

Productivity, Human Capital, FDI and Exports: competitiveness in Mexican States

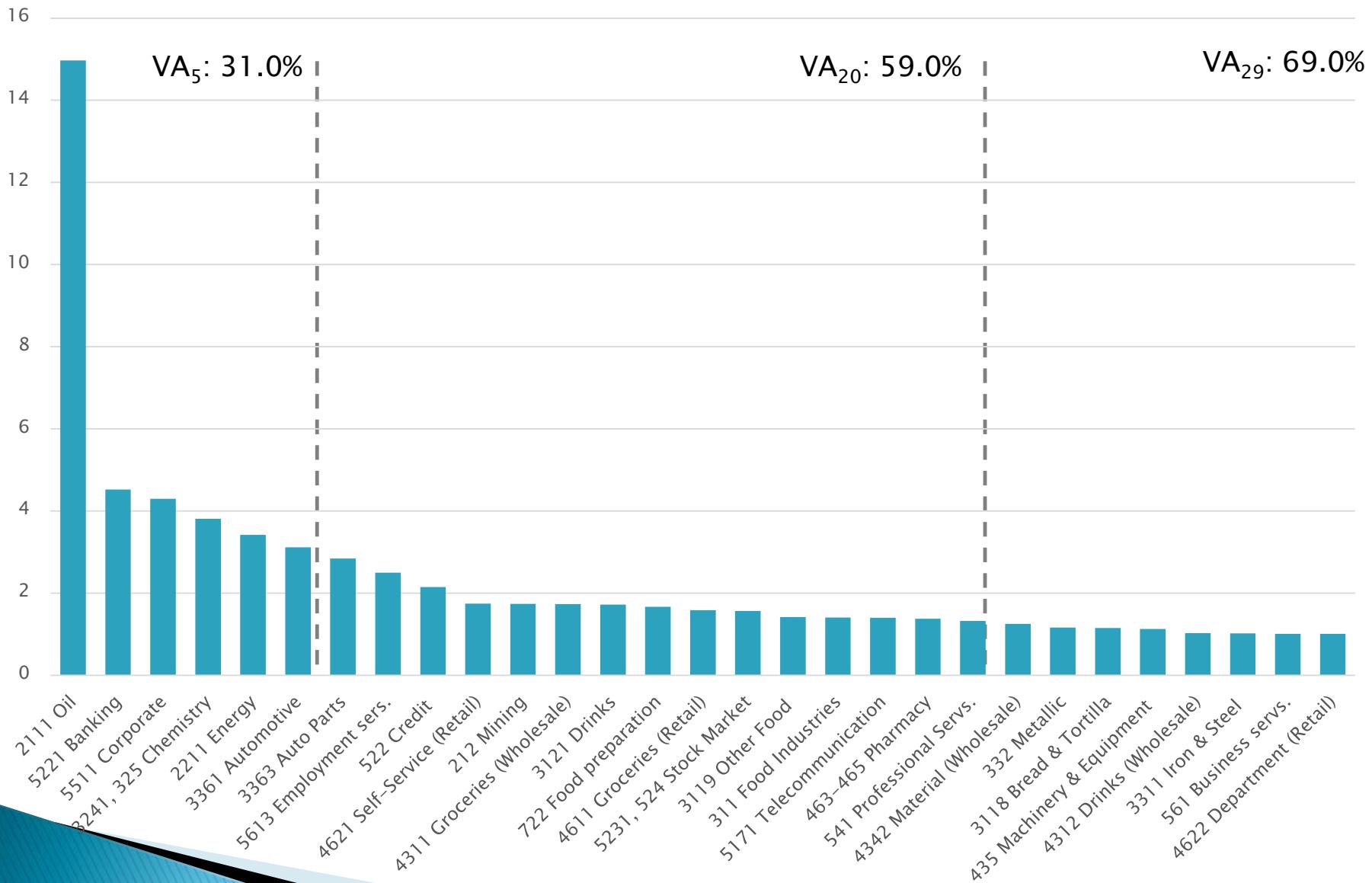
Kurt Unger
CIDE
May 2017

US-Mexico Ties in the 21st Century
Federal Reserve Bank of Dallas and CIDE

Contents

1. Important economic sectors.
2. How to define competitiveness?.
3. Competitiveness in Mexican states
4. Importance of competitive sectors.
5. Competitiveness and diversification.
6. New firms and employment creation.
7. FDI and exports.
8. Competitiveness and remittances.
9. Relative Specialization.
10. Convergence? Differentiated public policy.

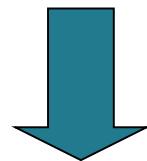
1 – Important Economic Sectors.



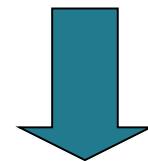
81 sectors = 96.5% VA

2- Competitiveness by Sector

$$C^{**}_{\text{sector}} = \left[\frac{\left(\frac{VA}{L} \right)_{\text{State}}}{\left(\frac{VA}{L} \right)_{\text{Country}}} \right] + \left[\frac{\left(\frac{W}{L} \right)_{\text{State}} - 1}{\left(\frac{W}{L} \right)_{\text{Country}}} \right]$$



Productivity
Advantage



Human Capital
Advantage

3.a - Competitive States

State	%VA	(VA/L)*	(W/L)*	C**
Group I. Competitive and productive				
NL	9.41	1.09	1.15	1.24
DF	30.20	1.15	1.09	1.24
BC	2.58	0.89	1.18	1.06
SON	3.58	0.95	1.04	0.99
COAH	2.54	0.96	1.02	0.99
QRO	2.03	0.96	0.98	0.94
TAM	2.61	0.84	1.03	0.88
MEX	7.71	0.95	0.89	0.85
SLP	1.91	0.94	0.85	0.79
JAL	5.50	0.85	0.93	0.77
BCS	0.46	0.89	0.88	0.77
CHIH	2.74	0.76	1.01	0.77
GTO	4.08	0.89	0.86	0.75
Mean Group I.	75.4	0.93***	0.99***	0.93***
Mean Group II.	24.6	0.7	0.73	0.43

Notes:

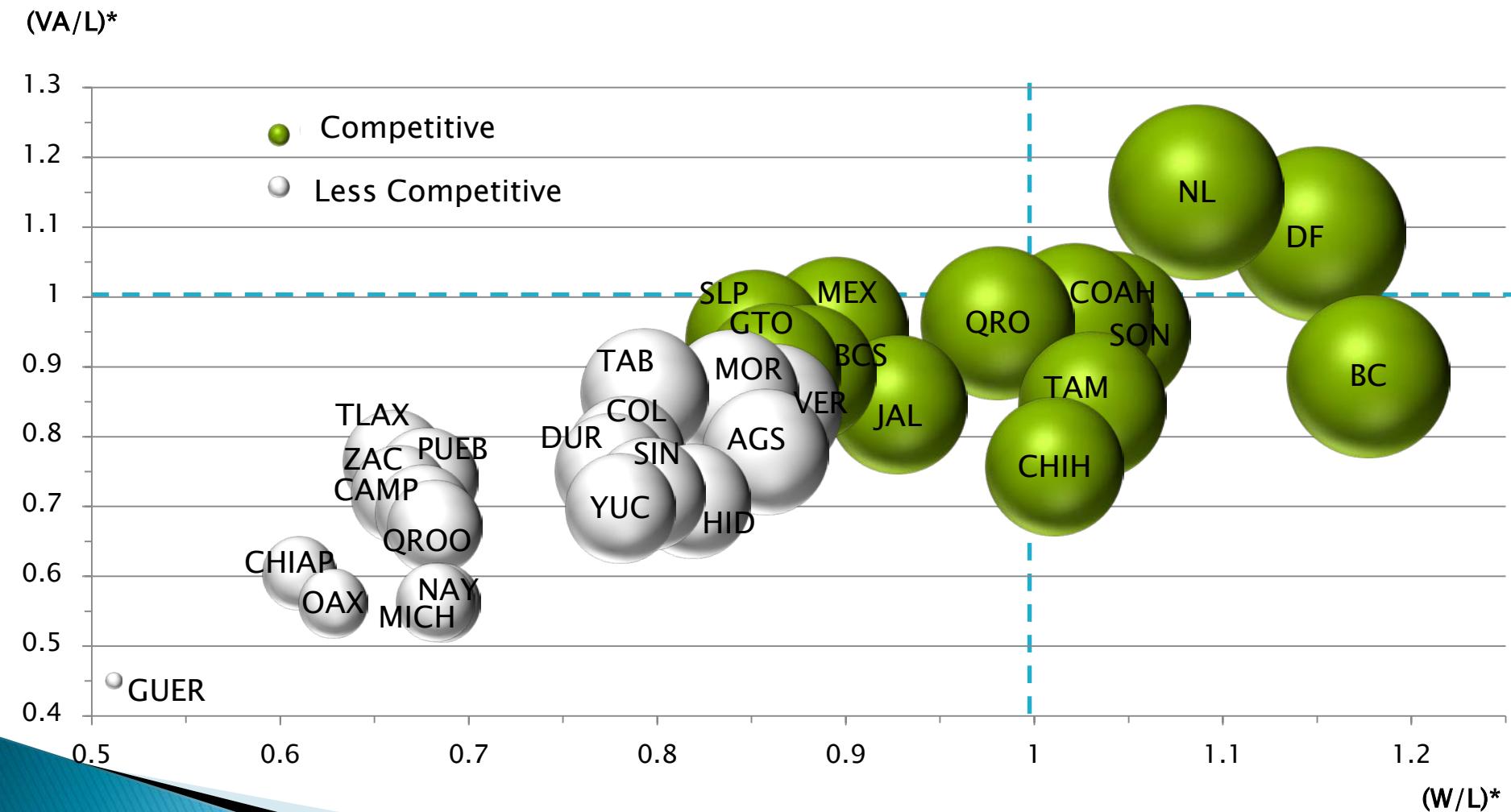
- a. Competitive states: higher productivity & higher wages (human capital)
- b. In Red: new competitive states (2003–2013).

3.b – Less Competitive States

State	%VA	(VA/L)*	(W/L)*	C**
Group II. Less Competitive States				
VER	4.07	0.84	0.86	0.70
MOR	0.97	0.86	0.84	0.70
TAB	1.57	0.86	0.79	0.66
AGS	0.96	0.78	0.86	0.64
COL	0.37	0.77	0.78	0.56
DUR	0.86	0.75	0.78	0.53
HID	1.08	0.71	0.82	0.53
SIN	1.31	0.72	0.80	0.51
YUC	1.22	0.70	0.78	0.48
TLAX	0.45	0.76	0.66	0.42
PUEB	3.17	0.74	0.68	0.42
ZAC	0.99	0.72	0.66	0.38
CAMP	0.54	0.69	0.68	0.37
QROO	0.93	0.67	0.68	0.35
NAY	0.37	0.56	0.69	0.25
MICH	1.36	0.56	0.68	0.25
CHIAP	2.68	0.60	0.61	0.21
OAX	1.07	0.56	0.63	0.19
GUER	0.67	0.45	0.51	-0.04
Mean Group II.	24.6	0.70	0.73	0.43
Mean Group I.	75.4	0.93***	0.99***	0.93***

3.c – Competitiveness: a graphical representation

Two groups of states (*cluster analysis*)

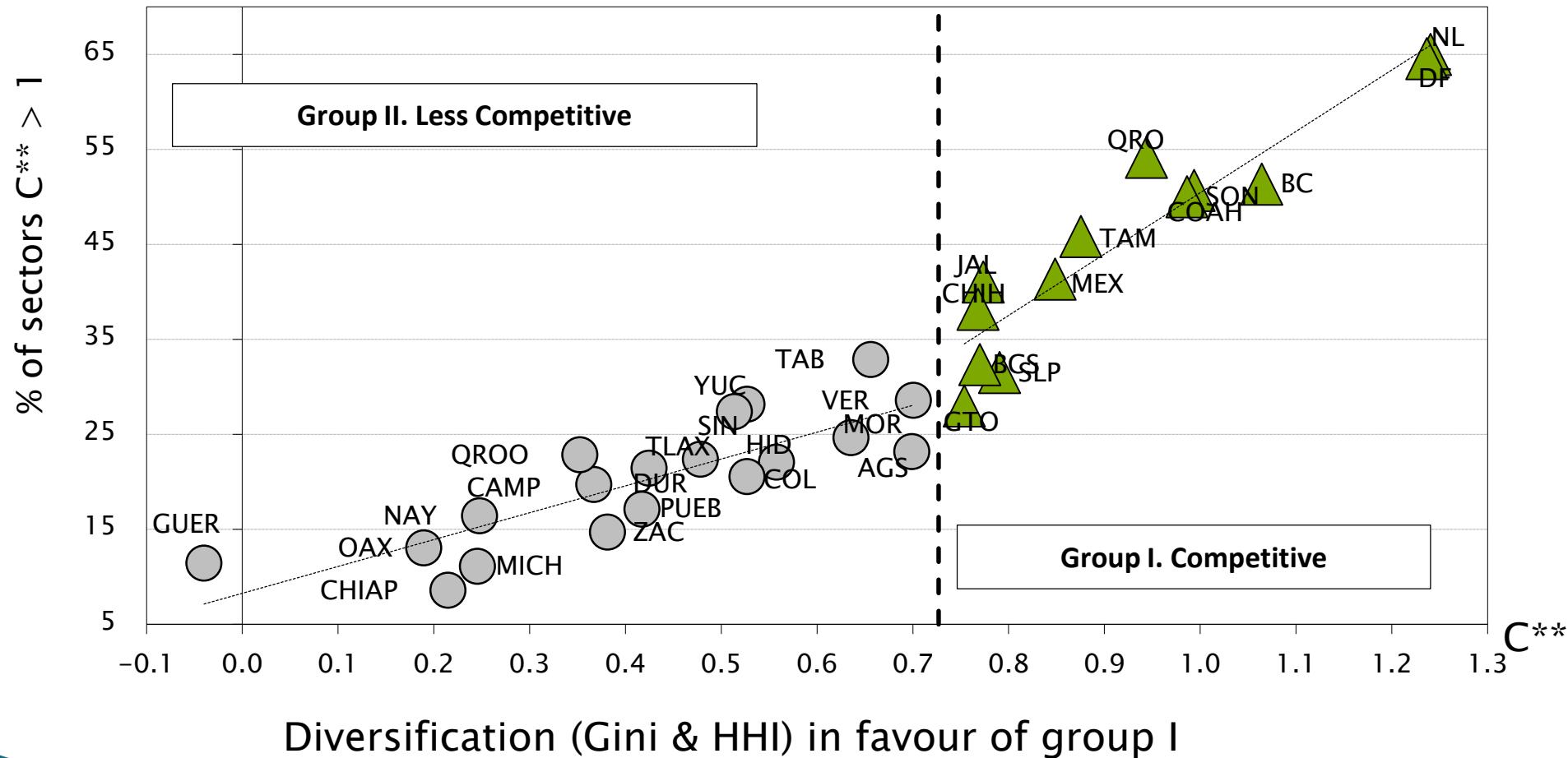


3.d – Competitiveness in a map



4. Importance of Competitive Sectors (2013)

% of competitive sectors: competitive states > less competitive states

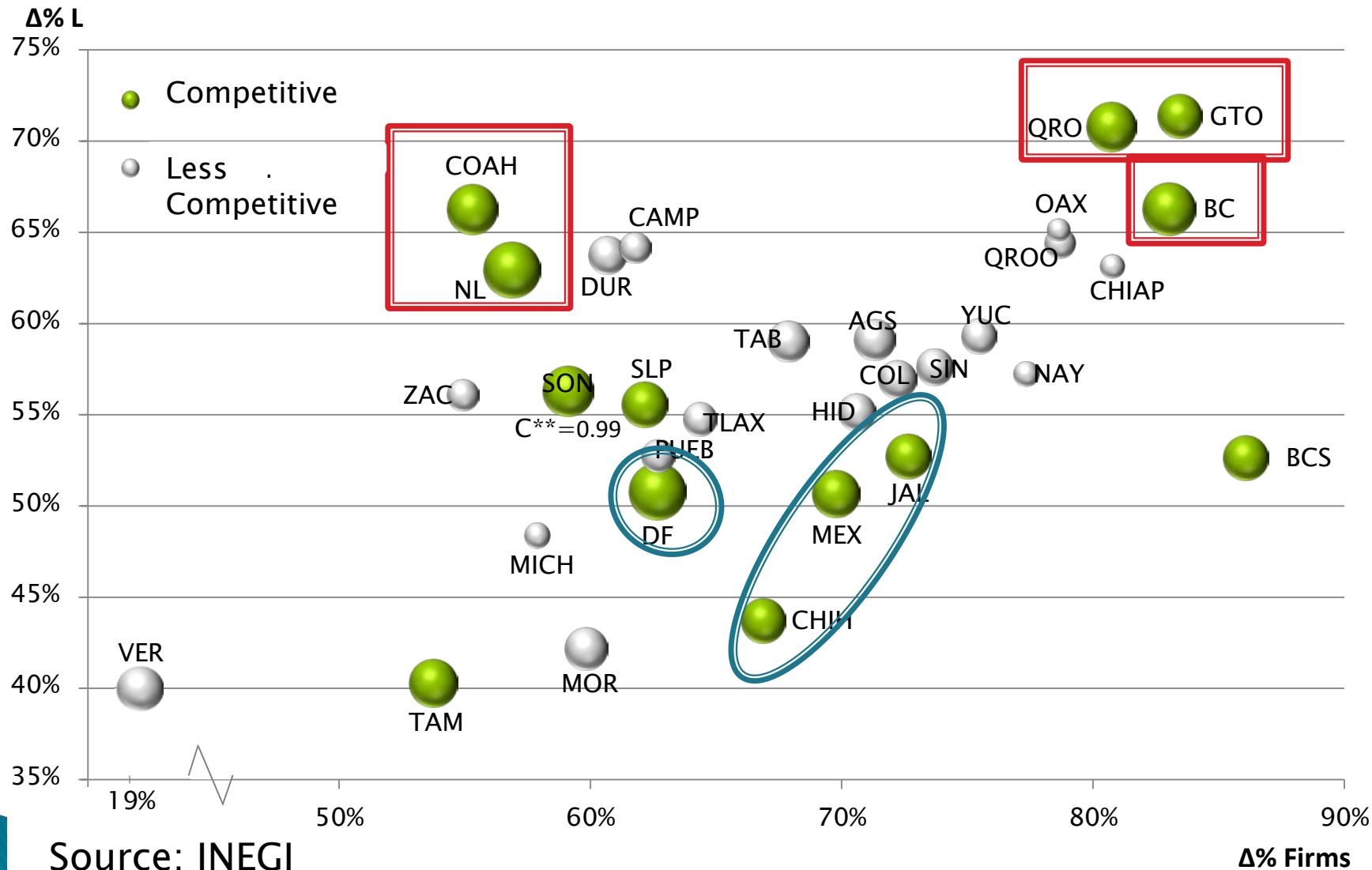


5. Competitiveness and diversification (2013)

State	C**	%act C** > 1	Gini	HHI
Group I. Competitive states				
NL	1.24	66.25	0.604	0.048
DF	1.24	63.29	0.726	0.070
BC	1.06	52.70	0.557	0.034
SON	0.99	50.68	0.688	0.088
COAH	0.99	50.00	0.697	0.064
QRO	0.94	54.17	0.530	0.030
TAM	0.88	45.83	0.647	0.084
MEX	0.85	41.33	0.508	0.026
SLP	0.79	34.25	0.568	0.033
JAL	0.77	42.31	0.495	0.025
BCS	0.77	32.35	0.640	0.044
CHIH	0.77	38.16	0.635	0.070
GTO	0.75	28.00	0.558	0.031
Mean group I.	0.93***	46.10***	0.604	0.050
Media Grupo II.	0.43	20.97	0.668***	0.083**

Competitive states have a more diversified production structure. Less competitive states house fewer competitive activities.

6. New Firms & Employment Creation 2013–2008



7.a Competitiveness & Foreign Investment (U.S Millions x 100, 2016)

State	C**	FDI	% FDI
NL	1.24	26.9	10.1
DF	1.24	55.4	20.7
BC	1.06	14.3	5.4
SON	0.99	5.6	2.1
COAH	0.99	11.9	4.4
QRO	0.94	8.1	3.0
TAM	0.88	11.1	4.2
MEX	0.85	18.3	6.8
SLP	0.79	8.4	3.1
JAL	0.77	18.1	6.8
BCS	0.77	4.3	1.6
CHIH	0.77	19.1	7.1
GTO	0.75	11.6	4.3
VER	0.70	8.5	3.2
MOR	0.70	1.6	0.6
TAB	0.66	2.3	0.8

Source: INEGI

State	C**	FDI	% FDI
AGS	0.64	4.5	1.7
COL	0.56	0.8	0.3
DUR	0.53	2.3	0.8
HID	0.53	3.2	1.2
SIN	0.51	3.3	1.2
YUC	0.48	0.9	0.3
TLAX	0.42	0.9	0.4
PUEB	0.42	10.3	3.9
ZAC	0.38	5.3	2.0
CAMP	0.37	2.0	0.8
QROO	0.35	1.7	0.6
NAY	0.25	0.8	0.3
MICH	0.25	1.3	0.5
CHIAP	0.21	1.1	0.4
OAX	0.19	1.8	0.7
GUER	-0.04	1.6	0.6

Spearman correlation: 0.7714 ***

7.b – Competitiveness & exports (U.S Billions)

States	Exports (2014)	%	C**
NL	29.2	7.67	1.24
DF	21.4	5.61	1.24
BC	40.4	10.61	1.06
SON	17.3	4.55	0.99
COAH	30.5	8.02	0.99
QRO	9.6	2.52	0.94
TAM	27.7	7.26	0.88
MEX	25.0	6.56	0.85
SLP	8.4	2.2	0.79
JAL	21.2	5.57	0.77
BCS	.4	0.1	0.77
CHIH	48.1	12.64	0.77
GTO	13.5	3.55	0.75
VER	7.7	2.02	0.7
MOR	3.3	0.88	0.7
TAB	10.0	2.64	0.66

States	Exports (2014)	%	C**
AGS		7.9	2.06
COL		.4	0.11
DUR		2.4	0.64
HID		4.3	1.15
SIN		2.8	0.51
YUC		2.0	0.54
TLAX		1.4	0.38
PUEB		12.1	3.19
Zac		2.0	0.55
CAMP		24.2	6.37
QROO		.1	0.04
NAY		.5	0.14
MICH		2.9	0.76
CHIAP		1.3	0.33
OAX		1.6	0.41
GUER		.8	0.21
Total		381.3	-0.04

Source: Atlas of Complexity (Harvard)

Spearman correlation: 0.7064 ***

7.c – Competitiveness & Type of Exports

State	Complexity of exports	C**
NL	1.32	1.24
DF	1.01	1.24
BC	1.13	1.06
SON	0.98	0.99
COAH	0.97	0.99
QUER	1.12	0.94
TAM	1.58	0.88
MEX	1.25	0.85
SLP	0.96	0.79
JAL	0.75	0.77
BCS	-0.68	0.77
CHIH	1.25	0.77
GTO	0.32	0.75
VER	0.11	0.70
MOR	0.89	0.70
TAB	-1.01	0.66

Source: Atlas of Complexity (Harvard)

State	Complexity of exports	C**
AGS		0.95 0.64
COL		-0.99 0.56
DUR		0.16 0.53
HID		0.43 0.53
SIN		-0.62 0.51
YUC		-0.19 0.48
TLAX		0.73 0.42
PUE		0.21 0.42
ZAC		-0.10 0.38
CAM		-0.91 0.37
QROO		0.28 0.35
NAY		-0.95 0.25
MICH		-0.18 0.25
CHI		-0.92 0.21
OAX		-0.60 0.19
GUERR		-0.71 0.04

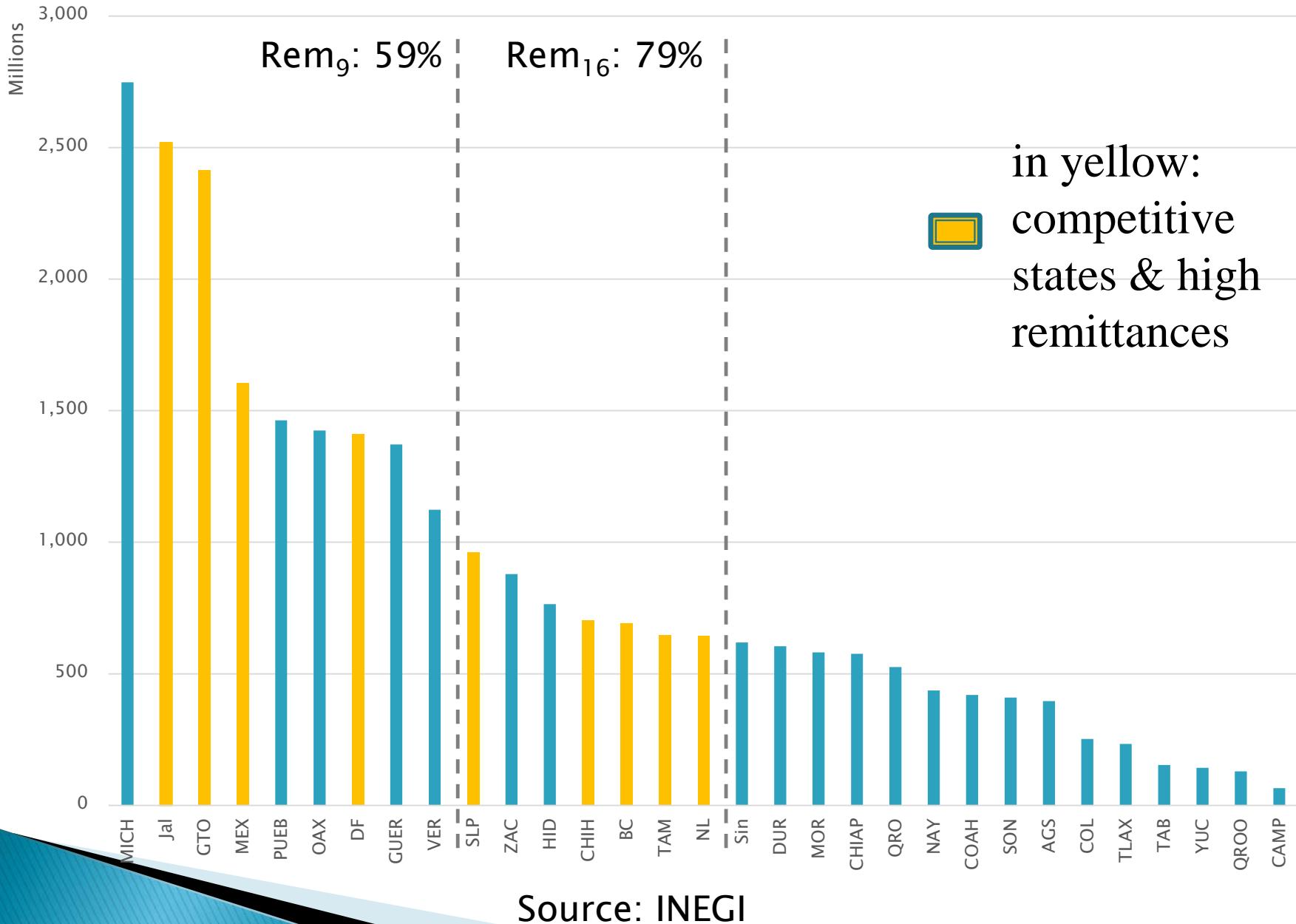
Spearman correlation: 0.759 ***

7.d Main Export Products of border states (%)

	Tamaulipas	Coahuila	Nuevo León	Chihuahua
336 Transport equip.	29.7	67.2	39.4	26.8
334 Computer & comm.	25.9		11.2	43.7
335 Electric appliances	10.3	6.1	16.7	8.3
333 Machinery & equip.	8.3	7.4	8.0	4.8
331 Basic metals		10.0		
339 Other manuf.				7.8
325 Chemicals	9.7			
332 Metal products			4.2	
315 Apparel		0.6		
Sum	83.9	91.3	79.5	91.4

Source: INEGI

8. Remittances & Competitiveness (2016)



9. Relative Specialization, 2013

State	81 sectors	Tradeables	Non tradeables
Group I. Competitive and productive			
NL	0.97	1.08	0.87
DF	0.83	0.62	1.02
BC	1.39	1.95	0.88
SON	1.14	1.64	0.67
COAH	1.09	1.57	0.63
QRO	1.25	1.52	1.00
TAM	1.19	1.43	0.98
MEX	1.14	1.20	1.08
SLP	1.25	1.24	1.26
JAL	1.30	1.38	1.22
BCS	3.94	6.54	1.75
CHIH	1.17	1.55	0.82
GTO	1.24	1.47	1.01
Mean Group I.	1.38	1.79*	1.02
Mean Group II.	1.25	1.16	1.32***

Group I specializes in tradeables, Group II in non tradeables

10 – Regional Convergence? Differentiated public policy.

- ▶ Significant differences between states and regions regarding their competitive conditions.
- ▶ Productivity gains of competitive entities allow to better human capital with high remunerations.

R: Convergence is elusive and slow. Policy implications? Public policy tailored to each situation. How to devise policy for very depressed entities?