

REGIONAL DISPARITIES AND CONVERGENCES IN AMERICA

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Abstract

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This paper analyses the levels and trends of regional disparity and convergence in the two American macro-regions, NAFTA and MERCOSUR. In the case of NAFTA, 95 micro-regions were analysed (12 in Canada; 32 in Mexico; 51 states in the US). In MERCOSUR, the regions are represented by four countries (Argentina, Brazil, Paraguay and Uruguay). The analysis covers the period 2000–2008 (or rather 2000 to 2005 for Mexico).

The regional disparities were calculated with the Gini coefficient based on nominal GDP, GDP per capita and GDP per capita PPS. Convergence analysis was done with the Disparity Range Coefficient (DRC), the Average Disparity Range Coefficient (ADRC), σ -convergence and β -convergence.

The results of regional disparity were as follows. Based on the nominal GDP, it was at high levels in both macro-regions, with a Gini coefficient above 0.55. With the disparities calculated on GDP per capita, the level of regional disparity in both macro-regions was lower at 0.36 in NAFTA and 0.28 in MERCOSUR in 2000. Based on GDP per capita in PPP, the levels were lower than based on the GDP per capita analysis starting at 0.31 in NAFTA and 0.16 in MERCOSUR. The disparities further decreased by half in NAFTA while slightly increasing in MERCOSUR.

The convergence analysis results based on the DRC analysis showed that neither NAFTA nor MERCOSUR regions converged. The speed of divergence varied significantly. The disparities among the richest and poorest regions in GDP per capita increased 6.26 times more than the average GDP per capita in PPP in NAFTA as a whole. It was only 0.52 in MERCOSUR. The ADRC analysis also resulted in divergence trends for both macro-regions but with lower rates. Convergence calculated with the σ -convergence analysis confirmed that both macro-regions diverged. The divergence rate for NAFTA was 1.41% and for MERCOSUR 0.74. Calculated with the β -convergence analysis, the NAFTA region showed a status quo (convergence of 0.01%) and a divergence trend was registered for MERCOSUR (0.99%). At the country level, the micro-regions in Canada were diverging (1.62% per year) while the ones in the US and Mexico converging (0.02% and 0.77%, respectively).

disparity, convergence, regions, NAFTA, MERCOSUR

1 INTRODUCTION

The aim of this paper is to analyse the regional disparities and convergence in North and South America. The regions selected were NAFTA (North American Free Trade Agreement) and MERCOSUR (Mercado Común del Sur, Southern Common Market).

The study follows a similar exercise to that conducted for the macro-region European Union and the macro-regions in Asia (BLÍŽKOVSKÝ, P., 2011a, b).

The regional disparities and their evolution also have an important economic and political aspect. From the global perspective, there is the issue of

¹ The opinions expressed in this article are those of the author alone.

the welfare disparities between the North and South. The comparison of NAFTA and MERCOSUR is instructive in this context. There are recent studies arguing that the gap between the Northern and Southern hemispheres is decreasing. More generally, this discussion is about the emerging and developing countries the catching up with the developed countries.

OECD (2009) argues that there is a global wealth shift due to the spectacular GDP growth in China, Brazil, India and other countries. The study documents that the developing countries have grown faster than the developed economies. At the same time the global 'South-South' economic relations have become much more important in the past two decades. The study also argues that the first decade of the 20th century was a period of convergence on a global scale. The economic crisis which started in 2008 has played its role as well. The study classifies the world economies into new categories of a 'four-speed world': affluent economies, converging economies, struggling economies and poor economies.

Based on the above analysis, one can argue that growth is not shifting between the North and South but rather between the West and East.

The question of economic decoupling of growth trends in developing economies compared to developed ones is an old one. IMF (2008) findings are related to the early phase of the recent financial and economic crisis of 2008 and conclude that there is a divergence but not full decoupling. This means that the growth trends of developing economies is becoming less dependent on the growth development of developed countries.

On the more technical side, the disparities of income distribution are the subject of much literature. Several aspects are studied: the trend of income inequality (SUMMERS, R., 1995), IMF (2007), SALA-I-MARTIN, X. (2006), UNDP (2001), the relation between inequality and growth rate IRADIAN, G. (2005) and specific developments in individual countries or smaller regions.

After analysing the disparities, the next question is whether the regional gaps closing or widening? The literature overview provided in BLÍŽKOVSKÝ, P. (2011a) comes to the conclusion that there is no conclusive answer. A lot depends on the methodology used. Country specific characteristics play their role via public policy options and competitiveness models of the countries.

A convergence scenario was suggested in SALA-I-MARTIN, X. (1995, 2002, 2006), and for the US by UNEL, B.; ZEBREGS, H. (2006). In the case of Canada, KAUFMAN, M., SWAGEL, P.; DUNAWAY, S. (2003) came to the conclusion that differences in per capita output across Canadian provinces have narrowed, albeit less than the disparities in per capita income for the period 1981 to 2000.

An example of the partial convergent developments is the case of Latin America studied by SERRA, M. I.; PAZIMO, M. F.; LINDOW, G.;

SUTTON, B.; RAMIREZ, G. (2006). Their results demonstrate a variety of regional convergence patterns between 1970 and 2003. Convergence was found within some countries. In the case of Chile, Colombia, Peru and Brazil, there was a β -convergence, although at a low rate (1.2% in Chile, 0.08 in Colombia, 1.1% in Peru, 0.6% in Brazil) For σ -convergence, the trend showed some convergence in Brazil (σ -convergence decreased from 0.62 to 0.58). In other cases regional convergence was either very slow or absent. There are however other studies, such as the OECD (2009), which demonstrate the opposite or mixed development.

2 METHODOLOGY

For the purpose of the study, two macro-regions were selected, NAFTA and MERCOSUR. For NAFTA, two levels of analyses were done. One at macro-micro level comparison and one at meso-macro level comparison. There are 95 micro-regions (12 in Canada; 32 in Mexico; 51 states in the US). The micro-regional division is based on OECD statistical classification. The meso-regions are represented by 3 NAFTA countries (Canada, Mexico and USA). In the case of macro-region MERCOSUR, the regions are represented by four countries (Argentina, Brazil, Paraguay and Uruguay) as the necessary data was not available at the micro-regional level.

Concerning data, for NAFTA the micro-regional data were taken from the national statistical offices or from the statistical database of the OECD (<http://stats.oecd.org/index.aspx>). The data available covers the period 2000–2008 for the US and Canada, while only 2000 to 2005 for Mexico. That is why the whole NAFTA comparison was done only for 2000–2005, while meso-regional analysis for the US and Canada covers 2000 to 2008. The data for nominal GDP and GDP per capita provided by the OECD were converted from local currencies using the average annual exchange from the OECD online statistics. Concerning MERCOSUR data, the IMF's World Economic Outlook Database 2009 was used. The sample was 2000–2008. As the macro-regional GDP per capita was not available, it was calculated using the data for the national-level GDP per capita converted to USD. For each year of the sample period the weighting factor was the population of each of the countries, based on the 2008 data.

To evaluate regional disparities, the Gini coefficient was used. The Gini coefficient was calculated on nominal GDP, GDP per capita and GDP per capita PPS. To analyse the convergence four methods were used. Disparity Range Coefficient (DRC) and the Average Disparity Range Coefficient (ADRC) combine disparity and convergence measurements. They are built upon a regression analysis. The regression was constructed in such a way as to capture to what extent the distribution of income at the regional level is affected by changes of the macro-regional GDP over a sample period. The DRC is defined, for a particular year, as the

difference between the maximum and the minimum values of GDP per capita of the micro-region data for the year in question. The ADRC for a particular year was calculated analogically but, instead of the difference between the maximum and minimum values, it calculates the arithmetic mean of the sum of all distances (in absolute terms) between GDP per capita of the macro-region and all the values for the corresponding micro-regional GDP per capita for the year. The detailed description of the above methods is in BLÍŽKOVSKÝ, P. (2011a). On top of this, the σ - and β -convergence was calculated, based on the methodology described in detail by ŽIVĚLOVÁ, I.; PALÁT, M. (2008) and DUFEK, J., MINAŘÍK, B. (2009).

3 RESULTS AND DISCUSSION

3.1 Results for macro-region NAFTA

3.1.1 Disparity analysis

Based on the Gini coefficient at the nominal GDP (Table I), the level of regional disparity was high for NAFTA (0.55–0.66). It was also high inside countries, mainly the Canada. The trend was towards decreasing the disparities.

The level of regional disparity derived on the basis of GDP per capita (Table II) was much lower in NAFTA, at around half the value as in the previous case. It was also low at country level, with the lowest levels in Canada and USA. The trend was clearly

towards closing down the disparities at the macro-regional comparison NAFTA, but not at the country level.

Finally, the level of disparity based on individual income in the PPP (Table III) was also low in NAFTA, between 0.32 and 0.14. It was even lower at the country level, namely in Canada and USA, below 0.18 and 0.14, respectively. This proves that the regional disparity is moderate even in the case when prices and purchasing parity are reflected. The trend was towards decreasing the regional gaps in the NAFTA, and with marginal fluctuations at the country level.

3.1.2 Convergence analysis

Based on regression of the DRC (Table IV), the results show a divergence trend. The parameter was 6.25861 in NAFTA and lower at country level. The speed of divergence varied across countries. The US attested a significant divergence trend (c_2 parameter was 5.5134). This means that as NAFTA macro-regional GDP per capita rises, the inequality between the US micro-region with the highest GDP per capita and its micro-region with the lowest GDP per capita increases as well and 5.5134 times higher. The Canada divergence trend was also high ($c_2 = 3.2599$), while Mexico was the least diverging country ($c_2 = 0.336753$).

The results based on regression of the ADRC (Table V) show a lower divergence trend (NAFTA's $c_2 = 0.4794$). The US had a relatively small divergence trend with the $c_2 = 0.2470$, Canada divergence trend

I: Gini coefficient results for the nominal GDP for the macro-region NAFTA

Region	Gini coefficient (GDP in US Dollars)								
time	2000	2001	2002	2003	2004	2005	2006	2007	2008
NAFTA	0.665716	0.664093	0.662589	0.662564	0.660441	0.658001	0.656204	0.557468	0.554857
Canada	0.654856	0.655249	0.655772	0.651443	0.648604	0.645383	0.641604	0.637279	0.629386
Mexico	0.504941	0.498231	0.501546	0.497234	0.492207	0.493473	0.493524	–	–
United States	0.533122	0.532162	0.530068	0.528880	0.527667	0.528289	0.529035	0.529457	0.528071

II: Gini coefficient results for the GDP per capita for the macro-region NAFTA

Region	Gini coefficient (per capita GDP in US Dollars)								
time	2000	2001	2002	2003	2004	2005	2006	2007	2008
NAFTA	0.362137	0.362443	0.361549	0.362472	0.361548	0.358730	0.144886	0.146203	0.153168
Canada	0.128504	0.138518	0.123779	0.137969	0.148749	0.149975	0.150149	0.158780	0.179508
Mexico	0.260678	0.254447	0.258355	0.255334	0.252008	0.253145	–	–	–
United States	0.131126	0.132209	0.130877	0.130683	0.132094	0.135960	0.140196	0.140631	0.143129

III: Gini coefficient results for the GDP per capita in PPP for the macro-region NAFTA

Region	Gini coefficient (per capita GDP in US Dollars PPP)								
time	2000	2001	2002	2003	2004	2005	2006	2007	2008
NAFTA	0.318454	0.320747	0.319034	0.320894	0.323880	0.323838	0.147407	0.147846	0.154068
Canada	0.128504	0.138518	0.123779	0.137969	0.148749	0.149975	0.150149	0.158780	0.179508
Mexico	0.260678	0.254447	0.258355	0.255334	0.252008	0.253145	–	–	–
United States	0.131126	0.132209	0.130877	0.130683	0.132094	0.135960	0.140196	0.140631	0.143129

IV: Disparity range coefficient for the macro-region NAFTA, years 2000–2006

	Coefficient	t-statistic	p-value
NAFTA	6.25861	10.68455	0.0004
Canada	3.259856	6.498275	0.0029
Mexico	0.336753	2.888408	0.0446
US	5.513355	10.18953	0.0005

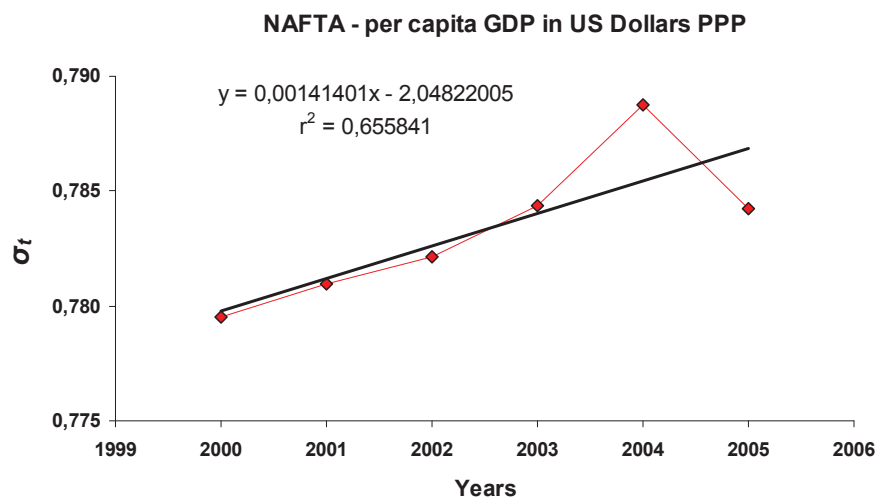
V: Average disparity range coefficient for the macro-region NAFTA, years 2000–2006

	Coefficient	t-statistic	p-value
NAFTA	0.47944	23.11795	0
Canada	0.50564	7.87397	0.0014
Mexico	0.05254	3.639456	0.022
US	0.247009	8.731963	0.0009

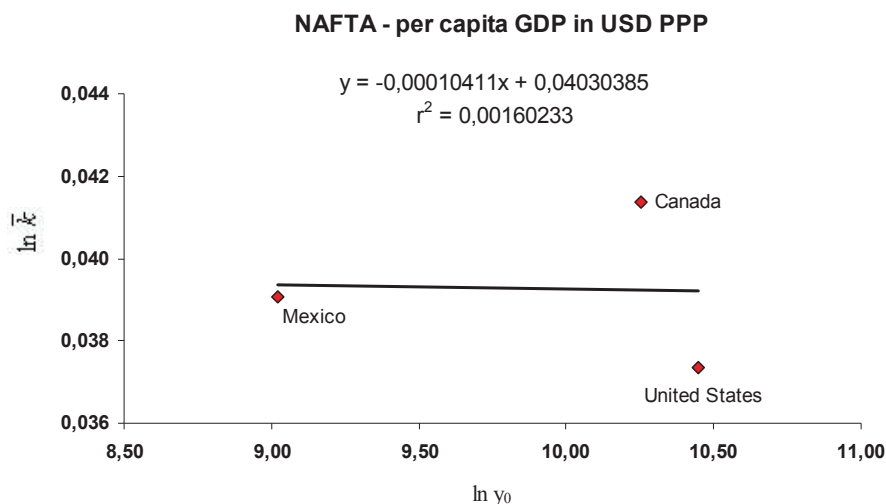
was highest ($c_2 = 0.5056$) and Mexico confirmed to be by far the least diverging country among the NAFTA macro-region, with $c_2 = 0.0525$. The divergence between the average micro-regions vis-à-vis the macro-regional average GDP per capita was smaller than for the whole of the 95 NAFTA micro-regions.

The result based on the σ -convergence (Fig. 1) suggests a marginal divergence trend among the 95 NAFTA micro-regions with an annual rate of 0.14%. The US and Canada also experienced an annual divergence trend, 0.24 and 0.97%, respectively. The convergence trend of 0.28% occurred in Mexico.

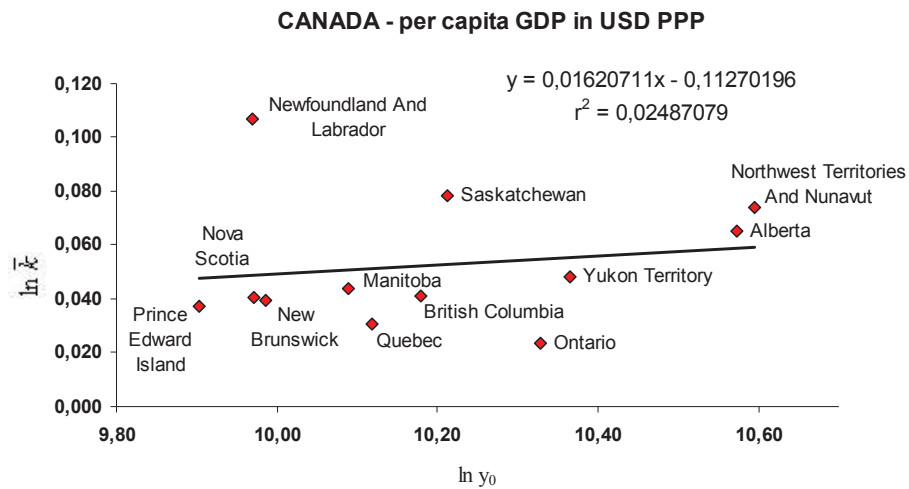
The β -convergence analysis proved that there was no trend in NAFTA (Fig. 2). Inside NAFTA countries there was a trend towards divergence of Canada's micro-regions (annual rate of divergence of 1.62%, low coefficient of determination, Fig. 3), a convergence trend in Mexico (0.77%, low



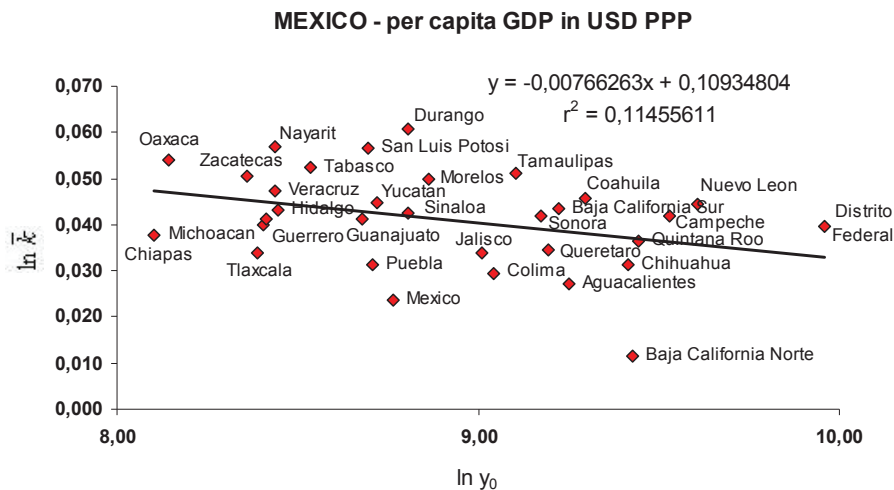
1: The evolution of σ -convergence for the macro-region NAFTA (GDP per capita in Purchasing Power Parity in USD)



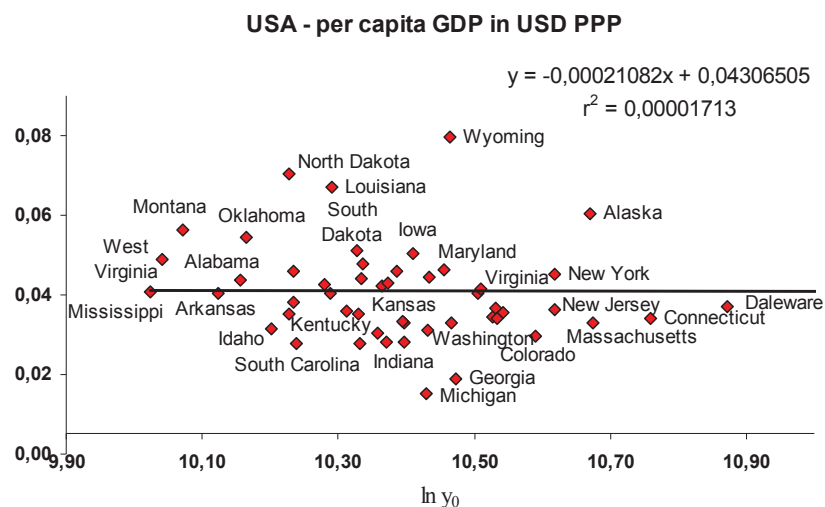
2: The evolution of β -convergence for the macro-region NAFTA (GDP per capita in Purchasing Power Parity in USD)



3: The evolution of β -convergence for the NAFTA meso-region Canada (GDP per capita in Purchasing Power Parity in USD)



4: The evolution of β -convergence for the NAFTA meso-region Mexico (GDP per capita in Purchasing Power Parity in USD)



5: The evolution of β -convergence for the macro-region USA (GDP per capita in Purchasing Power Parity in USD)

coefficient of determination, Fig. 4) and no clear trend occurred in the US (Fig. 5).

In conclusion the DRC and ADRC results suggest divergence while the σ - and β -convergence results suggest that the NAFTA macro-region is experiencing either a limited divergence or no clear trend. At the country level, a limited divergence trend was confirmed by the DRC and ADRC method in all countries, while by σ - and β -convergence analysis Mexico converged, Canada diverged and the results for USA were mixed.

3.2 Results for the macro-region MERCOSUR

3.2.1 Disparity analysis

Based on nominal GDP, the level of regional disparity was high (Table VII) as the Gini coefficient was around 0.6. The trend was towards increasing disparities.

As for disparity based on the individual income (Table VIII), it was lower and ranged between 0.28 and 0.17. Therefore the regional disparities were moderate. Importantly, the trend was clearly towards a narrowing down of disparities.

If calculated on individual income in the PPP (Table IX), the regional disparities were very low, below 0.18. This measure is the most telling, as it compares the individual purchasing power disparities. The trend was towards increasing disparities.

3.2.2 Convergence analysis

DRC analysis (Table X) results in a slight divergence trend, with a value c_2 of 0.5218. It

shows that as the macro-regional GDP per capita rises, the average distance, expressed in GDP per capita, between the macro-regional average and all MERCOSUR countries increases as well. This is however happening at a lower rate than the growth rate of GDP per capita of the whole macro-region. The results are statistically significant only to a certain extent. The results based on the regression of ADRC present a slight divergence trend (speed of divergence was c_2 0.1032). The result of both methods suggests a very limited divergence trend among MERCOSUR.

The results of the σ -convergence (Fig. 6) suggest that a slight divergence trend of an annual speed of 1.00% was recorded among four MERCOSUR countries. Similarly, the β -convergence (Fig. 7) confirms the divergence (annual speed of 1.01%). In conclusion the σ - and β -convergence results suggest that the MERCOSUR macro-region is experiencing divergence of its micro-regional output per capita in PPP. Its annual speed is however slow and has limited statistical relevance.

The overall conclusion is that all four convergence methods suggest that MERCOSUR is tending towards divergence.

By way of discussion of the NAFTA analysis, the results derived for the Gini coefficient when using nominal GDP are high as a whole. The reasons for that might be that it relates to the economic activity of a region rather than individual GDP per capita income. On the other hand, the Gini coefficient results using GDP per capita PPP as a base parameter give almost identical results. This would suggest a low importance of PPP characteristics in NAFTA and thus indicate purchasing power neutrality

VI: Gini coefficient results for GDP for the macro-region MERCOSUR

Gini index (GDP in billions of US Dollars)									
time	2000	2001	2002	2003	2004	2005	2006	2007	2008
MERCOSUR	0.566824	0.556180	0.637615	0.629232	0.630267	0.640199	0.644622	0.645877	0.640363

VII: Gini coefficient results for GDP per capita for the macro-region MERCOSUR

Gini index (per capita GDP in US Dollars)									
time	2000	2001	2002	2003	2004	2005	2006	2007	2008
MERCOSUR	0.282790	0.297008	0.230959	0.186471	0.176016	0.187724	0.182582	0.176006	0.174145

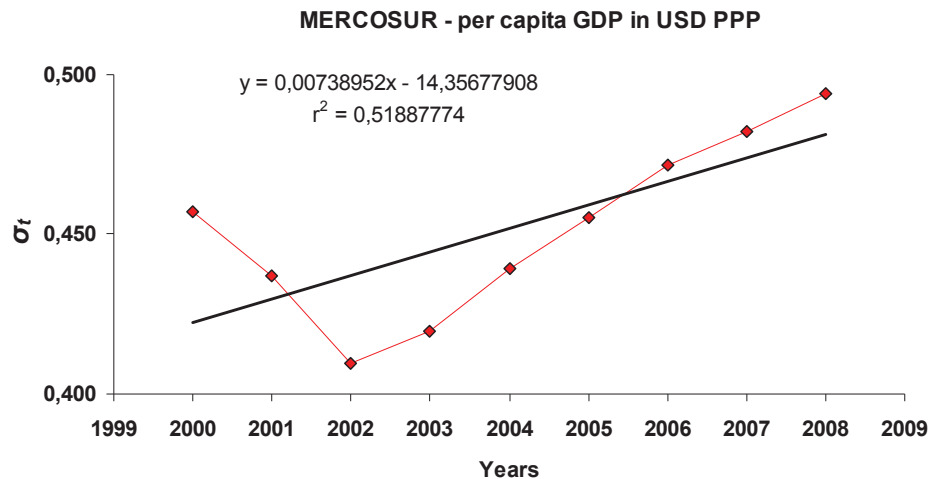
VIII: Gini coefficient results for the GDP per capita in PPP for the macro-region MERCOSUR

Gini index (per capita GDP in US Dollars PPP)									
time	2000	2001	2002	2003	2004	2005	2006	2007	2008
MERCOSUR	0.166275	0.154842	0.129943	0.143224	0.152529	0.164364	0.173316	0.178641	0.182821

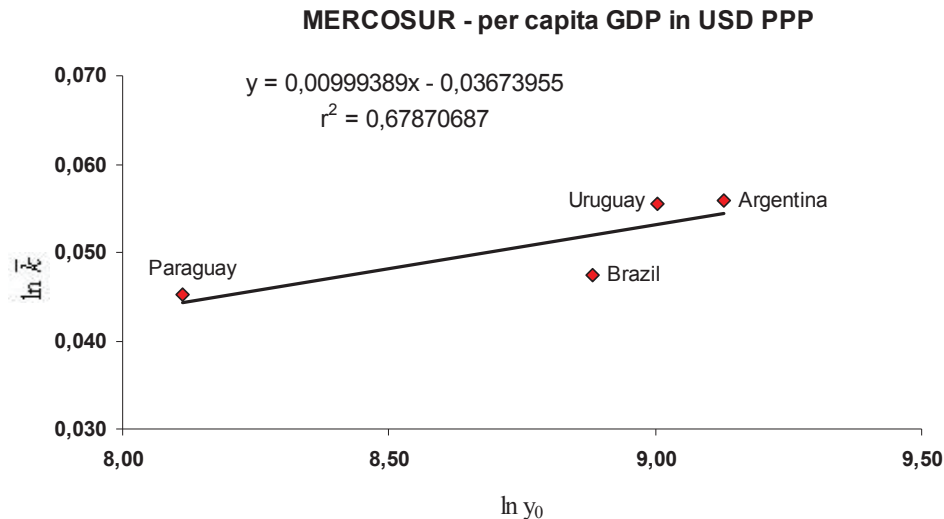
IX: Disparity range coefficient (DRC) and Average disparity range coefficient (ADRC) for the macro-region MERCOSUR, years 2000–2008

	Coefficient	t-statistic	p-value
DRC	0.521781	2.204.444	0.0633
ADRC	0.103154	0.860330	0.4181

(regarding the calculation of the Gini coefficient). Regarding disparity in the countries, the Gini coefficient results, based on all nominal GDP and GDP per capita, followed different paths. If we concentrate on the per capita parameters, there were two countries with low disparities of their micro-



6: The evolution of σ -convergence for the macro-region MERCOSUR (GDP per capita in Purchasing Power Parity in USD)



7: The evolution of β -convergence for the macro-region MERCOSUR (GDP per capita in Purchasing Power Parity in USD)

regions, namely the US and Canada. Mexico on the other hand had very high disparities.

The trend towards closing the micro-regional gap occurs in the poorer country with a high level of disparities, Mexico. This conclusion is somehow contrasting with the results obtained in the EU, where the new Member States with a lower level of GDP per capita had their micro-regions diverging. The explanation for this could be the weaker economic ties of the meso-regions in NAFTA compared to the micro-regions within the EU and thus less of a catching-up effect. In parallel the lower level of inter-regional transfers via the regional policy inside NAFTA can also play its role here.

The outcome of DRC and ADRC-based regressions during the sample period 2000–2005 is that the micro-regions of NAFTA on aggregate and its three members Canada, Mexico and the US are

all diverging towards a less equal distribution of individual income as the macro-regional GDP per capita grows.

The messages coming from this analysis are clear. First, there is a huge divergence within all NAFTA based on DRC. This reflects the evolution of DRC in the two welfare extreme micro-regions, namely the richest (District of Columbia in the US, GDP per capita in 2006 of 69,819 USD) and the poorest (Guerrero in Mexico with GDP per capita in 2006 of 5,464 USD). Second, the results show that the GDP per capita gap between the most and least economically successful micro-regions within the countries is growing. Interestingly, the divergence trend is more pronounced in the countries with higher levels of GDP per capita. The order of divergence trend clearly copies GDP per capita levels, as it is growing from Mexico, to Canada and

the US. The richer the country, the more heterogenic development it exhibits. The core-periphery pattern occurs here. The differentiation of the developments between the two richer countries and poorer Mexico was confirmed as in the DRC analysis.

The σ - and β -convergence results suggest that the NAFTA macro-region is experiencing a limited divergence of its micro-regional output per capita, depending on the methodology used. The eventual limited divergence trend was led by the developments in Canada and partly in the US. Mexico, the poorest NAFTA member, contributed on the other side to minimising this trend.

Concerning the discussion on MERCOSUR, the following can be mentioned. The disparity results suggest a less important effect of the concentration of economic activities among the meso-regions, namely once measured by individual GDP. Measured in PPP, the income per capita shows even less disparity. It attests a further price adjustment of disparities in the meso-regions. The trend goes towards widening the disparities (in GDP per capita) or stagnating (in GDP per capita in PPP). The convergence analysis concluded a relatively slow trend towards divergence. In conclusion and in comparison with the NAFTA analysis, this macro-region can be described as relatively homogeneous in terms of regional disparities. It could provide good potential for closer macro-regional cooperation, at least from the narrow perspective of regional welfare disparity point of view.

Finally, there is one methodological remark to be made. In comparison with the disparity levels and trends in NAFTA and MERCOSUR it is important to note the methodological difference in their calculations, namely the fact that the number of regions in MERCOSUR was lower. It could modify the comparability of the results for both macro-regions.

4 CONCLUSIONS

In conclusion, the regional disparity analysis of the two selected American macro-regions, NAFTA and MERCOSUR, can be summarised as follows.

- Based on the nominal GDP, the regional disparities were at high levels in both macro-regions, with the Gini coefficient above 0.55. At the country level, the lowest disparities were found in Mexico (around 0.5), the mid-level disparity around 0.53

in the US and the highest in Canada (close to 0.65). The disparity trends in both macro-regions differ clearly. The disparities decreased in NAFTA and increased in MERCOSUR. At the country level in NAFTA, there was only a marginal fluctuation.

- Based on the GDP per capita, the level of regional disparity in both macro-regions was lower, half or less compared with the nominal GDP, starting at 0.36 in NAFTA and 0.28 in MERCOSUR. At the country level, the disparity was very low in the US and in Canada (below 0.14 and 0.18 respectively) and around 0.25 in Mexico. The disparity in both macro-regions clearly tended to decreasing (NAFTA to 0.15 and MERCOSUR to 0.17 in 2008). NAFTA country level disparities showed only marginal fluctuations.
- Based on the GDP per capita in PPP, the levels were even lower than based on the GDP per capita analysis - starting at 0.31 in NAFTA and 0.16 in MERCOSUR. The disparities further decreased by half in NAFTA while slightly increasing in MERCOSUR.
- The convergence analysis results can be summarised as follows:
- Based on the DRC analysis, neither NAFTA nor MERCOSUR regions converged. The speed of divergence varied significantly, at 6.26 in NAFTA and only 0.52 in MERCOSUR. In the country analysis, the NAFTA regions also diverged, mainly in the US and in Canada, where the micro-regions diverged 5.51 and 3.25 times quicker than the country GDP per capita grew.
- Based on the ADRC analysis, both macro-regions also diverged but at a lower speed. In both macro-regions the divergence was slower than macro-regional growth. In NAFTA it was 0.48 and in MERCOSUR 0.10. In the country analysis, the NAFTA regions also marginally diverged at a speed of 0.05 in Mexico to 0.50 in Canada.
- Based on σ -convergence analysis, both macro-regions diverged. The divergence rate for NAFTA was 1.41% and for MERCOSUR it was 0.74.
- Based on β -convergence analysis, the NAFTA region showed a status quo (convergence of 0.01%) and a divergence trend was registered for MERCOSUR (0.99%). At the country level, the micro-regions in Canada were diverging (1.62% per year) while the ones in the US and Mexico converging (0.02% and 0.77%, respectively).

SUMMARY

The objective of the study was to analyse the level and trend of regional disparity and convergence in the two American macro-regions, NAFTA and MERCOSUR.

The regional analysis for the NAFTA region was calculated for 95 micro-regions (12 in Canada; 32 in Mexico; 51 states in the US) as well as inside the three NAFTA countries (Canada, Mexico and USA). In the case of the macro-region MERCOSUR, the regions are represented by four countries (Argentina, Brazil, Paraguay and Uruguay). The time period of the analysis covers 2000–2008 for MERCOSUR and for the US and Canada. However, it was only 2000 to 2005 for Mexico (non-availability of data).

To evaluate the regional disparities, the Gini coefficient was used. The Gini coefficient was calculated on nominal GDP, GDP per capita and GDP per capita PPS. To analyse convergence, four methods were used. Disparity Range Coefficient (DRC) and the Average Disparity Range Coefficient (ADRC) combine disparity and convergence measurements. They are built upon a regression analysis. The regression was constructed in such a way as to capture to what extent the distribution of income at the regional level is affected by changes in macro-regional GDP over a sample period. The DRC is defined, for a particular year, as the difference between the maximum and minimum values of GDP per capita of the micro-region data for the year in question. The ADRC for a particular year was calculated analogically but, instead of the difference between the maximum and minimum values, it calculates the arithmetic mean of the sum of all distances (in absolute terms) between GDP per capita of the macro-region and all the values for the corresponding micro-regional GDP per capita for the year. On top of it, the σ - and β -convergence was calculated.

The results of the regional disparity were the following. Based on nominal GDP, it was at high levels in both macro-regions, with the Gini coefficient above 0.55. At the country level, the lowest disparities were found in Mexico (around 0.5), the mid-level disparity around 0.53 in the US and the highest in Canada (close to 0.65). The disparity trends in both macro-regions differ clearly. The disparities decreased in NAFTA and increased in MERCOSUR. At the country level in NAFTA, there was only marginal fluctuation.

With disparities calculated on the GDP per capita, the level of regional disparity in both macro-regions was lower at 0.36 in NAFTA and 0.28 in MERCOSUR in 2000. At the country level, the disparity was very low in the US and in Canada (below 0.14 and 0.18 respectively) and around 0.25 in Mexico. The disparity in both macro-regions clearly tended to decreasing (NAFTA to 0.15 and MERCOSUR to 0.17 in 2008). NAFTA country level disparities showed only marginal fluctuations.

With disparities based on GDP per capita in PPP, the levels were even lower than based on the GDP per capita analysis starting at 0.31 in NAFTA and 0.16 in MERCOSUR. The disparities further decreased by half in NAFTA while slightly increasing in MERCOSUR.

The convergence analysis results based on the DRC analysis showed that neither NAFTA nor MERCOSUR regions converged. The speed of divergence varied significantly. The disparities among the richest and poorest regions in GDP per capita increased 6.26 times more than the average GDP per capita in PPP in NAFTA as a whole. It was only 0.52 in MERCOSUR. In the country analysis, the NAFTA regions also diverged, mainly in the US and in Canada, where the micro-regions diverged 5.51 and 3.25 times quicker than the country GDP per capita grew.

Convergence based on the ADRC analysis also resulted in divergence trends for both macro-regions but at a lower rate. In both macro-regions the divergence was slower than macro-regional growth. In NAFTA it was 0.48 and in MERCOSUR 0.10. In the country analysis, the NAFTA regions also marginally diverged at the speed of 0.05 in Mexico and 0.50 in Canada.

Convergence calculated by σ -convergence analysis confirmed that both macro-regions diverged. The divergence rate for NAFTA was 1.41% and for MERCOSUR 0.74. Calculated with the β -convergence analysis, the NAFTA region showed a status quo (convergence of 0.01%) and a divergence trend was registered for MERCOSUR (0.99%). At the country level, the micro-regions in Canada diverged (1.62% per year) while the ones in the US and Mexico converged (0.02% and 0.77%, respectively).

In conclusion, regional disparities depend considerably on the method used. If calculated on the GDP per capita in PPP basis, it was higher but decreasing in NAFTA and at lower and slightly increasing in MERCOSUR. Regional convergence cannot be confirmed in general in NAFTA and MERCOSUR. However, apart from sharply rising divergences in the richest and poorest micro-regions in NAFTA (more than six times the individual outcome of the macro-region), other convergence measures showed more divergence trends in both macro-regions.

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