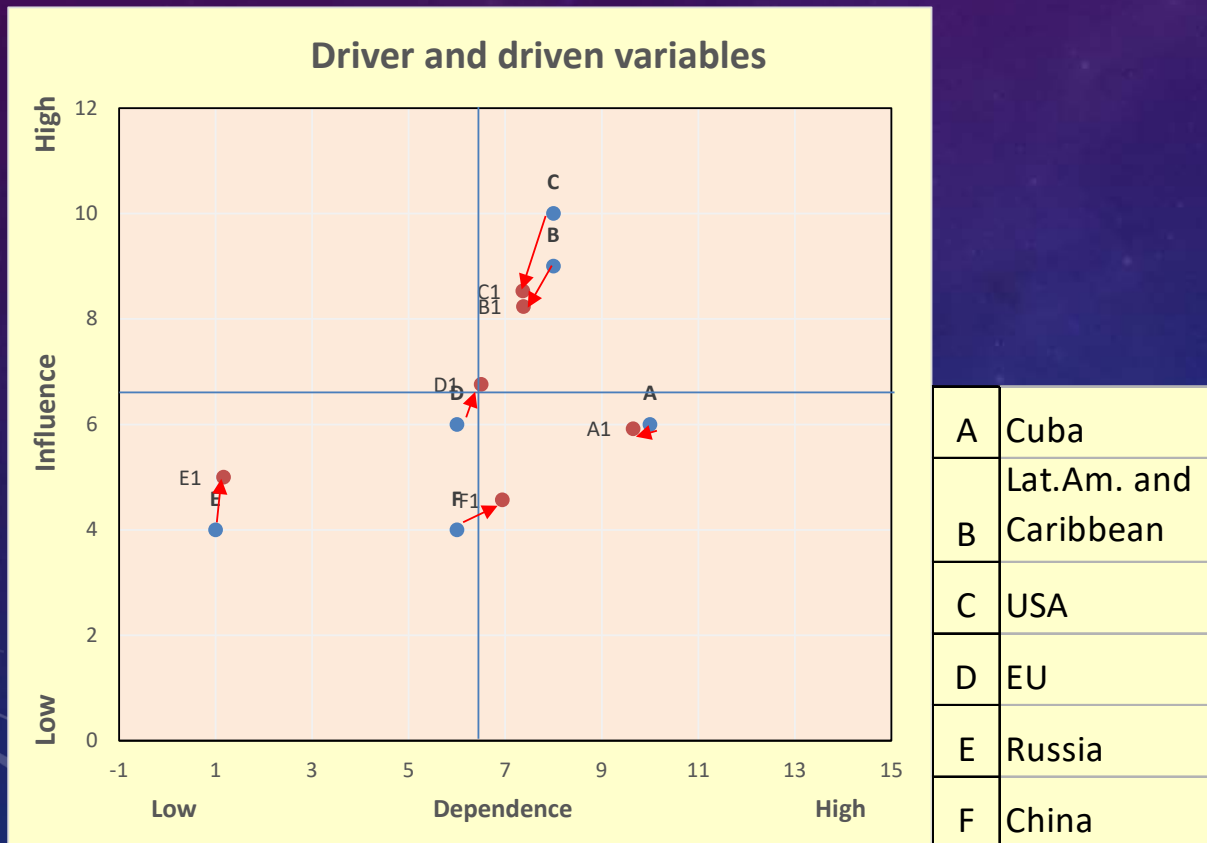
Scale: -4, -3, -2, -1, 0, +1, +2, +3 +4		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
Cuba	<i>A</i>		2	2	1	0	-1
Lat.Am. and Caribbean	<i>B</i>	2		3	2	0	-2
USA	<i>C</i>	4	3		2	0	-1
EU	<i>D</i>	2	1	2		0	-1
Russia	<i>E</i>	-1	-1	0	-1		1
China	<i>F</i>	-1	-1	-1	0	1	

THE PAN AMERICAN RENAISSANCE SCENARIO: LOCATION OF THE STATES IN THE INFLUENCE-DEPENDENCE CHART IN THE PAN AMERICAN RENASSAINCE SCENARIO BASED ON DIRECT IMPACTS.

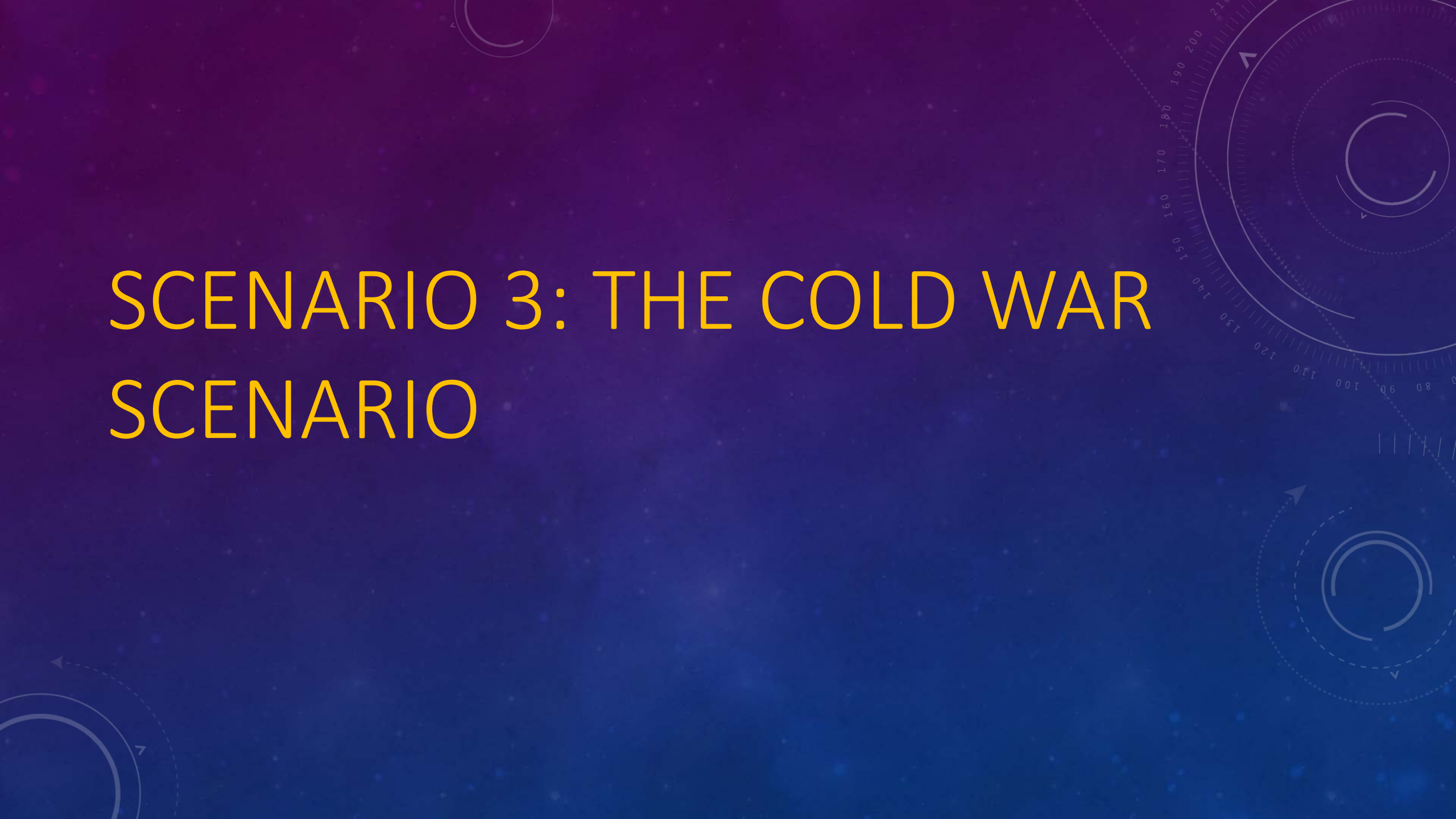


		<i>Driven</i>	<i>Driver</i>
Cuba	<i>A</i>	10	6
Lat. Am. And Cribbean	<i>B</i>	8	9
USA	<i>C</i>	8	10
EU	<i>D</i>	6	6
Russia	<i>E</i>	1	4
China	<i>F</i>	6	4

CHANGES IN THE INFLUENCE-DEPENDENCE OF THE STATES WHEN THE CROSS-IMPACTS ARE TAKEN INTO ACCOUNT IN THE PAN AMERICAN RENAISSANCE SCENARIO



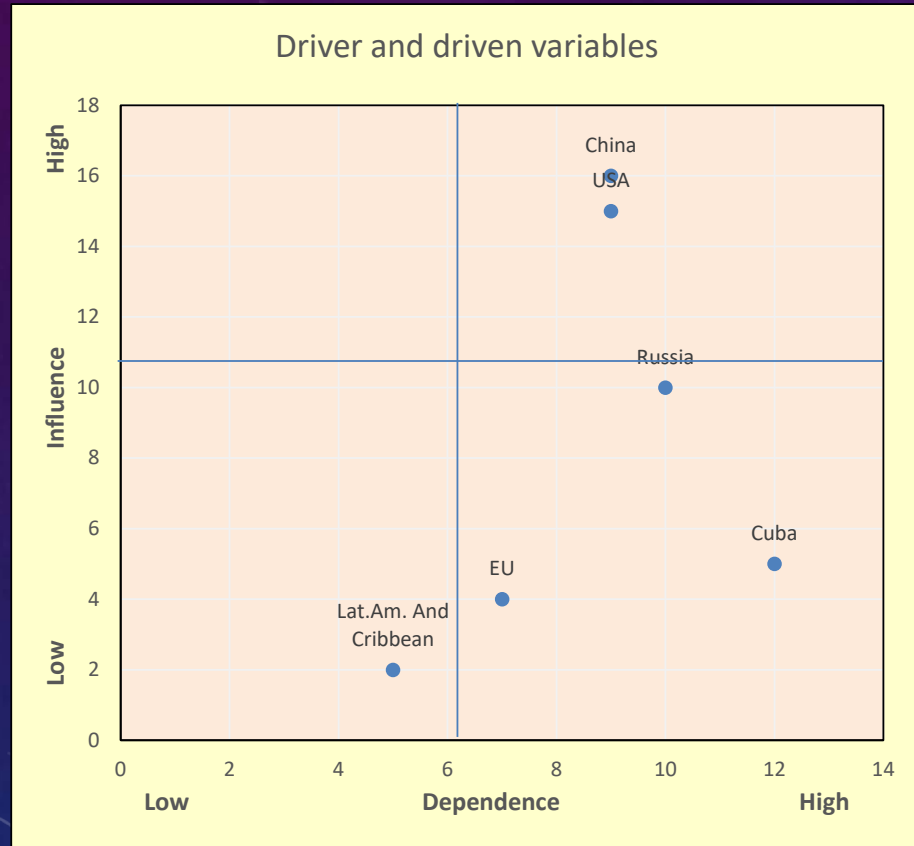
SCENARIO 3: THE COLD WAR SCENARIO



CROSS-IMPACT MATRIX OF DIRECT IMPACTS IN THE COLD WAR SCENARIO

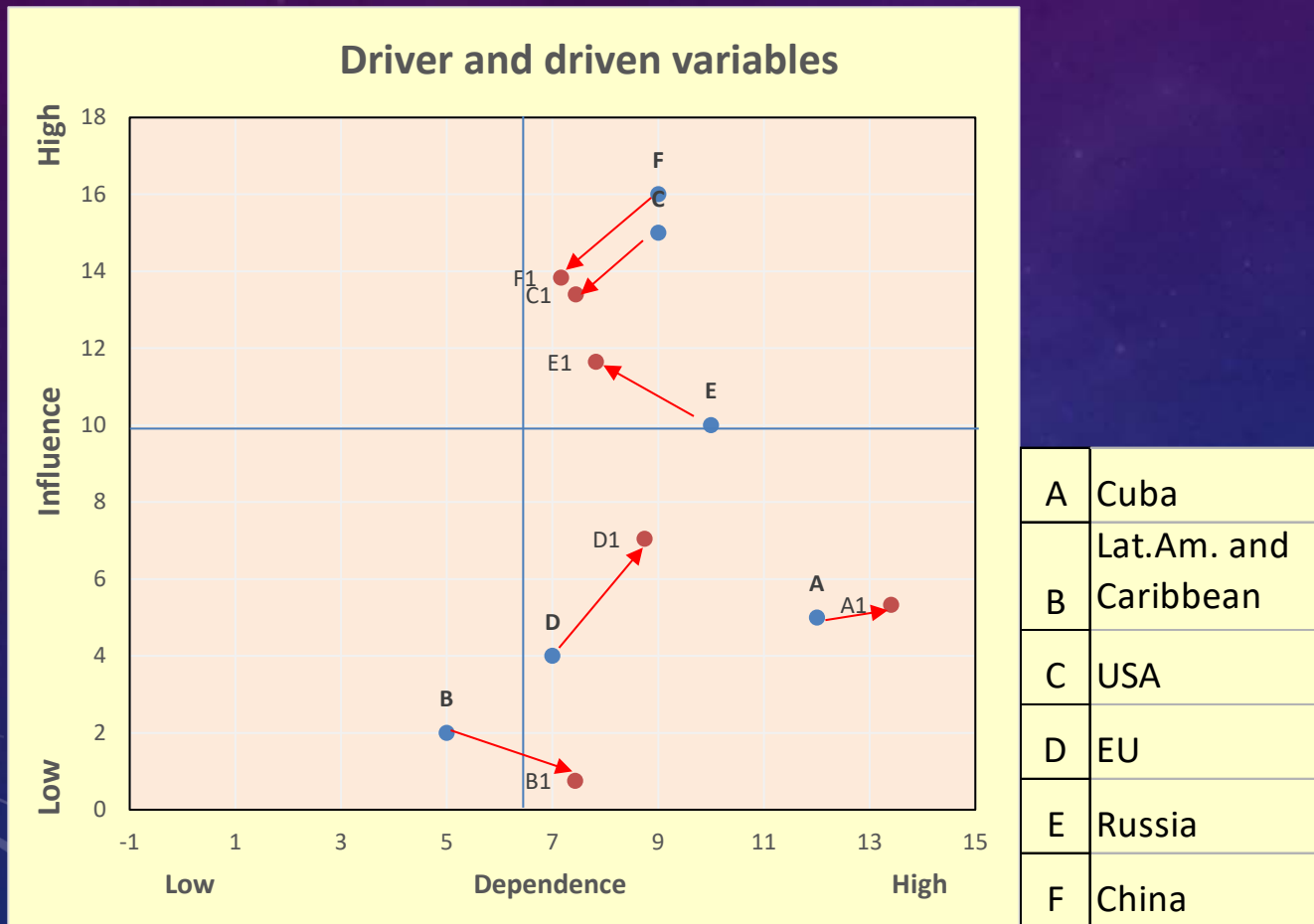
Scale: -4, -3, -2, -1, 0, +1, +2, +3 +4		A	B	C	D	E	F
Cuba	A		1	-1	-1	1	1
Lat.Am. and Caribbean	B	1		0	0	-1	0
USA	C	-4	-2		2	-3	-4
EU	D	0	0	2		-1	-1
Russia	E	3	0	-2	-2		3
China	F	4	2	-4	-2	4	

LOCATION OF THE STATES IN THE INFLUENCE-DEPENDENCE CHART IN THE COLD WAR SCENARIO BASED ON DIRECT IMPACTS



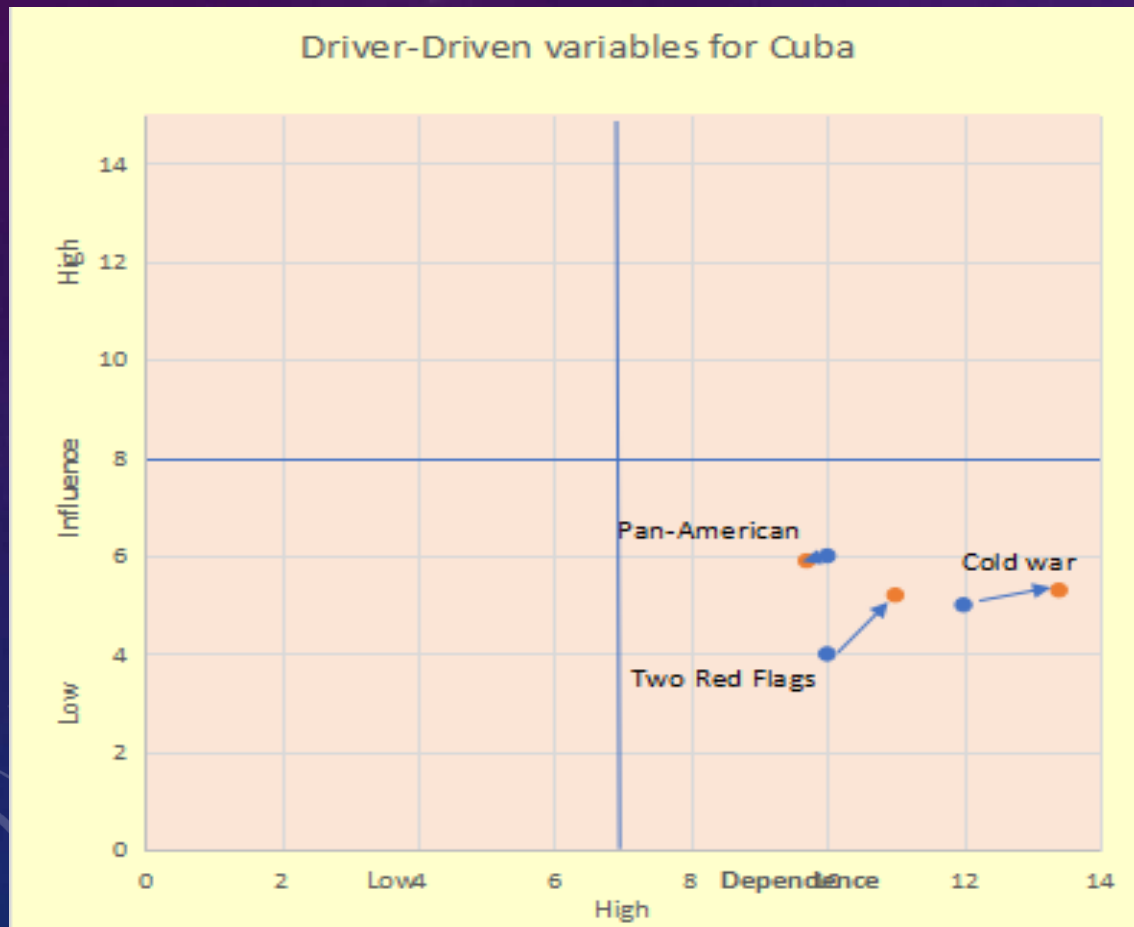
		Driven	Driver
Cuba	A	12	5
Lat. Am. And Cribbean	B	5	2
USA	C	9	15
EU	D	7	4
Russia	E	10	10
China	F	9	16

CHANGES IN THE INFLUENCE-DEPENDENCE OF THE STATES WHEN THE CROSS-IMPACTS ARE TAKEN INTO ACCOUNT IN THE COLD WAR SCENARIO.



SUMMARY OF KEY RESULTS:

CHANGES IN THE POSITION OF CUBA AS A RESULT OF CROSS-IMPACTS IN THE DIFFERENT SCENARIOS ON THE INFLUENCE-DEPENDENCE CHART



CONCLUSIONS

- In this presentation we explored the complicated role Cuba plays in the global power politics through geopolitics and geoeconomics as well as from the viewpoint of dependency. There is no denying that the current global climate presents a challenge to the Cuban state.
- Cuba is still heavily impacted by dependencies thus making it vulnerable. Dependence is a corollary of dominance a situation in which a developing country have to rely on developed-country domestic and international economic policy to stimulate their own economic growth and development.
- **The Cuban space for manoeuvring is limited and makes the policy forming ever so important.** The situation of the state is partly a result of its historical context with path dependencies.
- Cuban economic structure is still dependent on old production structures established in the past and there is a lot of potential for development. The source of dependency comes from few export commodities as well as few partnering countries.
- In the case of import commodities the variability is greater and the number of partnering countries is larger resulting less dependency. However, dependency of food and technology imports remains a significant challenge for Cuban economy and society.

CONCLUSIONS

- **The US blockade** creates major obstacles for Cuban development. This has given opportunities for other actors to strengthen their cooperation with Cuba. China has become a prominent actor in the region and has considerably increased its influence in the Cuban economy. **The European Union has through its Political Dialogue and Cooperation Agreement (PDCA) pursued to develop a closer bond between the two actors.** However, it is important to note that the dependencies have several different forms as illustrated by the cross-impact analysis. The results of the cross-impact analysis display the limitations of Cuban influence as well as high dependency on the global actors. The geopolitical and geoeconomic frameworks provide an intriguing approach to examine these power relations.

CONCLUSIONS

- Yet, variety of possibilities still exist for Cuba. **Balanced cooperation with the Caribbean countries and the European Union could, for example, provide new opportunities for mutually beneficial collaborations.** These partners come crucial in developing, for instance, the already promising fields of biotechnological and pharmaceutical industries. Utilizing these opportunities takes careful planning and smart investments. To reach their full potential it is necessary to take into account the different interactions of the complex domestic and global political processes. Cuba is on its own, facing challenging trade-offs to harmonize social and economic objectives.
- **For resilience, health and education policies are highly relevant in Cuba.** Especially, maintaining progress in education, health, life expectancy and other social indicators while providing incentives for personal advance, entrepreneurial initiatives and improvements in productivity calls for an extremely difficult political balancing act in Cuba. Historically, **Cuba's achievements in social services are real and undeniable.** Since the 1961 nationalization of education, health and other services, all Cubans have enjoyed free access to education, health care and social protection. In Cuba social development has always been a political priority, even in times of severe economic crisis. About up to one-third of the national budget has been systematically allocated to the social welfare sectors.

THANK YOU FOR YOUR ATTENTION!