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Analysis of the regional economic structure in Mexico (2018-2022)

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Introduction

- The Covid-19 pandemic has triggered urgent economic demands in regions and states.
- The need for macroeconomic adjustments and policies that promote productive and entrepreneurial development at the territorial level.
- Authors such as Barnet (2019), Dini and Correa (2019), Torres and Briones (2019) highlight the importance of local economic development initiatives.

Introduction

- **Objective:**

To analyze the economic dynamics and structure of Mexico's regions during 2019-2022.

The Literature Review

- In the 1980s, Europe saw the emergence of regional development with a local focus, giving rise to "Local Development" linked to the economy of cities and regions.
- Authors such as Alburquerque (1996), Boisier (1999), Cárdenas (2002), Coraggio (2006), Cossío (2003), Mattos (2000), Pérez (2011a), Tello (2010), Vázquez Barquero (2000), propose different concepts, but share the objective of improving the quality of life through the use of local resources.
- At the core of this approach is "local economic development", which refers to the fundamental relationship between development and the economic base of the territory.

The Literature Review

- Local and territorial planning includes analyses that explore variables that explain the behavior of the territory, such as potentials and needs.
- Techniques such as synthetic indexes are used, which vary according to the conception of development and consider multiple dimensions.
- Territorial diagnostic tools, such as ILPES-ECLAC and ECLAC methodologies, enrich the analysis.

The Literature Review

- Regional Analysis (TAR, Spanish acronym) emerged from North American researchers, with Isard (1971) as a prominent figure, being essential for identifying regional problems and defining strategies.
- In Latin America, researchers such as Boisier (1980) and Lira (2009) have contributed to the field of RAT, presenting similarities in their perspectives despite methodological differences.

The Study

- In order to study the economic structure of Mexico's regions, the country was divided into eight regions: Northwest NW (Baja California, Baja California Sur, Chihuahua, Durango, Sinaloa, Sonora); Northeast NE (Coahuila, Nuevo León and Tamaulipas); West W (Colima, Jalisco, Michoacán and Nayarit); East OR (Hidalgo, Puebla, Tlaxcala and Veracruz); North Central CN (Aguascalientes, Guanajuato, Querétaro, San Luis Potosí and Zacatecas); South Central CS (Mexico City, Estado de México, Morelos); Southwest SW (Chiapas, Guerrero and Oaxaca) and Southeast SE (Campeche, Quintana Roo, Tabasco and Yucatán).

Research Question(s)

- What factors influenced economic development and structural change in Mexico's regions between 2019 and 2022?

Methodology

MATRIZ SECRE

R_j / S_i	R_1	R_2	$\cdots$	R_m	$\sum_j Vij$
S_1	V_{11}	V_{12}	$\cdots$	V_{1m}	V_{1j}
S_2	V_{21}	V_{22}	$\cdots$	V_{2m}	$V2j$
$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\vdots$
S_n	S_{n1}	S_{2n}	$\cdots$	V_{nm}	V_{nj}
$\sum_i V_{ij}$	$V_{i.1}$	$V_{i.2}$	$\cdots$	$V_{i.m}$	$\sum_i \sum_j V_{ij}$

Figure 1. Structure of the SECRE matrix. Based on Boisier (1980) and Lira (2009)

Methodology

Regional Analysis Techniques (TAR)	Type of specialization	Formula	Interpretation
Regional Specialization	*Internal specialization*	$E_{\text{int}} = \frac{V_{ij}}{\sum_i V_{ij}}$	The values of internal specialization vary between 0 and 1. The closer these values are to 1, the greater the importance of the activity in the region.
	External specialization	$E_{ext} = \frac{\frac{V_{ij}}{\sum_i V_{ij}}}{\frac{\sum_j V_{ij}}{\sum_i \sum_j V_{ij}}}$	Its values can be equal to, less than or greater than 1; values greater than 1 indicate a higher degree of specialization of that activity at the country level.

Methodology

Regional Analysis Techniques (TAR)	Formula	Interpretation
Diversification Coefficient	$Q^E = \frac{1}{2}\sum_i \left\| \frac{V_{ij}}{\sum_i V_{ij}} - \frac{\sum_j V_{ij}}{\sum_i \sum_j V_{ij}} \right\|$	The diversification coefficient takes values greater than or equal to zero. In other words, the further the values are from zero, the greater the differences between the regional and national structure.
Restructuring Coefficient	$Q^R = \frac{1}{2}\sum_i \left\| \frac{V_{ij}^{t_1}}{\sum_i V_{ij}^{t_1}} - \frac{V_{ij}^{t_0}}{\sum_i V_{ij}^{t_0}} \right\|$	The Restructuring Coefficient takes values between zero and one. Values closer to zero mean that in the period there were minimal changes in the economic structure of the region.

Methodology

- Considering the previous point of view, Miranda (1995) proposes a classification range for this coefficients:

  Relatively similar QE or QR < 0.10

  Moderate differences 0.10 ≤ QE or QR < 0.30

  Significant differences 0.30 ≤ QE or QR < 0.50

  Highly significant differences 0.50 ≤ QE or QR < 0.65

  Strong differences QE or QR ≥ 0.65

Methodology

Regional Analysis Techniques (TAR)	Formula	Interpretation
Total variation (R)	$R = \sum_i V_{ij}^{t_0}(r_{tt} - 1)$ $Where:$ $r_{tt} = \frac{V_{ij}^{t_1}}{V_{ij}^{t_0}}$	Also known as total effect: it can be interpreted as the magnitude that the variable under study would have reached if the region had behaved in the same way as the country
Additional or Structural variation (P)	$R = \sum_i V_{ij}^{t_0}(r_{it} - r_{tt})$ $Where:$ $r_{it} = \frac{\sum_j V_{ij}^{t_1}}{\sum_j V_{ij}^{t_0}}$	Values can be greater or less than zero. Positive values indicate specialization in fast-growing sectors at the national level (SRC), while negative values indicate specialization in slow-growing sectors at the national level (SLC).

Methodology

Regional Analysis Techniques (TAR)	Formula	Interpretation
Differential Variation (D)	$D = \sum_i V_{ij}^{t_0}(r_{ij} - r_{it})$ $Where:$ $r_{ij} = \frac{\sum_i \sum_j V_{ij}^{t_1}}{\sum_i \sum_j V_{ij}^{t_0}}$	Given because the growth rate of certain sectors was higher (or lower) in the territory than the national average. Hence, it is said to measure territorial competitiveness
Net Change (CN)	CN> 0 it indicates that the real variation of the territory was above the hypothetical variation, i.e., what the hypothetical gained by having grown at a higher rate than that of the comparison pattern.	
	CN<0 represents what it hypothetically "lost" by not having varied at the rate of the pattern. In this case, the behavior of the territory in question is below that of the comparison pattern and is therefore in a disadvantageous situation.	

Results

Internal specialization

Overview

- Predominance of specialization in the Real Estate Services and Rental of Movable and Intangible Goods sector across most regions.
- Regional differences in the influence of the manufacturing industry and wholesale trade.

Northwest Region

- *2019: Manufacturing (19.90%), Real Estate Services (10.50%), Construction (9.06%)*
- *2021: Manufacturing (21.11%), Real Estate Services (10.85%), Construction (7.91%)*

Results

Northeast Region

- 2019: Manufacturing (27.06%), Real Estate Services (9.75%), Transportation, Mail & Storage (9.15%)
- 2021: Manufacturing (28.23%), Real Estate Services (10.50%), Transportation, Mail & Storage (9.13%)

West Region

- 2019: Manufacturing (16.61%), Real Estate Services (13.12%), Wholesale Trade (11.14%)
- 2021: Similar trends as 2019.

East Region

- 2019: Manufacturing (20.40%), Real Estate Services (14.56%), Retail Trade (10.29%)
- 2021: Real Estate Services (15.88%), Manufacturing (19.69%)

Results

North Central Region

- 2019: Manufacturing (26.10%), Real Estate Services (10.80%), Wholesale Trade (9.90%)
- 2021: Manufacturing (26.39%), Real Estate Services (11.47%)

South Central Region

- 2019: Real Estate Services (12.35%), Wholesale Trade (9.49%), Financial & Insurance Services (9.07%)
- 2021: Real Estate Services (13.12%)

Southwest Region

- 2019: Real Estate Services (16.26%), Wholesale Trade (8.30%), Construction (7.46%)
- 2021: Real Estate Services (16.56%)

Southeast Region

- *2019: Mining (40.79%), Real Estate Services (8.19%), Retail Trade (7.39%)*
- *2021: Mining (40.94%), Real Estate Services (8.56%)*

Results

External Specialization

Overview

- Identifying preponderant economic activities at the regional level.
- Significant observations from 2019 to 2021.

Notable Trends

- Prominent performance in agriculture and fishing in various regions.
- Mining predominance in the Southeast region.
- Notable increase in the temporary accommodation and food industry in the Northwest region.

Conclusion

- Significant regional specialization in various economic activities.
- High concentration of specialization in the South Central region compared to the national average.

Results

Similarity of Structure

Analysis 2019-2021

- Evolution of the economic structure by region.
- Diversification and specialization coefficients.

Notable Trends

- Mining predominance in the Southeast region.
- Equitable diversification in other regions.
- Significant changes in manufacturing industries and construction.

Conclusion

- Significant patterns and trends in regional economic structure.
- Strengths and potential vulnerabilities in the Southeast region due to over-reliance on mining.

Results

Temporary Permanence of the Economic Structure

Analysis 2019-2021

- Structural changes across various dimensions of the economic structure in each region.
- Restructuring coefficients between 0.02 and 0.04 with significant sectoral differences.

Notable Trends

- Southwest region's marked specialization in mining.
- Oriente region's prominent involvement in the construction sector.
- Significant variation in several sectors across different regions.

Conclusion

- While regions maintained "relatively similar" restructuring, sectoral differences indicate unique economic trends and opportunities.
- Importance of sector-specific regional development policies for equitable growth.

Results

Differential-Structural Analysis: Specialization and Competitiveness

Total Variation/Effect

- Negative total effect indicating growth below national average in all regions.
- Specific regions experiencing a considerable slowdown.

Structural Variation

- Significant variations in structural effects across regions.
- Regions benefiting from specialization in fast-growing sectors despite negative total effect.

Differential Effect

- Regions experiencing both positive and negative trends in Differential Effect.
- Implications for territorial competitiveness and sectoral growth trends.

Conclusion

- Clear dichotomy in territorial competitiveness.
- Need for strategic review and adjustment of economic strategies.

Results

Differential-Structural Analysis: Specialization and Competitiveness

Analysis

- Complex factors influencing net change, incorporating total and structural effects.
- Regions with positive net change indicating sectoral strengths.

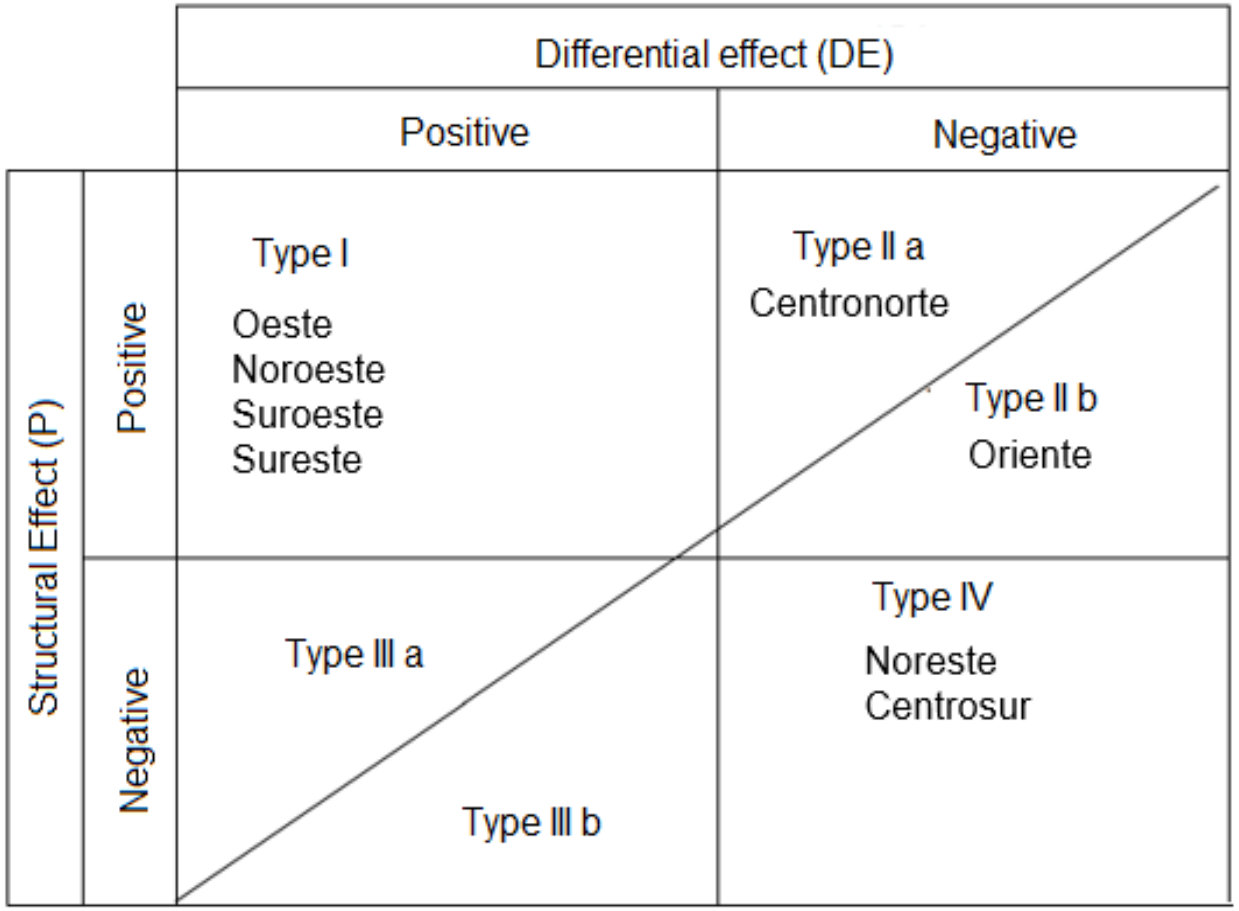
Notable Trends

- Significant negative net change in the South-Central region indicating weak territorial competition.
- Urgent need for strategic review and adjustment in economic strategies.

Conclusion

- Importance of revitalizing competitiveness in the national market.
- Reference to classification of regions according to Boudeville & Montefiore (1966) in Figure 2.
- Note: Each slide could also include visual representations such as charts or graphs to further illustrate the trends and analyses discussed in each section.

Results


Differential effect (DE)
Positive
Negative
Structural Effect (P)
Positive
Negative
Type I
Oeste
Noroeste
Suroeste
Sureste
Type II a
Centronorte
Type II b
Oriente
Type III a
Type III b
Type IV
Noreste
Centrosur

Results

Generic Strategies:

- The Type I regions represented by the Northwest, West, Southwest, Southwest and Southeast regions are leaders with a favorable structure, specializing in SRC industries and proving to be competitive in their activities. Their strategies should focus on maintaining their leadership.
- Type II-a: The North Central region fits into this category, with a positive P value, a positive net change, but a negative DE. Although it has a robust economic structure, it needs to work on improving its competitiveness on the national stage. Strategies should focus on strengthening the sectors where they are encountering challenges.

Results

- Type II-b is the Eastern region in this category, showing a positive P value, a negative net change, and a negative DE. The strategy for this region should focus on improving its competitiveness, while maintaining its specialization in faster growing sectors. This would imply a review and readjustment of its current economic structure to reverse the negative trend in its net change.
- Type IV: The Northeast and South-Central regions are characterized by negative values in all categories (DE, P, and Net Change), indicating an urgent need for strategies aimed at making radical changes both from a structural and competitiveness point of view.

Conclusion

- As mentioned by Corragio (2014), the identification of potentialities in the regions allows the development of public policies aimed at promoting a more social and supportive economic system that reduces socioeconomic inequalities and promotes changes within the economic structure to achieve efficiency and sustainable management of resources. Regional analysis techniques are a tool of great importance for decision-makers in local governments as they provide relevant information on local management processes.

Conclusion

- The most representative sectors that mark the processes of the economic dynamics and structure of the regions in Mexico are Agriculture, animal breeding and exploitation, forestry, fishing and hunting, Generation, transmission and distribution of electric power, water and gas supply through pipelines to the final consumer, Construction, Other services except governmental activities and manufacturing industry.

Conclusion

- Finally, the Northwest, Northeast, East and South Central regions grew at a higher rate than if they had grown at the country's average rate, although in the case of the Northwest region there were problems because its economic structure is oriented towards slow-growth sectors. Meanwhile, the West, North Central, Southwest and Southeast regions grew at a lower rate than if they had grown at the country's average rate; the Southwest region was the most unfavorable, as it presents problems in its competitiveness and specializes in slow-growth sectors at the country level.

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