STRATEGIES FOR DEVELOPMENT AND INNOVATION IN THE CONTEXT OF REGIONAL INTEGRATION: POLICY OPTIONS FOR SLOVAKIA AND URUGUAY

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Abstract

This thesis explores the strategies for development and innovation of Slovakia and Uruguay, two small, relatively developed countries in two different regions of the world, using the combined methodology of qualitative and descriptive quantitative data. The two countries' membership in supranational bodies in their respective regions, the European Union for Slovakia and the Common Market of the South (Mercosur) for Uruguay, significantly influences their policy options, in both negative and positive ways. The findings regarding the influence of regional integration on the countries' strategies for innovation can be summarized as follows: the European Union offers more opportunities and funding, but also presents many constraints for its small, 'catching-up' members such as Slovakia. Furthermore, the administrative costs associated with EU funds often present significant obstacles to their absorption. On the other hand, Uruguay only benefits from trade intensification and cultural integration resulting from its membership in Mercosur. This is because Mercosur, compared to the European Union model on which it was originally built, suffers from institutional and developmental deficits and asymmetry of power favouring the larger members with little motivation to encourage the innovation activities of the member countries, financially or by deepening economic integration. Therefore, Uruguay might need to explore alternative regional arrangements in its search for developmental support.

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Strategies for Development and Innovation in the Context of Regional Integration: Policy Options for Slovakia and Uruguay

The efficiencies derived from 'learning to allocate' are becoming less important than the flexibility that can be gained from 'learning to learn'. *Lynn Mytelka* [1]

Introduction

A new era in the global economy, when the advantage of efficient mass production is being replaced by the advantage of innovative production, seems to require new strategies for fostering economic growth. Yet not all countries are equally capable of identifying and implementing such strategies. It has been notoriously difficult to classify and characterize a number of small economies which, having only fairly recently undergone transitions from authoritarian regimes to democracy and market economy, are performing relatively well but are still struggling to catch up with the most developed Western countries in many aspects of quality of life. Some of these countries can be seen as successes, even role models within their respective regions, but they still have not achieved the level of economic performance or standards of living enjoyed by the citizens of the world's richest nations. Moreover, these countries can be labelled as 'semi-peripheral', geographically and culturally, which is to say that they have come tantalizingly close but have not yet become full members of the 'First World club' in terms of international influence and participation in global decision-making. Such is the situation of various Eastern European countries from the former Soviet bloc, but also of a number of well-performing countries in Latin America. In the existing literature, the perceptible lack of focus on the comparative performance of these small and 'in-between' or

[1] Mytelka, L. K. (2000) Local Systems Of Innovation In A Globalized World Economy, Industry and Innovation, 7:1, 15-32, p. 4.

'catching-up' countries constitutes an under-researched area to which this thesis attempts to contribute.

Slovakia and Uruguay are instances of the above described developmental 'latecomers'. Both countries have managed to achieve a 'high-income' status as classified by the World Bank Data indicators[2]. Slovakia has even become a member of the Organisation for Economic Cooperation and Development (OECD), although it usually ends up at the bottom of OECD statistics evaluating the welfare, income and quality of public services available to its citizens when compared to the standards of the more developed OECD members. As the 2014 OECD Economic Report states in its assessment, 'Slovakia performs relatively poorly in most measures of material well-being'[3], especially with regards to income, health and employment. Despite being located in different regions, both Slovakia and Uruguay face similar obstacles in their journeys towards development. On the most fundamental level, both countries are searching for new strategies for achieving economic growth.

In this thesis, I focus on the way the two countries approach the design and implementation of a set of policies which are intended to foster innovation, and which are often classified under the umbrella term '*innovation policy'*. In addition, I focus on how the dynamic processes of regionalism and globalization shape the development strategies and innovation policy options of small countries such as Slovakia and Uruguay. In the case of Slovakia, the country's most prominent step towards regionalization was its integration into the European Union in 2004, whereas for Uruguay it was its entrance into the Southern Cone Common Market, or Mercosur,

[2] World Bank Data (2015) Country profiles 'Slovak Republic' and 'Uruguay' [Online. Accessed 10/5/2015] http://data.worldbank.org/country/slovak-republic, http://data.worldbank.org/country/uruguay

[3] Organization for Economic Co-Operation and Development (2014) OECD Economic Surveys - Slovak Republic, [Online. Accessed 10/5/2015] http://www.keepeek.com/Digital-Asset-Management/oecd/economics/oecd-economic-surveys-slovak-republic-2014_eco_surveys-svk-2014-en#page1, p. 7

in 1991 (although competing organizations are emerging in the Latin American region). Both regional bodies have played significant role in its small members' economies.

In the following chapters I attempt to identify, analyse and compare various policy issues related to fostering innovation which are relevant for Slovakia and Uruguay. Principally, I will be concerned with policies aimed at the creation and development of human capital, that is, education, vocational training and labour market policies and policies connected to the areas of research, science and technology. Broader systemic issues such as the institutional environment and market efficiency will also be outlined. Finally, the relevance of regional bodies and their involvement in each of these policies will be evaluated.

With regards to methodology, qualitative approaches are combined with descriptive quantitative data in order to produce a comparative narrative based on empirical findings, as well as theoretical accounts of concepts such as regional integration and innovation. Data are collected from international organizations such as the World Bank, the World Economic Forum and the Organization for Economic Cooperation and Development, as well as secondary analyses conducted by governmental bodies, corporations and academics.

Chapter 1. Comparing Slovakia and Uruguay: Case Selection Rationale

What exactly is the rationale for comparing these two geographically distant countries[4], located on different continents and on opposite hemispheres, which at the first sight have little in common, perhaps except for their peripheral locations? The logic of comparing Slovakia and Uruguay stems from the broader scholarly tradition of comparing the two regions of Latin America and Central and Eastern Europe, which reached the peak of its intensity after the breakdown of Communist regimes and the end of the Cold War. In the early 1990s, the focus was predominantly on comparing and contrasting the political and economic reforms implemented by the countries located in these regions following the breakdown of authoritarian regimes.[5]

1.1. East and South

Arguably, Eastern Europe, as well as Latin America, have undergone incomplete transformations on their way to joining the First World during the past decades. Both could be characterized as semi-peripheral, semi-developed regions, historically strongly influenced by the Western culture and the Christian religion. They have both experienced transition to democracy and capitalism fairly recently and until today, they share similar grievances about democratic imperfection, especially the epidemics of corruption, social inequality, ethnic and gender discrimination, to an extent which would be unthinkable in the more developed Western countries[6]. Countries in both regions attempted to emulate the West by adopting, to varying

[4] 11 723 km, according to Distance from To.net: 'Distance from Uruguay to Slovakia' [Online. Accessed 10/5/2015] http://www.distancefromto.net/distance-from/Uruguay/to/Slovakia

[5] see for instance Nelson, J. (1992) The Politics of Economic Transformation: Is Third World Experience Relevant in Eastern Europe? World Politics, Vol. 45, No. 3 and Cornia, G. A. (2011): Economic Integration, Inequality and Growth: Latin America vs. the European economies in transition UN/DESA Working Paper No. 101

[6] see Transparency International's Corruption Perception Index http://www.transparency.org/cpi2014/results, World Banks GINI index http://wdi.worldbank.org/table/2.9 and UNDP's Gender Inequality index http://hdr.undp.org/en/content/table-4-gender-inequality-index

extents, neoliberal policies in the 1990s, strengthening economic inequalities and causing social unrest[7].

At the same time, there remain many crucial differences between the two regions. Principally, the heritage of Spanish and Portuguese colonialism exercised long-lasting influence on Latin America and created linguistic, cultural as well as commercial ties with its former colonizers, which in many forms remain strong until present day. Furthermore, during the Cold War period, the two regions found themselves on the opposing sides of the Iron Curtain. Countries in Eastern Europe were transformed into socialist republics, and as parts of the Soviet Bloc, their political regimes and economic and foreign policies were heavily influenced by the Soviet Union. On the other hand, Latin America, with the exception of Cuba, was in the sphere of influence of the United States, which actively suppressed any socialist or communist political initiatives in its 'back yard'[8]. During decades, Latin American countries, including Uruguay, were subject to authoritarian rule of right-wing, often military dictatorships with the support of the United States. Nevertheless, after right-wing dictatorships and communist regimes came to an end, both regions seemed to start converging on their way to democracy and capitalism.

In the early post-communist wave of comparative literature of the two regions, scholars used to view the countries as similar in their levels of (under)development and following similar trajectories. Consequently, having observed the rather bleak course of events in Latin America after the transition from authoritarianism to democracy and market economy, they tried to predict the fate of the transitioning Eastern European countries on the basis of the Latin American experience. Eastern Europe indeed did undergo similar transformations of its

[7] O'Dwyer, C., Kovalcik, B. (2007) 'And the Last Shell be First: Party System Institutionalization and Second-generation Economic Reform in Post-Communist Europe'. Studies in Comparative Economic Development Winter 2007, Vol 41, p. 5

[8] Dominguez, J. I. (1999) 'U.S.-Latin American Relations During the Cold War and Its Aftermath' Working Paper Series 99-01January 1999, Weatherhead Center for International Affairs, Harvard University [Online. Accessed 10/5/2015] http://dev.wcfia.harvard.edu/sites/default/files/WCFIA_99-01.pdf

political and economic institutions, although from a different starting position. These transformations were, similarly to the Latin American ones, informed by the then-fashionable neoliberal policy trends[9] and experienced a dramatic drop in welfare and economic activity[10], followed by a gradual recovery in the late 1990s and early 2000s. After this period, the strategy of comparing the two regions seemed no longer relevant and was largely abandoned. However, similarities between the two regions remain, and nowadays, 25 years after the democratic transitions, comparative research on Latin America and Eastern Europe can still be valuable, perhaps even more than before due to the rising regionalism, inter-regional cooperation and continuing globalization. In area studies, regions often tend to be studied in isolation. However, due to increasing interconnectedness and interdependence of economies and the influence of international organizations and transnational corporations, the approach of treating these regions as separate from global processes seems ever less useful. Therefore, bringing countries from various regions together in integrated analyses can provide enriching alternative perspectives. It can therefore prove useful to conduct a comparative exercise of two relatively similar countries from different regions, such as Slovakia and Uruguay.

1.2 Slovakia and Uruguay

My criteria for case selection can be identified as follows: Slovakia and Uruguay are both small, relatively 'high-income' countries and members of supranational regional bodies, but also comparative latecomers to democracy, market economy and development. As will be demonstrated, they also share similar historical trajectories and developmental strategies, as well as common issues which are preventing the success of these strategies. In this work, I

[9] Williamson, J. (2004) 'The strange history of the Washington Consensus' *Journal of Post-Keynesian Economics* Vol. 24 No. 2 ; O'Dwyer

[10] Swaan, W. (1994) 'Behavourial Constraints and the Creation of Markets in Post-Socialist Economies'. Mimeo. Institute of Economics. Hungarian Academy of Sciences, Budapest, 1994
Winiecki, J. (2001) 'An Inquiry into the Early Drastic Fall of Output in Post-Communist Transition: an Unsolved puzzle', *Post-Communist economies*, vol 14, no. 1

compare these countries and their innovation policies. My aim is to shed light on the commonalities which might stem from their similar country characteristics, as well as differences which might emerge due to the divergent geographies and regionalist paths of the two countries. Different formats of regional integration put in place in the two regions also shape their policy options, offering possibilities but also creating obstacles.

When the basic data on Slovakia and Uruguay are compared (see Table 1), it becomes clear that these two countries might in fact have more in common than their respective regions as a whole. Their populations classify both as small countries under 10 million inhabitants, and the comparison of their Gross Domestic Product shows similar levels of economic development. Furthermore, their rankings in the Human Development Index illustrate that both countries enjoy relatively high levels of well-being in terms of longevity, income and education, but there is still considerable space left for improvement when compared to the top performers. With regards to their characterization as 'semi-peripheral', this label can be understood in terms of the countries relative distance from the commercial and political centres of regional decision-making.

Table 1. Basic country data on Slovakia and Uruguay[11]

	Slovakia	**Uruguay**
Population size	5.4 million	3.4 million
GDP per capita (2013) rank/value US$[12]	42 / 17,706	43 / 16,609
Year of democratization	1989 (Czechoslovakia) independent Slovak Republic created in 1993	1985
Unemployment	13.2 %	6.5%
UN HDI 2013: rank/ value [13]	37/ 0.830 (very high)	50/ 0.790 (high)
GINI Index[14]	26.6 (2011)	41.3 (2012)

[11] *sources:* International Monetary Fund (2014) World Economic Outlook Database [Online. Accessed 10/5/2015] http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx
[12] World Economic Forum (2014) The Global Competitiveness Report 2014–2015 [Online. Accessed 10/5/2015] www.weforum.org/reports/global-competitiveness-report-2014-2015
[13] United Nations Development Programme (2014) 'Human Development Index and its Components'. Human Development Reports [Online. Accessed 10/5/2015] http://hdr.undp.org/en/content/table-1-human-development-index-and-its-components
[14] The World Bank (2014) 'World Development Indicators: Distribution of income or consumption, GINI Index' World Bank Data [Online. Accessed 10/5/2015] http://wdi.worldbank.org/table/2.9

(0 = perfect equality)		
Life expectancy	75.4	77.2
Years of schooling (2012) mean/expected	11.6 / 15.0	8.5 / 15.5
Internet users per 100 people (2013)[15],	77.9	58.1
WEF Global Competitiveness Report 2014-2015[16] *(rank out of 144)*	75	80

Even the history of the countries might not be as different as could be imagined. Both countries experienced a period of democracy and relative prosperity in the early 20th century, which was put to an end by authoritarian regimes after the Second World War.[17] Historical parallels continued after democratization in the late 1980's and into the beginnings of the 21st century. The two countries implemented, at least partially, liberalization policies proposed by the Washington Consensus[18]. Moreover, in both countries, these reforms provoked popular backlash and ultimately led to the election of left-leaning governments in the early 2000s: in Uruguay, the *Frente Amplio* ('Broad Front') coalition came to power in 2005, and in Slovakia, the social democratic *Smer* ('Direction') party was elected in 2006[19]. Both countries aim to create and maintain relatively generous welfare states. Uruguay became one of the most socially advanced states in the Latin American region in the 20th century.[20] Similarly, Slovakia carries its ambitious welfare state tradition from the era of communist Czechoslovakia.[21] Nevertheless, after the establishment of a liberalized market economy, it became increasingly difficult to reconcile welfare provision with fostering economic growth.[22]

[15] World Bank Data (2015) Internet users (per 100 people). World Development Indicators [Online. Accessed 20/5/2015] http://data.worldbank.org/indicator/IT.NET.USER.P2
[16] World Economic Forum
[17] Slovakia: Inglot, T. (2008) Welfare States in East Central Europe 1919-2004, Cambridge University Press, p. 133; Uruguay: Arocena, R., Sutz, J. (2011) Uruguay: Higher Education, System of Innovation in (eds.) Goransson, B., Brundenius, C., Universities in Transition, New York: Springer, p. 78
[18] O'Dwyer, Kovalcik, Arocena, Sutz (2011)
[19] Arocena, Sutz, 2011, p. 79, Slovak Government official website (Úrad vlády Slovenskej republiky) (2012) 'Vláda SR od 04. 07. 2006 do 08. 07. 2010', [Online. Accessed 10/5/2015] http://www.vlada.gov.sk/vlada-sr-od-04-07-2006-do-08-07-2010/
[20] Arocena, Sutz (2011), p. 79
[21] Inglot, p. 133
[22] Arocena, Sutz (2011), p. 79

Uruguay is seen as a comparative outlier in its unusually good performance in many policy aspects and quality of life measures when compared to the rest of the Latin American region. On the other hand, Slovakia is an above-average performer when compared to other post-communist countries when it comes to measures of democracy and economic reform[23], but a notorious laggard in statistical indicators within the OECD group. The two countries face the double disadvantage to growth and prosperity by being both small and catching-up. It has to be acknowledged that the differences between the developed and developing countries with regards to their innovation systems is not merely quantitative but reflects deeper underlying gaps. They are usually compared with other countries within the same region, but rarely cross-regionally, although they seem to share various successes and obstacles to growth with small countries elsewhere.

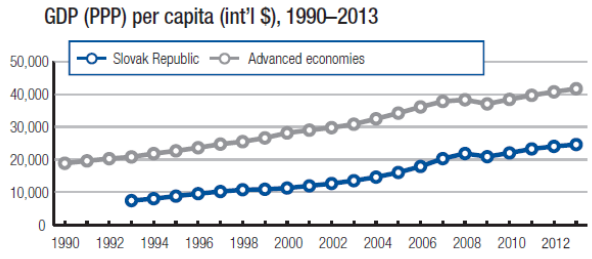
The usefulness of regional comparative perspective might be particularly limited in the case of Uruguay, since it is quite unique in its characteristics within the South American region. It is therefore difficult to find an appropriate country which would be similar enough to make their comparison meaningful. Due to its geographical location, Uruguay is usually compared to its neighbours and fellow Mercosur members, Argentina and Brazil, which are many times larger in their sizes of land area, population and economy. Neighbouring Paraguay, on the other hand, is the developmental laggard of the region and therefore does not share Uruguay's levels of achieved growth and welfare. For these reasons, intraregional comparisons are not very informative for Uruguay, especially for the purposes of policy evaluation and recommendations. Due to the differences among the South American countries, implementation of similar strategies and policy measures might lead to very different outcomes. Slovakia, on the other hand, has experienced similar successes and faces similar

[23] O'Dwyer, Kovalcik, p. 5

struggles. Slovakia and Uruguay and their policies for economic development can benefit from comparisons on the basis of their similarities.

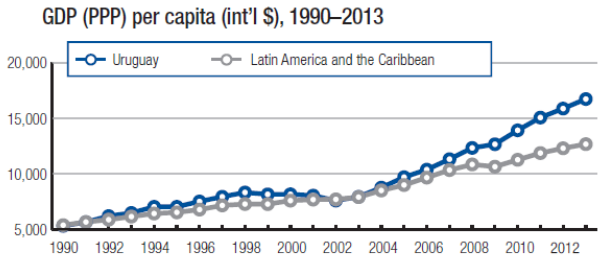
Therefore, the case of Uruguay highlights the danger of excessive reliance on intra-regional comparison: an above-average performer within the region of Latin America, when situated within a global perspective, the regional role-model Uruguay fares much more poorly than it would seem. When compared to a country such as Slovakia, similar in population size and level of development but located in a different region, the Latin American country seems to lag behind quite significantly in various indicators. For instance, Figures 1 and 2 illustrate that different baselines for the comparison of economic performance are employed for the two countries in the *Global Competitiveness Report* published by the World Economic Forum. Since the GDP of Slovakia is compared to the aggregate of the group of 'Advanced economies', the Slovak economy appears to be performing poorly. In contrast, the graph depicted on Uruguay's profile compares the country's GDP to the average of other economies in Latin America and the Caribbean. Naturally, Uruguay appears to be performing unusually well. However, despite these visual distortions, in absolute terms, the GDP of Slovakia is clearly higher than that of Uruguay.

Figure 1. Slovak Republic Profile in Global Competitiveness Report[24]



[24] World Economic Forum, p. 336

Figure 2. Uruguay Profile in Global Competitiveness Report[25]



1.3 Differences and Limitations

In spite of the above-listed similarities, there are various differences between Slovakia and Uruguay which need to be taken into account. Apart from the obvious geographic differences such as Slovakia being landlocked while Uruguay having access to the Atlantic Ocean, a fundamental divergence can be found in the focus of their economic activities: whereas Uruguay's economy depends mainly on services (71%) and food processing[26], Slovakia focuses on industrial production such as manufacture and assembly of electronic equipment and automobiles[27]. However, the two countries are similarly dependent on the performance of their export sectors, and for both it has been indicated that their desired increases in productivity will be functions of research, development and implementation of new technologies in their respective areas of specialization. Therefore, although they focus on different sectors, the two countries have in common an emphasis on the recently recognized importance of innovation for renewed economic growth. Both countries are striving to reorient themselves from efficiency-based towards innovation-based growth[28]. Thus, it is valuable to analyse the

[25] World Economic Forum, p. 380
[26] Central Intelligence Agency (2015) The World Factbook – Uruguay [Online. Accessed 20/5/2015] https://www.cia.gov/library/publications/the-world-factbook/geos/uy.html
[27] Central Intelligence Agency (2015) The World Factbook – Slovakia [Online. Accessed 20/5/2015], https://www.cia.gov/library/publications/the-world-factbook/geos/lo.html
[28] World Economic Forum, p. 336, p.380

innovation strategies of both countries and assess their outcomes in the context of their membership in regional bodies which significantly influence their economies.

1.4 Comparing the European Union and Mercosur

In his comparative study of the two regional bodies, Mikhail Mukhametdinov claims that 'The European Union (EU) and the Common Market of the South (Mercosur) are the two most advanced examples of multilateral regional integration.'[29] Nevertheless, the comparative studies of the European Union and Mercosur are constructed on a fundamental paradox. On the one hand, Mercosur was established as a common market with explicit references to the integration process of the EU and received substantial support and advice from its officials. Like the EU, it was conceived as a 'community' rather than just a NAFTA-style 'free trade area'.[30] Nevertheless, its founding was backed by a rationale very different from that which led to the creation of the European Community forty years earlier. While the original mission of the European Community, which would later become the European Union, was to maintain peace on the continent after two destructive world wars in the 20th century[31], Mercosur was created mainly to reconcile the two principal economic rivals of the region, Argentina and Brazil. Therefore, whereas the European Union makes active and explicit effort to achieve 'cohesion' and convergence in economic performance among its members who enjoy varying levels of development, this aspect is largely absent in its Southern Cone counterpart since there is no imminent need to prevent an international military conflict underlying its establishment. Therefore, for Mercosur countries, the most important consideration in the integration process has been that of maintaining national sovereignty rather than ameliorating inequalities between the member states. Moreover, each of the countries has veto power on proposed policies, which

[29] Mukhametdinov, M. (2007)'Mercosur and the European Union Variation Among the Factors of Regional Cohesion', Cooperation And Conflict 42(2): 207-228, p. 207
[30] Lenz, T. (2012) Spurred Emulation: The EU and Regional Integration in Mercosur and SADC, West European Politics, 35:1, 155-173, p. 161
[31] Mukhametdinov, p. 208

makes agreements on policy harmonisation less likely. Decision-making in the European Union puts more emphasis on compromise, majority voting and political deals and trade-offs, due to various factors including a significantly larger number of member countries: while Mercosur only has four full members, the European Union has reached twenty-eight, with possibilities of further enlargement. In the history of Mercosur, its two largest members have dominated the decision-making process, paying little attention to the interests of the smaller countries.

Mercosur as a whole is debilitated by the prevailing asymmetry of power between the smaller countries and the dominating Brazil, which 'accounts for about three fourths of the total Mercosur population, production and territory.'[32] In contrast, the European Union does not suffer from such drastic asymmetries, although Germany and France are often seen as the two dominant members. Supranational decision-making arrangement is not a realistic option for Mercosur, even if there were political will for such as step, due to the fact that the introduction of fair proportionality of power would also inevitably lead to the 'dictatorship of Brazil'.[33] Paradoxically, although Brazil has great size-induced power advantage, it also has the least economic motivation to participate in market integration with its neighbours:

> For Brazilian economic actors, the capture of 90% of the Uruguayan market is equivalent to expansion just into 2% of the domestic market without the necessity to deal with foreign regulatory obstacles and cultural adjustment of their products.[34]

The negative phenomenon of Brazil's disproportionate power should be partially offset by the advantage of the small number of members of Mercosur, which should make it easier to reach a consensus (although there is still no real guarantee of achieving it). On the other hand, it has

[32] Mukhametdinov, p. 212
[33] Mukhametdinov, p. 213
[34] Mukhametdinov, p. 213

been argued that a larger number of members leads to the diminishing concentration of power and therefore the regional body would benefit from broadening its membership.[35]

Of all Mercosur member countries, Uruguay as the smallest participant is the most economically dependent on intraregional trade[36] (along with Paraguay) and most eager to push towards the creation of supranational institutions.[37] This attitude might seem contradictory, since, as a result of its small size and resulting lack of leverage, Uruguay's voice is easily neglected. To cite an example, the country's ministers' pressures to create a *Mercosur Court of Justice* similar to that of the EU were ignored for years.[38] Mukhametdinov explains this paradox by asserting that although small countries are net losers of integration with regards to commerce, since they lack the scale advantages of their larger fellow members, the costs of non-participation are even higher for them. As a consequence, smaller countries are more eager to push integration forward.[39] On the other hand, as Mukhametdinov further argues, Brazil as the largest member is most likely to resist the pressures for integration since there are hardly any perceptible gains of integration from its perspective that would justify giving up its national sovereignty.[40] In summary, the whole political dynamic of Mercosur seems to be determined by the unequal and tense relationship between Brazil and Argentina. Both countries entered regional integration processes with different motivations and diverged markedly in their attitude towards the U.S. and international organizations. In particular, Argentina, as the weaker of the two, resorted to supporting the alliance with the U.S. whereas Brazil saw the North American superpower as a threat to its dominance.[41]

[35] Doctor, M. (2013) Prospects for deepening Mercosur integration: Economic asymmetry and institutional deficits. *Review of International Political Economy*, 20:3, 515-540, p. 535
[36] Mukhametdinov, p. 210
[37] Lenz, p. 168
[38] Lenz, p. 170
[39] Mukhametdinov, p. 213
[40] Mukhametdinov, p. 213
[41] Mukhametdinov, p. 214

In general, there is a lack of perceived 'common interest' within Mercosur and in its institutions. Even though formally the institutions in Mercosur might bear resemblance to their EU counterparts, they are used as instruments by which the national governments of the member states pursue their individual interests.[42] Therefore, despite the 'political enthusiasm' at the founding of the Southern Common Market, as reported by Lenz[43], in political practice there is a perceptible lack of 'community spirit'. In other words, 'there is more integration rhetoric than action.'[44]

On the other hand, Mercosur has a much higher level of cultural homogeneity than the European Union: only two official languages and a common history lead the member countries to acknowledge a certain common identity. For this reason, Mukhametdinov warns against putting too much weight on the economic aspects of integration (which is demonstrably more intense in the EU) at the expense of cultural and linguistic integration, which has been implemented much more easily in Mercosur.[45] It has been claimed that while Mercosur 'achieved initial success in stimulating intraregional trade growth, in other areas of development it has proved less successful.'[46] However, Mercosur might enjoy specific strengths of its own which the European Union lacks and which might create an advantage in certain innovation-related policies which require common cultural understanding.

With regards to innovation policy, the European Union has recognized the need to support innovative activities in the region and has provided policy recommendations as well as funding support as parts of its full-fledged programme explicitly aimed at fostering innovation, named *Innovation Union*, as part of the Europe 2020 Initiative.[47] European Commission has admitted

[42] Mukhametdinov, p. 215
[43] Lenz, p. 161
[44] Mukhametdinov, p. 224
[45] Mukhametdinov, p. 225
[46] Mecham, p. 384
[47] European Commission (2014) 'Innovation Union: A Europe 2020 Initiative' Official website, last updated 24/11/2014 [Online. Accessed 10/5/2015] http://ec.europa.eu/research/innovation-union/index_en.cfm

the fact that the Union as a whole has been lagging behind in terms of innovative activities in similarly developed regions, for instance the U.S. and Japan.[48] For these reasons, an ambitious action plan has been put into practice, including an initiative to create a so-called *European Research Area*[49], and other activities which are intended to contribute to further development of the free movement of capital and labour within the Single Market, with specific emphasis on the movement and collaboration of researchers and innovative companies. No similar attempts have been exercised in Mercosur. On the contrary, as mentioned earlier, Mercosur has been labelled as a failure with regards to its developmental and social goals which were professed in the founding treaty but never put into practice.

An intriguing account which aims to explain the two regions' different attitudes towards fostering development is articulated by Michael Mecham. He claims that the European strategy of providing developmental aid in order to foster growth was derived from modernization theory, that is, 'confidence in the power of progress, believing that developing countries could achieve the same growth path as the developed world'[50], whereas Latin American integration was informed by dependency theory, which argued against modernization theory and claimed that in fact the actors of global economy in reality perpetuate the unequal and dependent status of underdeveloped regions. The latter region was therefore more oriented towards state intervention and 'inward-looking' protectionist integration for the purposes of defence against external influences.[51] Therefore, the effort to maintain national sovereignty even at the cost of successful international cooperation can be seen as the continuation of the efforts to avoid

[48] Moncada-Paternò-Castello, P. (2011) 'Companies' growth in the EU: What is research and innovation policy's role?' European Commission, IPTS Working Paper On Corporate R&D And Innovation, No. 03 [Online. Accessed 10/5/2015] http://publications.jrc.ec.europa.eu/repository/bitstream/JRC65669/jrc65669_wp%2003-2011.pdf , p. 5
[49] European Commission (2008) 'A more research-intensive and integrated European Research Area: Science, Technology and Competitiveness Key Figures Report 2008/2009' ec.europa.eu/research/era/pdf/key-figures-report2008-2009_en.pdf [Online. Accessed 10/5/2015]
[50] Mecham, p. 371
[51] Mecham, p. 371

dependency.[52] In summary, the roots of Mercosur's inefficiency can be found in its paradoxical stance towards the EU. On the one hand, it was created with explicit references to it as a 'model community'. On the other hand, while its members agreed on striving for the same goals of economic development and social justice, as articulated in the founding Treaty of Asunción, they refused to adopt similar institutional mechanisms for achieving these goals. As a consequence, it can be concluded that 'while Mercosur's treaties incorporate far-reaching commitments, implementation lacks discipline and rules are flouted.'[53]

[52] Mecham, p. 385
[53] Mecham p. 385

Chapter 2. The Relevance of Innovation Policy

The idea of innovation as an essential driving force of the economy has its origins in the theories of innovation-led growth which were articulated by the economist Joseph Schumpeter already at the beginnings of the 20th century in his *Theory of Economic Development*.[54] While the introduction of novel products and processes has always been a well-acknowledged driver of growth and development, the importance of innovation has been stressed even more since the recognition of the need to adapt to the so-called '*knowledge-based economy'* which emerged at the end of the 20th century and continues until present times[55]. This term refers to the idea that modern-day advanced economies increasingly revolve around creating and transmitting knowledge and information, and that the information-based industries are the main drivers of productivity and economic growth. Various documents published by the Organisation for Economic Cooperation and Development refer to this rationale as the 'new growth theory'.[56]According to the document entitled *Knowledge-Based Economy,* which seeks to elucidate this very concept, 'the term emerged due to a fuller acceptance of the place of knowledge and technology in modern OECD economies:[57]

> In new growth theory, knowledge can raise the returns on investment, which can in turn contribute to the accumulation of knowledge. It does this by stimulating more efficient methods of production organisation as well as new and improved products and services.[58]

Related phenomena, also described in the OECD report, are identified as '*learning economy'*, that is, economy in which workers are required to continuously learn and update their skills, and '*information society'*[59], referring to the growing economic importance of generating and

[54] Organisation For Economic Co-Operation And Development (1996) 'The Knowledge-Based Economy' [Online. Accessed 10/5/2015] www.oecd.org/sti/sci-tech/1913021.pdf , p. 11; Schumpeter, J.A. (1934), *The Theory of Economic Development*, New Brunswick, U.S.:Transaction Publishers.
[55] OECD, 1996
[56] OECD, 1996, p.7
[57] OECD, 1996, p.3
[58] OECD, 1996, p. 11
[59] OECD, 1996, p. 3

communicating information[60]. The production and use of information and novel technologies is critical for the productivity growth of both developing and developed countries, and especially so for the in-between countries which seek to close the developmental gap between their emerging economies and the well-established advanced ones as soon as possible, and thus enter the global 'First League' of economies.

The concepts of 'innovation' and 'innovation policy' have been introduced and started appearing in scholarly works and especially OECD policy manuals since the late 1980s[61]. The definitions of innovation itself vary, depending on whether a narrower or a broader perspective is employed. While innovation might encompass a wide range of policy areas, the common element in all definitions is the act of introducing *something new*, be it a product or a process. While some authors locate innovation activities only within the realms of technology and industry, taking place predominantly in the sphere of private businesses[62], Mytelka (among others) employs a complex definition, arguing that innovation can be viewed as:

> *interactive process in which enterprises in interaction with each other and supported by institutions and organizations, such as industry associations, R&D, innovation and productivity centres, standard setting bodies, universities and vocational training centres, information gathering and analysis services and banking and other financing mechanisms — play a key role in bringing new products, new processes and new forms of organization into economic use.*[63]

There are numerous actors in the private and public sectors who can foster (or block) innovation. In other words, although most innovation is believed to take place in the private sector within the realm of firms, Mytelka and others point to the view of the concept of innovation as a phenomenon embedded in an institutional context.[64] According to the author,

[60] OECD, 1996, p. 3
[61] Organisation For Economic Co-Operation And Development (2010) 'Ministerial report on the OECD Innovation Strategy: Innovation to strengthen growth and address global and social challenges' www.oecd.org/sti/45326349.pdf [Online. Accessed 10/5/2015]
[62] see the interpretation of innovation by J. Nelson
[63] Mytelka, p. 5
[64] Mytelka, p. 7

'that context is pre-eminently national and domestic policies have conventionally been viewed as a critical means to orient the behaviour of national actors towards innovation.'[65] Nevertheless, Mytelka also draws attention to the fact that policies and institutions at the supranational, even global levels have gained significant importance in recent decades – including the influence of transnational corporations.[66]

Innovation is usually described and classified according to various criteria: among activities bringing something new for a country, for a firm, or introducing an altogether new element which has not appeared anywhere. Thus, the OECD distinguishes 'three types of novelty: an innovation can be new to the firm, new to the market or new to the world'[67]. Furthermore, Mytelka identifies 'three key elements in the innovation process: linkage, investment and learning.'[68] These elements are supported by various branches of government. Consequently, innovation policies can be identified in various fields, ranging from the support of science and research and development to the creation of human capital by education and training, to policies supporting a healthy and flexible business environment, and to even broader areas such as ensuring a well-functioning financial market and property rights in order to guarantee access to capital.

Innovation policy is often understood as the aggregate of the policies and activities pursued in a country in order to boost innovation, that is, to manage 'the flows and relationships among industry, government and academia in the development of science and technology'. Since the relevant actors and especially the relationships between them are thought to be crucial for national economies, they are identified and studied as constituent parts of the so-called

[65] Mytelka, p. 7
[66] Mytelka, p. 7
[67] OECD, 2010, p. 1
[68] Mytelka, p. 6

'*national innovation systems*'[69]. Within such systems, it is important to study not only the participating actors, but also the linkages that connect them, shape their interactions and ultimately determine whether the innovation efforts of the country succeed or fail.[70]

A lot of innovation takes place as private initiatives of businesses seeking to improve their competitive advantage. Nevertheless, since innovation has been linked to countries' economic growth[71] by the OECD and other international organizations, it has been deemed desirable that governments engage in ensuring a solid underpinning for these initiatives, and also opening up the sector of public administration to the processes of innovation and efficacy improvements:

> Demographic pressures, burgeoning demand, higher expectations and ever tighter fiscal constraints make the public sector seek innovative solutions to enhance productivity, contain costs and boost public satisfaction. The "innovation imperative" is therefore strong for the public sector itself.[72]

International organizations are especially appreciative of the importance of innovation for growth in productivity and overall development of countries. For this reason, they often highlight the importance of innovation policy for the improvement of the countries' economies, and are eager to recommend actions that governments could take in order to support and encourage innovation in the various spheres of public life, as well as in the realm of private businesses. As a consequence, multiple reports, recommendations and funding initiatives have been put in place in recent years. The increased interest in the concept of national innovation has created a need to devise coherent theory and measurement techniques. This led to the publication of the so-called Oslo Manual of '*Proposed Guidelines for Collecting and*

[69] OECD, 1996, p. 7
[70] Edquist, C., Hommen, L., eds. (2008) Small Country Innovation Systems Globalization, Change and Policy in Asia and Europe, Cheltenham: Edward Elgar Publishing, p. 17
[71] OECD, 1996, p. 3
[72] OECD, 2010, p. 19

Interpreting Technological Innovation Data'[73] by the OECD and to the creation of the web resource entitled '*Innovation Policy Platform'*, jointly produced by OECD and the World Bank Group[74]. Moreover, the '*Competitive Industries and Innovation Program'*[75], funded by various regional groups and a number of national governments, seeks to 'enhance economic growth, propel the creation of jobs, and maximize client countries' capacity to design and implement pro-growth investments by helping shape public policies and by helping design investment programs that promote competitiveness and innovation within and across industries.' This statement of purpose defines very well the perceived relationship between innovation and well-being, that is, economic growth by means of enhanced productivity and development and employment of human capital. The value of analysing a set of policies rather than focusing on a single one lies precisely in their interconnectedness and the interdependence of the outcomes, as indicated by the concept of an innovation *system.*

In summary, innovation has been linked to economic growth and is seen as a valuable goal which is to be fostered by both national governments and international organizations, including regional bodies such as the European Union, Mercosur and others. Whether it is possible to identify 'best practices' in the area of innovation policy remains a disputed issue. Whereas the OECD report on Knowledge-Based Economy states that it is the mission of OECD to discover such policies in science, technology and industry for knowledge economy[76], Edquist and Hommen insist that because of the uncertainty of outcomes in the innovation process, it is impossible to assess innovation policy with relation to an optimal or ideal policy.[77] The very

[73] Organisation for Economic Co-operation and Development (1992, 1996, 2005) Oslo Manual: Proposed Guidelines For Collecting And Interpreting Technological Innovation Data [Online. Accessed 20/5/2015] http://www.oecd.org/science/inno/2367580.pdf
[74] Organisation for Economic Co-operation and Development, The World Bank (2013) Innovation Policy Platform [Online. Accessed 20/5/2015] https://innovationpolicyplatform.org/
[75] World Bank Group (2015) Competitive Industries and Innovation Program [Online. Accessed 20/5/2015] https://www.theciip.org/node/3
[76] OECD, 1996, p.3
[77] Edquist, Hommen, p. 458

concept of an optimal innovation policy is seen as meaningless by these authors. However, it has also been pointed out that 'to discard the ''ideal system'' does not mean that the concept has no reference to what is ''good'' or what is ''bad'''[78].For this very reason, innovation policy of a country can only be evaluated against its outcomes and in relation to other countries' policies. In short, comparative analysis is indispensable.

2.1 The Importance of Innovation for Small Countries

Small countries, such as the ones dealt with in this paper, are believed to be in an especially precarious situation when it comes to fostering growth and innovation, due to their limited market size and vulnerability to outside pressures. For these reasons, policy reforms and above all openness to technology flows are of crucial importance for the economic development of smaller countries.[79] As Kesidou and Romijn assert, 'economies of limited size redefine their position and search for those advantages that will enable them to compete in the new era.'[80] Innovation is crucial to their successful redefinition. However, the authors also explain that it is no longer easy to imitate the successes of countries like South Korea and Taiwan, since globalization and liberalization have led to a limitation of the involvement of state in development.[81]

The small size of a country creates inherent limits to most aspects of innovation policy. Among these are smaller national budget, smaller tax base and fewer opportunities for investment. For these reasons, none of the elements shaping the overall innovation climate must be neglected. Apart from the obvious innovation-related policies such as R&D, education and industrial

[78] Arocena, R., Sutz, J. (2000b) Looking At National Systems Of Innovation From The South, *Industry and Innovation*, 7:1, 55-75, p. 58
[79] Organisation For Economic Co-Operation And Development (2000) 'Science, Technology and Innovation in the New Economy' [Online. Accessed 10/5/2015] www.oecd.org/science/sci-tech/1918259.pdf p. 8
[80] Kesidou. E., Romijn, H. (2005) Local Knowledge Spillovers and Innovation: The software cluster in Uruguay, 3rd Globelics Annual Conference - Africa 2005 Working Paper, [Online. Accessed 10/5/2015] http://www.academia.edu/1796493/Local_knowledge_spillovers_and_innovation_The_software_cluster_in_Uruguay, p. 1
[81] Kesidou, Romijn, p. 2

policy, the OECD report mentions overarching themes like the overall business climate, competition, financial markets but also more distant but still fundamental aspects such as macroeconomic policy and functioning communications and transport infrastructures.[82] Supporting small and medium-size enterprises and start-up firms is also essential, since these might be more prone to exploiting new technological possibilities than older and established firms.[83] Countries like Uruguay and Slovakia suffer from insufficient R&D funding, brain drain and exploitation of cheap labour by multinational companies, which locate much of capital-intensive work in these countries but much of their research and innovation activity remains in their home bases. In addition, a number of issues regarding the 'supporting elements' of innovation, such as bureaucratic barriers which thwart the ease of doing business, seem to be particularly detrimental for the two countries.[84] Furthermore, the membership of small countries in regional groupings and international organizations poses both opportunities and challenges to the development of innovation.

2.2 Innovation in the Context of Globalization and Regionalization

'*How can the government select those interventions that might have a large positive impact in their territory when innovation activities are becoming increasingly global?* '[85]

Edquist and Hommen, in the last chapter of their book comparing various national systems of innovation, discuss the impact that the processes of globalization and regional integration might exert on innovation policies within the national innovation system. [86] Referring to the available literature on the subject, they state that although these supranational processes undoubtedly challenge and transform the national systems, innovation is still likely to continue taking place

[82] OECD, 2000, p. 8
[83] OECD, 2010, p. 11
[84] World Economic Forum Report: Slovakia p. 336, Uruguay p. 380
[85] Edquist, Hommen, p. 464
[86] Edquist, Hommen, p. 454

principally at the level of the nation-state. Their conclusion is supported by the argument that 'interactive learning and innovation will be easier to develop when the parties involved originate in the same national environment – sharing its norms and culturally based system of interpretation'[87]. Their main findings indicate that instead of leading to convergence of innovation strategies across countries, globalization has in fact reinforced diversification and divergent approaches, even within the same industrial sectors.[88] Thus, the authors tentatively interpret the evidence as indicating that 'globalization does not erode NSI or render them incoherent,' due to the fact that 'national characteristics and strategies have been crucial in processes of globalization'[89]. Opening up markets and reducing barriers leads to increased market size and easier diffusion of knowledge, which is especially crucial for smaller countries.[90] As a consequence of trade opening, production and competition is increasingly globalizing as well.[91] Knowledge, technology and foreign investment flow more freely and thus liberalization acts as a catalyst to speed up the pace of change.[92]

The value of comparing different regional organizations from different parts of the world can be traced to their well-acknowledged tendency to emulate each other, above all with regards to using the European Union as a model.[93] Nevertheless, there are many important differences between the two bodies which will be the focus of comparative analysis, that is, the EU and Mercosur. The number of countries involved is very small in the case of Mercosur, which is comprised of Argentina, Brazil, Uruguay and Venezuela as full members (since 2011). In contrast, the European Union has grown to include 28 countries. Moreover, whereas the EU is the principal regional body in the continent, in the Americas, and in Latin America in particular,

[87] Edquist, Hommen, p. 454
[88] Edquist, Hommen, p. 456
[89] Edquist, Hommen, p. 457
[90] OECD 2010, p. 14
[91] Mytelka, p. 3
[92] Mytelka, p. 3
[93] Lenz, p. 161

there has emerged a multitude of contending regional projects. Mercosur, established in 1991, was since its beginnings conceived as an inter-governmental initiative meant to foster economic integration without planned steps towards policy harmonisation or transfer union.

A common market, envisioned and partially implemented by both Mercosur and the European Union, aspires to a free movement of goods, services, capital and labour. The advantage of regional groupings lies in their provision of market access and funding. In addition to financial aid, regional bodies have the potential to help intensify cross-country connections in the fields of trade and research which can lead to technological and information spill-overs. On the other hand, resulting worker mobility may lead to the flight of human capital, especially that of highly skilled labour such as medical professionals and IT specialists, from low-wage countries to high-wage ones.

2.3 European Union: Structural Policy

The developmental policy pursued by the European Union has as its goal gradual convergence between the more and less developed countries and regions among its members. According to Horvat and Maier, this policy has been devised with reference to the endogenous growth theory of Grossman and Helpman[94]. The so-called structural funds provided by the EU are meant to gradually mitigate the differences between the more and less advanced economies. In fact, public and private investment has been labelled as the principal instrument used by the EU to initiate economic growth in the less developed regions.[95] For instance, after the Eastern Enlargement of the Union, which took place in 2004-2007 and involved the accession of the four Central European countries, three Baltic countries and Bulgaria and Romania, funding

[94] Horvat, A., Maier, G. (2004) 'Regional development, Absorption problems and the EU Structural Funds'. European Regional Science Association: ERSA conference papers [Online. Accessed 10/5/2015] http://www-sre.wu-wien.ac.at/ersa/ersaconfs/ersa04/PDF/591.pdf , p. 2

[95] Hapenciuc, C.V. et al. (2013) 'Absorption of Structural Funds International Comparisons and Correlations'. Procedia Economics and Finance 6, 259 – 272, p. 260

was offered to the new members from various sources such as European Regional Development Fund, Cohesion Fund and European Social Fund.[96] Nevertheless, benefitting from these available resources is not automatic, since authors studying the absorption problems associated with EU funds mention that their implementation processes can be 'long, cumbersome and demanding on human resources'[97]. Therefore, making use of the funds offered by regional bodies may depend on the administrative capacity of the recipient countries – which may be particularly problematic for countries known for their burdensome bureaucracy, such as Slovakia[98]. Thus, accession to the European Union brings undeniable benefits, but it also imposes many costs in the form of policy harmonisation and the acceptance of the Community rules. A new member needs to adopt policies and implement procedures which had been devised without its participation – which also applies to the very absorption process of the structural funds.[99] On the other hand, as will be demonstrated, the absence of an equivalent cohesion policy in Mercosur makes gradual convergence of its members' economies even less likely and the drawbacks of economic integration become even more acute.

[96] KPMG (2013) EU Funds in Central and Eastern Europe 2007-2013 https://www.kpmg.com/SI/.../EU-Funds-in-Central-and-Eastern-Europe.pdf [Online. Accessed 10/5/2015] , p. 16
[97] Horvat, Maier, p. 23
[98] see World Economic Forum's 'Institutions Indicators', Table 10
[99] Horvat, Maier, p. 23

Chapter 3. Overall Innovation Performance of Uruguay and Slovakia

Generally speaking, innovation levels of both Slovakia and Uruguay are believed to be rather low[100] and in need of renewed efforts of policy initiatives. The stagnating levels of performance are attributed to low levels of spending, lack of necessary skills and unwillingness of firms to invest in R&D.[101] In both countries this need has been recognized and innovation strategies have been implemented by their governments in the first decade of the 21st century.[102] In Slovakia, the initiative was closely tied to its membership in the European Union, since its principal innovation-focused document, 'Strategy of Competitiveness Development in Slovakia up to 2010' was produced as an instrument to implement the EU-wide Lisbon Strategy for growth and development.[103] The international dimension of enabling innovation cannot be underestimated, since the need for innovation is often accompanied by the need for openness to foreign investment.[104] However, not all regions respond to such need in the same way – and the differences between the approaches towards this issue can prove crucial in the long run.

According to Christopher Freeman, the divergence of the national innovation systems between East Asia and Latin America in the 1980s seems to have determined the current developmental gap between the two regions, where Latin America ended up significantly worse off. As described in Arocena and Sutz, the main divergences occurred in the realms of education and

[100] Aboal, D. , Garda, P., Lanzilotta, B, Perera, M. (2011) 'Innovation, Firm Size, Technology Intensity, and Employment Generation in Uruguay'. Inter-American Development Bank: Centro de Investigaciones Económicas – Uruguay [Online. Accessed 10/5/2015] services.iadb.org/wmsfiles/products/Publications/36486104.pdf , p. 13

[101] Arocena, R., Sutz, J. (2000a) 'Interactive Learning Spaces and Development Policies in Latin America' Universidad de la República, Druid's Summer Conference on the Learning Economy Rebild/Denmark, 15-17 June, 2000. www3.druid.dk/wp/20000013.pdf [Online. Accessed 10/5/2015], p. 11

[102] Hausmann, R., Rodríguez-Clare, A., Rodrik, D. (2005), "Towards a strategy for economic growth in Uruguay", Economic and Social Study Series, Inter-American Development Bank

[103] Bruncko, M. (2005) Slovak Competitiveness: Implementation of Lisbon Strategy, Ministry of Finance of the Slovak Republic [Online. Accessed 10/5/2015] http://www.finance.gov.sk/EN/Components/CategoryDocuments/s_LoadDocument.aspx?categoryId=115&documentId=43

[104] Mytelka, p. 4

science and technology infrastructure: 'expanding education systems with high participation of tertiary education vs. deteriorating education systems, and development of strong science and technology infrastructure vs. weakening of science and technology infrastructure.'[105] These differences were identified as the principal causes of the divide between the regions which found themselves at roughly the same levels of underdevelopment in the mid-20th century. Afterwards, many East Asian economies experienced a period of dramatic growth, whereas the situation in most Latin American countries kept stagnating or even deteriorating. Arocena and Sutz explain this phenomenon by the lack of functioning relationships between universities, industry and government which have been called the "Triple Helix"[106] which should be conducive to a learning society open to innovation. For various reasons, in Latin America, the relationships between the elements of the 'Triple Helix' are, in the authors' words, 'not well articulated'. For instance, universities seem to be associated with a tradition of 'social unrest' and protest mobilization in the Latin American context.[107] As a consequence, the countries underwent 'many decades of structural and bitter confrontations structured a milieu where mistrust is present, (…) making difficult to achieve a general climate of common purpose between universities, firms and government.'[108]

3.1. Uruguay

As reported by Aboal et al, when Uruguay started reforming its innovation policies in 2005[109], the multiple agencies administering various aspects of innovation policy were brought together and the National Research and Innovation Agency (ANII) was established to coordinate most innovation initiatives conducted by the government. Nevertheless, many of Uruguay's

[105] Arocena, Sutz, 2000a, p. 8
[106] Arocena, Sutz, 2000a, p. 11
[107] Arocena, Sutz, 2000a, p. 12
[108] Arocena, Sutz, 2000a, p. 12
[109] Aboal et al, p. 5

innovation policies are said to need better evaluation[110]. The National Innovation Agency is supervised by the Ministry of Education and Culture and various other departments form part of the Ministerial Committee for Innovation (GMI), including the Ministries of Economy and Finance, Industry, Energy and Mining, Agriculture, Public Health, and the Planning and Budget Office. The ANII creates policy instruments in cooperation with the National Council of Innovation, Science, and Technology (CONICYT), which serves to express the interests of various public and private institutions related to innovation, science and technology. It consists of representatives from the executive branch, the business sector and the academia, workers and education administrators[111]. As Aboal et al note, the Ministry of Labour and Social Security is absent from both the Committee for Innovation and CONICYT. According to the authors, its absence from these bodies might be one of the reasons for the 'the lack of coordination between innovation and employment policies in Uruguay'[112]. The issues around the role of labour policy as one of the principal impediments of innovation in the country will be taken on later.

However, innovation policy of the country does not seem to have been encouraged or influenced by the country's membership in Mercosur. A telling indicator of Mercosur's lack of preoccupation with innovation and development is the lack of any mention of this regional body in most of the documents discussing the innovation activities in Uruguay. Although Rodrigo Arocena published a study entitled *'La Temática De La Innovación Mirada Desde Un Pequeño País Del Mercosur'* in 1998, he did not make a direct connection between the country's membership in the regional body and its innovation efforts, apart from the generic declaration that Uruguay's entry into the Common Market created 'many great expectations'

[110] Aboal et al, p. 13
[111] Aboal et al, p. 8
[112] Aboal et al, p. 7

both inside and outside of the region.[113] Furthermore, he asserts that at the time of his writing, many developmental agreements made within Mercosur remained predominantly formal rather than practical[114]. Although there have appeared attempts at 're-launching' Mercosur in recent decades[115], Arocena's words remain relevant until present time.

3.2 Slovakia

Since its accession into the European Union, many of Slovakia's policy strategies were influenced by its membership in the regional body. Slovakia has been making use of the various funding sources provided by the European Union, even though it is one of the least efficient recipients in terms of the absorption of the funds. According to the KPMG report on EU funds in Central and Eastern Europe for the 2007-2013 period, Slovakia had been granted 11.65 billion EUR from the various funds (which amounts to 16.2% of the country's GDP[116]), of which it had contracted 11.39 billion (98%) for its 11 operational programmes. However, only 6.12 billion have actually been paid, resulting in the payment ratio of only 53% (only Bulgaria and Romania had lower levels of absorption efficiency).[117] Further analysis of the country's implementation of EU funds notes that Slovakia had to overcome various initial obstacles in the process, since the first years were marked by low contraction rates, withdrawals and delays. Among the successes that were mentioned the reduction of the impact of the economic crisis, alleged slowing down of the growth of unemployment and modernization of infrastructure in education, social services, culture and civil projects in towns and municipalities.[118] Major weaknesses are identified as the unpredictable 'political cycle' which often leads to changes in documents and processes already in progress[119]. For the period of 2014 to 2020, funding

[113] Arocena, p. 15
[114] Arocena, p. 24
[115] see Doctor
[116] KPMG, p. 10
[117] KPMG, p. 49
[118] KMPG, p. 49
[119] KMPG, p. 50

priorities have been articulated as 'innovation and science, infrastructure (transport and ICT), human resources, education and environmental protection'[120]. This list reflects the renewed interest of the Slovak government in the promotion of innovation activities, as well as the determination to make better use of the resources offered by EU funding.

3.3. Analysis of the Results of the World Economic Forum's *Global Competitiveness Report*

The distorted nature of comparisons which make Uruguay seem to perform better and Slovakia worse than they actually do is well illustrated in the *Global Competitiveness Report 2014-2015* by the World Economic Forum. This report provides various indicators of economic competitiveness, based on economic performance data aggregated from a variety of sources, as well as the Executive Opinion Survey conducted and evaluated by the Forum itself. In the section of the country-specific profiles, the graph illustrating the GDP development of the countries locates Uruguay in the Latin American region, where Uruguay is an above-average performer[121], whereas Slovakia is compared to the category of 'advanced economies', in which its performance is notably below-average. (see Figures 1 and 2 on page 11)[122] In reality, these countries are only five places apart in the overall competitiveness ranking.

The basic development indicators seem to show that Slovakia is a far better performer of the two in all aspects. It is even categorized as a 'Category 3', or 'innovation-driven economy', along with the most developed countries, whereas Uruguay's is still characterized as 'Category 2-3', that is, an economy transitioning from the efficiency-driven to the innovation-driven stage of development. However, a closer look at the breakdown of the components uncovers intriguing differences in various categories. In spite of its lower overall score, in a number of aspects, Uruguay performs significantly better than Slovakia. Each country seems to exhibit

[120] KPMG, p. 51
[121] World Economic Forum, p. 380
[122] World Economic Forum, p. 336

specific strengths and weaknesses which might be overlooked if only the overall ranking is taken into account.

Table 2. Global Competitiveness Index Components[123]

	Slovakia		**Uruguay**	
	Ranking out of 144	Score out of 7	Ranking out of 144	Score out of 7
GCI 2014–2015	75	4.1	80	4.0
GCI 2011–2012 (out of 142)	69	4.2	63	4.3
Basic requirements (21.0%)	**70**	**4.6**	**47**	**4.9**
Institutions	110	3.3	31	4.7
Infrastructure	64	4.2	54	4.5
Macroeconomic environment	45	5.2	84	4.5
Health and primary education	84	5.5	58	5.9
Efficiency enhancers (50.0%)	**51**	**4.3**	**72**	**4.0**
Higher education and training	56	4.6	49	4.7
Labour market efficiency	97	3.9	134	3.4
Financial market development	39	45	87	3.8
Technological readiness	52	4.4	46	4.5
Innovation and sophistication factors (29.0%)	**73**	**3.6**	**85**	**3.5**
Business sophistication	65	4.0	85	3.8
Innovation	82	3.2	78	3.2

In spite of the differences between the rankings of the competitiveness index components, the lists of the top five most problematic issues for doing business in the two countries feature various common elements, such as government bureaucracy, tax rates and restrictive labour regulations. The key differences lie in the inclusion of corruption and tax regulations in the

[123] World Economic Forum's Executive Opinion Survey

Slovak list and the issues such as education of the workforce and supply of infrastructure in Uruguay.

Table 3. Most Problematic Factors for Doing Business (World Economic Forum)

rank	**Slovakia**	**Uruguay**
1	Inefficient government bureaucracy 17.0	Restrictive labour regulations 22.8
2	Corruption 16.1	Inefficient government bureaucracy 16.4
3	Restrictive labour regulations 14.5	Tax rates 11.8
4	Tax rates 10.3	Inadequately educated workforce 11.1
5	Tax regulations 10.1	Inadequate supply of infrastructure 10.7

With regards to innovation indicators, again, considerable similarity in the rankings of Slovakia and Uruguay can be perceived. Interestingly, with regards to innovation capacity, Slovakia's position is much closer to Uruguay than to its culturally and geographically closest neighbours. The two countries seem to exhibit slightly below average innovation performance. On the other hand, the Czech Republic achieves a significantly better result (28), whereas Hungary is placed much closer to the bottom of the list (127).

Table 4. Innovation Indicators (World Economic Forum)

	Slovakia		**Uruguay**	
	rank	value (1-7)	rank	value (1-7)
Innovation Capacity (mean=3.9)	89	3.5	87	3.5
Quality of Research Institutions (mean=3.8)	65	3.9	74	3.7
Company Spending on R&D (mean=3.3)	78	3.1	81	3.0
University-Industry Collaboration in R&D (mean=3.7)	84	3.4	70	3.6
Availability of Scientists and Engineers (mean=4.0)	76	4.0	111	3.4
Patent Applications (value = number per million inhabitants)	38	*9.2*	54	*2.4*

It can be concluded that there are numerous similarities between the performance of Slovakia and Uruguay with regards to their innovation activities. In addition, the two countries share a number of problematic issues which prevent their business environments, and consequently also their innovation performance, from improving. Therefore, the comparison of their innovation policies can be meaningful. A more detailed analysis of the specific indicators is presented in the sections below, in the context of a broader description of the various aspects of innovation policies.

Chapter 4. Education Policy

Education policy is a significant constitutive area of innovation policy, since it contributes to the creation and development of human capital, which can also be described, in the words of an OECD report, as 'embodied knowledge'.[124] Many aspects of human capital development are located in the realm of government policy, including the provision of education from primary to tertiary levels, as well as vocational training and labour market policies. The OECD report also asserts that investments made in education and training of the workforce are exceptionally effective because they yield increasing instead of decreasing returns, unlike other types of investment.[125] For these reasons, investments in education, along with investments in research and development, should be on top of the priority lists of countries seeking to foster innovation-based growth. However, this is not always the case, since for various reasons, catching-up countries fail to give importance to providing quality education to their citizens.

Both Slovakia and Uruguay seem to have experienced relative successes but also increasing difficulties in the area of education policy. Despite their comparatively broad coverage and widespread basic literacy, the two countries score comparatively poorly (below OECD average) in the globally recognized Programme for International Student Assessment (PISA), although Slovakia fares slightly better than Uruguay. In addition, the scores of both countries have been deteriorating from their past achievements[126]. Both countries struggle to improve the quality of educational content while at the same time facing stagnating or even decreasing levels of public spending on education. For instance, Slovakia's expenditure of 4.4% of GDP

[124] OECD, 1996, p. 8
[125] OECD, 1996, p. 11
[126] OECD: Programme for International Student Assessment (2014) PISA 2012 Results in Focus [Online Accessed 10/5/2015] http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf, p. 5

is among the lowest in OECD, well below the international organization's average of 6.1%[127]. Uruguay similarly spends 4.5% of its GDP on education[128], which constitutes an increase from past decades but falls short of the government's ambition of 6%.[129]

In both countries, education is considered a public good and is compulsory and free up to the University level. However, the quality of their educational institutions remains problematic and appears to be one of the most salient policy failures of recent governments.[130] However, for various reasons, far-reaching reforms of the sector have been prevented in the two countries. In Uruguay, the strength of the teachers' unions and their ties to the ruling party seem to have blocked any attempts at reform.[131] In Slovakia, on the other hand, one of the main issues is poor quality of teachers. Their salaries are among the lowest in the OECD and do not even reach the national average wage. According to the OECD's *Education at a Glance* report, 'even an upper secondary teacher at the end of his or her career in the Slovak Republic earns less than half of the average starting salary of a primary teacher in OECD countries' and even within the country itself 'the ratio of public teachers' salaries relative to earnings for tertiary-educated workers aged 25-64 is the lowest among OECD countries with available data.'[132] Moreover,

[127] Organisation for Economic Co-operation and Development: Education at a Glance (2014a) Country Notes – Slovak Republic. [Online. Accessed 10/5/2015] http://www.oecd.org/edu/Slovak%20Republic-EAG2014-Country-Note.pdf, p. 2

[128] Knoema Word Data Atlas (2014) 'Uruguay Expenditures on Education - Public spending on education (% of GDP)' http://knoema.com/atlas/Uruguay/topics/Education/Expenditures-on-Education/Public-spending-on-education-percent-of-GDP [Online. Accessed 13/4/2015]

[129] E. Gonzalez (2015) 'Uruguay Update: President Vázquez's Agenda after Mujica' Americas Society/Council of the Americas. [Online. Accessed 13/4/2015] http://www.as-coa.org/articles/uruguay-update-president-v%C3%A1zquezs-agenda-after-mujica

[130] Haberkorn, L. (2014) 'José Mujica's International Popularity Not Reflected Within Uruguay'. Huffington Post [Online. Accessed 13/4/2015] http://www.huffingtonpost.com/2014/03/19/mujica-popularity-uruguay_n_4994564.html

[131] Fairbanks, E. (2015) 'Jose Mujica Was Every Liberal's Dream President. He Was Too Good to Be True.' The New Republic [Online. Accessed 13/4/2015] http://www.newrepublic.com/article/120912/uruguays-jose-mujica-was-liberals-dream-too-good-be-true

[132] OECD, 2014a, p. 1

the minimum teachers' salary is below 60% of the country's per capita GDP.[133] For these reasons, teaching is far from the preferred profession for Slovakia's most talented graduates.

Policy responses to the unflattering levels of educational quality have been different. Uruguay has responded with an increased education spending and an ambitious information technology distribution program, the so-called *Plan CEIBAL*. In Slovakia, although a substantial amount of EU funding was allocated to the Operational Programme Education, PISA results keep deteriorating, as illustrated in Table 5.

Table 5. PISA scores 2012 for selected countries

	Mathematics				**Reading**		**Science**	
	Mean score in PISA 2012	***Share of low achievers in mathematics (Below Level 2)***	***Share of top performers in mathematics (Level 5 or 6)***	***Annualised change in score points***	***Mean score in PISA 2012***	***Annualised change in score points***	***Mean score in PISA 2012***	***Annualised change in score points***
Shanghai-China (top performer)	613	3.8	55.4	4.2	570	4.6	580	1.8
OECD average	*494*	*23.0*	*12.6*	*-0.3*	*496*	*0.3*	*501*	*0.5*
Slovak Republic	**482**	**27.5**	**11.0**	**-1.4**	**463**	**-0.1**	**471**	**-2.7**
Uruguay	**409**	**55.8**	**1.4**	**-1.4**	**411**	**-1.8**	**416**	**-2.1**

4.1 Structural Funds in Slovakia: Operational Programme Education

In Slovakia, a targeted operational programme for using European Union's Structural Funds for the improvement of the quality of education was put in place in 2007-2013. The financial allocation for this project was 'a total of 600,000,000 euros (…) for the Goal Convergence and 17,801,578 euros for the Goal Regional Competitiveness and Employment.'[134] The so-called OP Education was meant to improve education in the country, with explicit reference to

[133] European Comission (2014) 'Teachers' and School Heads' Salaries and Allowances - Europe 2013-14' [Online. Accessed 10/5/2015] http://eacea.ec.europa.eu/EDUCATION/EURYDICE/documents/facts_and_figures/salaries.pdf, p. 9.
[134] Official website of The Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU (ASFEU) [Online. Accessed 10/5/2015] http://www.asfeu.sk/en/

knowledge society in the statement of its goal: 'provision of the long term competitiveness of the Slovak Republic by adjusting the education system to the needs of the knowledge society.'[135] The first item on the priority list was 'reform of the education and vocational training system'. However, an effective reform was never put in place. In addition to OP Education, a programme for research and development was drafted and an additional 883,000,000 euros were allocated for this programme's Goal Convergence, and 326,415,373 euros for the Goal Regional Competitiveness and Employment.[136]

However, Slovakia has one of the worst records of absorption of Structural Funds of all Eastern European countries that entered the Union at the time of the 'Eastern enlargement': Slovakia, with 45% difference between the contracting and payment ratios found itself at the bottom of the list for the 2007-2013 period, only ahead of Romania (57%) and Bulgaria (58%). In contrast, the most efficient country with regards to EU fund absorption is Estonia, with only 19% difference between contracting and payment.[137] Furthermore, the spending of the EU funds has been criticised for its lack of transparency and conduciveness to corruption. The funds of OP Education have allegedly been used to pay for the services of international consultancy firms, which have been labelled as an 'overpriced substitution' of the functions of the state.[138] For instance, consultancy firms were hired to assess the outcomes of Ministry's implemented policies - activity which should arguably be carried out by the Ministry itself. This example supports the conclusion that the availability of EU funds for the improvements of education is often ineffective due to underlying structural problems in Slovakia.

[135] ASFEU
[136] ASFEU
[137] KPMG, p. 14
[138] Dubeci, M. (2015) 'Dobrá Rada nad Zlato?' Denník N, [Online. Accessed 4/6/2015] https://dennikn.sk/blog/dobra-rada-nad-zlato-cast-i/?ref=box

4.2 Education in Mercosur

The influence that Mercosur has on the education policies of its members is qualitatively very different from that of the EU. Instead of transfer of cohesion funds, greater cultural homogeneity and proximity allows for more cooperation and interchange among the countries. With regards to linguistic considerations, both Spanish and Portuguese have been recognized as the official languages of Mercosur, and all countries agreed to make an effort to teach both languages in their schools in order to further reinforce mutual understanding.[139] Moreover, as Mukhametdinov observes, lack of cultural and linguistic barriers in Mercosur resulted in facilitated

> administration of joint educational and artistic programmes, scientific and research cooperation, the maintenance of archive, library and mass media networks and interpenetration of products of cultural industries (radio, television, music, books, press, cinema and video).[140]

For obvious reasons of much greater diversity, there are no similar policies conducive to linguistic integration implemented in the EU. Quite the contrary, although more than twenty languages are recognized as official languages of the Union, for practical reasons, English and French are dominant in the European institutions.

However, the social realities of Mercosur might also pose a danger to improving the educational standards in Uruguay. The current struggles can be seen as issues of Human Opportunity and improving social equality, yet this is an issue where Mercosur's ability and performance seem to be most deficient.[141] Quite the contrary, its neoliberal character could, as has been argued, reinforce inequalities in the member states. Education in particular is a sector in which Mercosur countries seem to be lagging behind, in terms of quality and public spending

[139] Mukhametdinov, p. 220
[140] Mukhametdinov, p. 220
[141] Mecham, p. 379

levels, even when compared to developing countries in East Asia.[142] These insufficiencies in education are then translated into low skill levels in the population and, as a result, high levels of unemployment and stalled economic and social development. Mecham concludes that 'the existence of Mercosur appears to have made little or no contribution to redressing the social deficit.'[143]

Education is a notoriously problematic topic in both Uruguay and Slovakia. This perception is reflected in the low ranking in the quality of education indicator. However, both countries achieve rather positive results with regards to internet connectivity in schools. In the case of Uruguay, its position in the top 20 can undoubtedly be ascribed to the *Plan CEIBAL*, implemented by president Vázquez in 2009.

Table 6. Higher Education and Training Indicators (World Economic Forum)

	Slovakia		**Uruguay**	
	rank	value	rank	value
Secondary education enrolment rate	58	93.9	69	90.3
Tertiary education enrolment rate	51	55.1	33	63.2
Quality of education system (mean[144] = 3.7)	125	2.8	117	2.9
Quality of maths and science education (mean=4.0)	75	4.0	122	2.9
Internet access in schools (mean=4.3)	31	5.5	17	6.0
Employee training in companies (mean=4.0)	90	3.8	80	3.9

[142] Mecham ,p. 380
[143] Mecham, p. 380
[144] mean of all 144 countries included in the survey

4.3 Higher Education

If basic education seems to be working relatively well, with both countries enjoying broad coverage of primary education and high levels of basic literacy, even though issues of quality remain present, the situation at the universities in the two countries is significantly worse. With regards to the countries' performance in international rankings of higher education, both seem to fare poorly. For instance, in the global *Quacquarelli Symonds (QS) ranking*, the largest and most important university in Uruguay (receiving 80% of tertiary enrolment in the country[145]), *Universidad de la República*, ends up at the bottom of the list with a rank of 701+ out of 800. In the QS ranking of the Latin American region, it occupies 54th place out of 300[146]. Slovak universities, on the other hand, are altogether absent from the rankings due to their poor quality and reputation, unlike the universities of its Central and Eastern European neighbours.

With regards to the interconnections of universities and industries, Arocena and Sutz have observed a problematic paradox of Latin American academics in their search for funding:

> Faculty must perform applied research for industry, (…) but their academic promotion will depend almost entirely on the number of published papers in main stream journals. (…) These journals are not particularly interested in the kind of problems that are of practical importance in the region, and so the evaluation system rewards the setting of research agendas moulded in the "North" matrix and punishes own defined research agendas.[147]

This paradox illustrates the tension between the attempted region- or country-specific specialization of research on the one hand, and continued efforts to live up to the standards of the developed countries ('the North') on the other. This makes the communication between universities and businesses, and any potential goals of their innovative collaboration, even more difficult to achieve.

[145] Arocena, Sutz, 2011, p. 86
[146] Quacquarelli Symonds University Ranking (2014) Universidad de la Republica [Online. Accessed 10/5/2015] http://www.topuniversities.com/universities/universidad-de-la-rep%C3%BAblica-udelar/undergrad
[147] Arocena, Sutz, 2000a, p. 13

Slovakia seems much better positioned for improving its university research efforts, thanks to the efforts of the European Commission to create an EU-wide *European Research Area*. However, researchers at higher education institutions still seem to be 'relatively secluded' from their European peers[148]. Lack of competitiveness, low levels of mobility and international cooperation have partly been attributed to a language barrier which stems from the academics' insufficient knowledge of English, which is believed to be the *lingua franca* of international research.[149]

In summary, the elusive solution to the gap in 'learning economies' between the developed and 'catching-up' countries could lie in the successful emergence of the 'developmental university.' This type of university would be 'characterized, in a neo-Humboldtian perspective, by the joint practice of three missions: teaching, research and cooperation for development with other institutions and collective actors.'[150] However, precisely these links for cooperation seem to be lacking between the actors in Slovakia and Uruguay. So far, neither the European Union nor Mercosur have helped the countries to overcome this obstacle.

[148] Jensen, H.T. , Kralj, A., McQuillan, D., Reichert, S. (2008) 'The Slovak Higher Education System And Its Research Capacity Eua Sectoral Report', European University Association (EUA) Institutional Evaluation Programme [Online. Accessed 10/5/2015] www.eua.be/fileadmin/.../Slovakia_SectorEvaluationReport_080208.pdf, p. 69
[149] Jensen et al, p. 69
[150] Arocena, Sutz, 2011, p. 93

Chapter 5. Research & Development, Science and Technology Policy

In its narrowest interpretation, innovation can be seen as a result of processes of research and development and the consecutive implementation of the findings in the creation and distribution of novel technologies which lead to increases in productivity. Although Slovakia and Uruguay seem to recognize the importance of revitalizing their R&D and science and technology sectors, they do not seem to have found the optimal strategies of doing so. As small countries, their most obvious method of acquiring new technologies appears to be the effort to attract foreign companies which would transfer their technologically sophisticated equipment and know-how to the locals. However, opening to transnational companies might not always bring the desired developmental outcomes. In Latin America in general, a paradox has been described by Arocena and Sutz following the region's trade liberalization and opening to new technologies: even though 'an explosion of possibilities for technological innovation stem from new technologies, the initiatives for innovation seem to be driven out from Latin America to be more concentrated than ever in the "North".'[151] Consequently, these processes only reinforced the region's location at the global periphery, instead of the desired effect of its integration into the global economy. The creation of Mercosur is Latin America's most significant example of such kind of neoliberal opening. On the other hand, data on the effects of FDI indicate that both Slovakia and Uruguay indeed do draw comparative advantage from foreign direct investment and technology transfers that accompany it (see Table 7). These indicators support the fact that both of them seem to depend on foreign capital in a significant portion of their innovation activity.

[151] Arocena, Sutz, 2011, p. 17

Table 7. Technological Readiness Indicators (World Economic Forum)

	Slovakia		**Uruguay**	
	rank	value (1-7)	rank	value (1-7)
Availability of Latest Technologies (mean=4.8)	50	5.2	83	4.6
Firm-level Technology Absorption (mean=4.7)	57	4.8	93	4.3
FDI and Technology Transfer (mean=4.5)	**18**	5.1	**20**	5.1

With regards to government spending on research and development, Slovakia (0.82% of GDP) seems to be performing much better then Uruguay (0.43%), since its budget allocates almost double the amount of funds. However, to put the comparison into wider perspective, the OECD average on R&D spending in 2010 was a much more generous 2.25% of GDP.[152] As reported by the European Commission, Slovakia has one of the lowest levels of R&D intensity, measured as R&D spending as percentage of GDP, among all OECD countries. Of all OECD countries, only Romania and Cyprus had a lower R&D intensity than Slovakia in 2006 (0.46% of GDP), while the EU-27 average was 1.84%.[153] Moreover, even the *growth* in the intensity of expenditure between 2000 and 2006 is one of the lowest (3.4%) as compared to the EU-27 (14.8%) and the best performer Estonia (211%)[154]. Furthermore, Slovakia has one of the lowest shares of knowledge-intensive services workers (25.1%) and highest proportion of workers employed in manufacturing. This phenomenon is explained by the presence of foreign companies which locate their manufacturing but not research-intensive activities in

[152] Organisation For Economic Co-Operation And Development (2011) OECD Factbook 2011-2012: Economic, Environmental and Social Statistics, 'Gross Domestic Expenditure on R&D, as a percentage of GDP' [Online. Accessed 10/5/2015] http://www.oecd-ilibrary.org/sites/factbook-2011-en/08/01/01/08-01-01-g1.html?itemId=/content/chapter/factbook-2011-68-en&_csp_=6c14ec2a6dca6a6096ea9a9972d83d5a
[153] European Commission, 2008, p. 22
[154] European Commission, 2008, p. 9

Slovakia.[155] As far as R&D efforts of foreign firms is concerned, Slovakia has the second lowest share (below 25%) of foreign companies' affiliates' contribution to R&D by business enterprise[156]. Nevertheless, it is also apparent that EU countries provide a large share (77%) of the inward R&D investment in manufacturing for Slovakia, while the remaining 23% is provided by the U.S[157]. These data indicate that although Slovakia draws a considerable support for its R&D from the EU, its efforts do not reach their full potential – as demonstrated by the performance of similar small Eastern European countries.

Table 8. World Bank Data Science and Technology Indicators[158]

	Slovakia	**Uruguay**
R&D Spending, % of GDP, 2005-2012	**0.82**	**0.43**
Full-time researchers per million inhabitants, 2005-2012	2,804	538
Scientific and technical journal articles 2011	1,099	290
Patent applications filed, 2013: residents	184	22
Patent applications filed, 2013: non-residents	26	678

It has been emphasized that Structural Funds indeed enable a substantial part of scientific research in Slovakia.[159] In recent efforts to revert brain drain and emigration of scientific experts, the Slovak government offers grants of up to 50 thousand euro to returning scientists.[160] However, it has been claimed that while recent graduates from foreign universities might be persuaded by the offer, experienced practitioners are unlikely to return. The responses

[155] European Commission, 2008, p. 82
[156] European Commission, 2008, p. 86
[157] European Commission, 2008, p. 88
[158] The World Bank (2014) 'World Development Indicators: Science and Technology' World Bank Data [Online. Accessed 20/5/2015] http://wdi.worldbank.org/table/5.13
[159] Matkovska, Z. (2015) 'Vedec roka Gömöry: Dobré bude, keď sa mladí začnú na Slovensko vracať', SME online [Online. Accessed 20/5/2015] http://tech.sme.sk/c/7800210/vedec-roka-gomory-dobre-bude-ked-sa-mladi-zacnu-na-slovensko-vracat.html
[160] Mikusovic, D. (2015) 'Štát volá domov expertov z cudziny, ponúkne im aj 50-tisíc eur' Dennik N online [Online. Accessed 20/5/2015] https://dennikn.sk/122184/stat-vola-domov-expertov-z-cudziny-ponukne-im-aj-50-tisic-eur/

of Slovak scientists based abroad emphasized that one-off grants are less attractive to scientific professionals than continuous access to funding for their research. Slovak government is unable to guarantee financing of research to an extent comparable to that provided by research institutions abroad, for instance in the United States.

In summary, in spite of the various innovation-focused initiatives which emerged from the policymakers in the two countries in the last decade (2005-2015), the still insufficient spending limits the real possibilities of creating true centres of excellence for researchers and innovators in their territories. Moreover, despite the improvements in spending levels, countries with historically low innovation face the drawbacks of structural problems such as 'weak innovation behaviour' and 'weak knowledge demand'[161]. In addition, although Arocena and Sutz admit efforts on the side of Uruguay's most prominent university, Universidad de la República, to correct its historically problematic relationships with government and industry, the above mentioned lack of businesses' demand for university knowledge still remains an unresolved issue. As the authors conclude, 'weak market demand for endogenously generated knowledge is a structural feature of underdevelopment', which can only be overcome by implementing targeted long-term policies.[162] It can be concluded that opportunities for funding from initiatives like the *European Research Area* do not automatically translate into improvements in the areas of science and technology. If there is a prevalence of factors which discourage the development of R&D, such as low government spending, foreign firms' focus on manufacturing, lack of qualified researchers and research facilities, in addition to the small size of the country and small knowledge demand, improvements seem difficult to achieve.

[161] Arocena, Sutz, 2011, p. 84
[162] Arocena, Sutz, 2011, p. 88

Chapter 6. Supporting Elements of Innovation Policy

6.1. Labour Market and Legislation

The re-orientation of labour towards innovation is a crucial requirement for the re-orientation of the country's economy as a whole. Especially in Uruguay, rigidities in labour legislation seem to be one of the main detrimental factors impeding the advancement of innovation. According to the conclusions of an Inter-American Development Bank document published by Aboal et al, which studied the relationship between innovation and employment, 'strict definition and enforcement of occupational categories affect the dynamics of the innovation processes of firms'[163]. Systemic rigidities in labour legislation create inefficient structures of interaction between employers and employees and present obstacles to labour mobility, which has been shown to be a major driver of innovation.[164] Another problematic aspect associated with labour law which is criticized by Aboal et al is the excessive influence of firms and unions. Finally, there is a demonstrable lack of 'coordination between innovation, employment, and training policies in Uruguay'.[165] The authors proceed to explain that the contents of the government's innovation policy do not match the needs of the innovator firms. Although a number of training and innovation-fostering schemes has been put in place, innovation-related employment creation in Uruguay remains low.[166] With regards to the *effects* of innovation on employment, it has been concluded that when innovation occurs, demand for skilled labour force rises, although low skill employment might be reduced.[167]

The problematic of the labour market efficiency is visible in the countries' below-average rankings in the section of labour market indicators of the World Economic Forum's executive

[163] Aboal et al, p. 66
[164] Aboal et al. p. 67
[165] Aboal et al, p. 66
[166] Aboal et al, p. 13
[167] Aboal et al, p. 66

survey. Both Slovakia and Uruguay rank low in the overall indicators, especially in the categories of talent retention and attraction. Moreover, the respondents from both countries assert that taxation significantly reduces their incentives to work. Finally, Uruguay ended up at the very bottom of the ranking with regards to workers' beliefs that their pay reflects their productivity. All these factors negatively influence the propensity to innovate, since human capital is one of the key assets necessary for a functioning innovation system.

In addition, with regards to the interconnections between employment and innovation, Arocena and Sutz point to 'worrisome' trends in Uruguay, where the vast majority of firms (both innovative and non-innovative) do not employ any scientific or technological professional[168]. Therefore, the authors conclude that since there is not high demand for these workers. As a consequence, mismatch can arise between the workers' capacities and the opportunities presented to them and lead to brain drain, as it is the case in Uruguay and Slovakia. As can be seen in Table 7 below, the capacity to attract and retain talent is low in both countries.

Table 9. Labour Market Efficiency Indicators (World Economic Forum)

	Slovakia		**Uruguay**	
	rank	value (1-7)	rank	value (1-7)
Pay related to productivity (mean= 3.9)	32	4.4	144	2.3
Effect of taxation on incentives to work (mean= 3.7)	119	2.9	120	2.9
Capacity to retain talent (mean=3.5)	130	2.4	83	3.3
Capacity to attract talent (mean= 3.5)	117	2.6	106	2.7

In conclusion, labour market policies show multiple deficits in both Slovakia and Uruguay. These deficiencies can be worsened by the countries' membership in regional bodies aspiring

[168] Arocena, Sutz, 2000a, p. 82

to common markets, since free movement of labour facilitates the exodus of qualified workers into countries with better opportunities in terms of employment and salaries. As has been demonstrated in the previous chapter, although researcher mobility is desired for the countries' R&D, there is little incentive for foreign-based scientific professionals to return to their home countries.

6.2. Institutions and Market Conditions

In addition to specific policies, general conditions for conducting innovative activities need to be considered, evaluated and potentially improved in catching-up countries. Among such conditions are the quality of institutions and market conditions, as well as the Ease of Doing Business indicators, since a significant portion of economic activity is carried out by small and medium size enterprises, and these are one of the targets of policies for 'unleashing innovation'.[169] The breakdown of the indicators shows more variety in the performance of the two countries. Interestingly, Slovakia scores much worse than Uruguay in virtually all institution-related indicators.

Table 10. Institutions Indicators (World Economic Forum)

	Slovakia		**Uruguay**	
	rank	value	rank	value
Protection of property rights (mean=4.2)	89	3.8	40	4.9
Protection of intellectual property (mean=3.8)	61	3.8	44	4.1
Burden of complying with government regulations (1=extremely burdensome, mean=3.4)	137	2.4	84	3.4

[169] Mytelka, p. 3, OECD 2010, p. 3

With regards to the goods market indicators, a stark contrast between the two countries can be observed. Slovakia has a far lower trade tariff rate, thanks to its membership in the EU, but it fares much worse than Uruguay in the other two indicators, since these are related to administrative and regulatory issues, which Slovakia fails to manage successfully. Uruguay seems to offer a much more business-friendly environment and its regulations are much easier to overcome.

Table 11. Goods Market Efficiency Indicators (World Economic Forum)

	Slovakia		**Uruguay**	
	rank	value	rank	value
Days required to start a business	87	18.5	31	6.5
Average trade tariff rate	5	0.8	90	7.9
Business impact of regulation on FDI (7=encourage, mean=4.3)	64	4.5	21	5.2

In conclusion, the various policies identified as parts of innovation systems are interdependent and mutually reinforcing. Although the crucial building blocks of innovation are education and R&D, science and technology policies, the supporting elements such as policies regulating the labour and goods markets and the overall institutional and business environments of the countries influence not only the national innovation systems of the countries themselves, but also determine whether the impact of regional integration will be beneficial or detrimental to the countries' development.

Slovakia and Uruguay have different strengths and weaknesses in the elements supporting their innovation systems. Slovakia's advantages seem to stem from its membership in the EU, but they are offset by the country's institutional inefficiencies. Uruguay, on the other hand, benefits from the domestically implemented reforms, and its membership in Mercosur does not seem to be playing a significant role in its success.

Conclusions: 'Lessons learned' and the Limits of Policy Imitation

One of the aims of this thesis, focused on comparing two small, relatively high-income countries and their innovation policies, was to present an argument against excessive reliance on intra-regional comparisons, since these might turn out to be deceptive in the global perspective. The approach of selecting two similar countries from different regions has revealed intriguing findings which would have gone unnoticed under strict adherence to studying these countries solely in the context of their respective regions. Slovakia and Uruguay share similar developmental conditions, but are embedded in very different regional contexts.

Firstly, the developmental approaches of the regional bodies to which Uruguay and Slovakia belong are radically different. Their institutional arrangement and the power balance within them significantly influence their attitudes towards providing developmental aid. As opposed to the ideological underpinning of the European Union, the founding rationale of Mercosur does not warrant a cohesion policy which would support redistribution and assistance to its disadvantaged members. It is therefore not realistic to expect similar levels of cooperation towards the improvement of policy options in both communities. Mercosur, due to its intergovernmental character and the resulting absence of supranational institutions, which prevents the emergence of a consensus of Community-wide developmental strategies, lacks the motivation to assist its smaller members such as Uruguay in their economic advancement. Doctor has described the situation as 'narrow and rather ungenerous terms of engagement on the part of its members'.[170] On the other hand, the willingness of the regional body such as the European Union to support the development of its less advanced members does not in itself guarantee that the country-level barriers to fostering innovation will be overcome.

[170] Doctor, p. 537

Regarding the initial question of the influence of regionalism on developmental policy options, in theory, both Slovakia and Uruguay should enjoy the potential for integration into region-wide innovation networks, and both seem to have benefited from the inflow of foreign investment which potentially facilitates knowledge spill-overs. Slovakia's main advantage is its geographical proximity to the more advanced countries in the European Union, whereas Uruguay benefits from lack of language and cultural barriers with its larger neighbours.

In reality, while Slovakia does have its options widened by its membership in the EU, Uruguay does not seem to be drawing many innovation-related benefits from Mercosur. Slovakia seems to enjoy multiple development opportunities thanks to EU-wide innovation policy initiatives and funding, although it does not seem to be fully capable of taking stock of them. Similar levels of development in the area of innovation are present in the two countries due to the fact that although Slovakia receives more opportunities, underlying structural problems prevent it from exploiting the available policy options. Administrative difficulties limit the absorption rates of the EU funds and poor institutional environment poses obstacles to innovative activities.

It could be concluded that the European Union, thanks to its supranational character, in which institutions representing the Community counterbalance the interests of the national government representatives of the member states, offers more developmental policy options to its less developed members. In contrast, Mercosur is ever more often viewed as a mere outdated neoliberal project, highlighted for its developmental failures and functional inefficiencies. One of the reasons of Mercosur's shortcomings in the area of growth has been identified as the lack of functional institutions, since 'institutions are important in helping to stimulate growth, making it sustainable and more equitably distributed.'[171] Thus, it remains an unresolved

[171] Mecham, p. 381

obstacle to development that even though Mercosur formally subscribes to similar goals as the EU, it refuses to implement similar tools to achieving them.

On the other hand, there are arguments against Mercosur becoming more like the EU. Various aspects of Mercosur's functioning, including many of its founding principles, have in fact been modelled after the European Union. However, the 'lessons learned' from this practice seem to discourage rather than recommend further imitation. The Secretariat of Mercosur itself has publicly admitted that 'In mid-2004, half of the Mercosur legislation in the domain of the common market was not internalized and implemented, because it was difficult to adapt it to Mercosur'.[172] Therefore, what prevents Mercosur from being more like the EU in its supranational initiatives is not (only) lack of political will, but also overwhelming structural factors. Moreover, the member countries of Mercosur have their own specific advantages, such as smaller number of participants and more cultural and linguistic similarity. These aspects facilitate international communication and might contribute to the exchange of ideas in their own ways. Although economic interactions among the Mercosur countries do not reach the intensity of those within the European Union, there are lower communication barriers which might offer opportunities in various policy areas, such as education, cultural production and service industries such as tourism.

However, beyond mere cultural integration, with regards to accessing developmental aid for fostering innovation, Uruguay has the misfortune of being the only small and relatively prosperous member of Mercosur, while Slovakia is one of many such countries in the European Union. Uruguay's comparatively high level of development in the Latin American region has become another 'curse' on top of the existing disadvantages of its small size and location in the 'buffer-zone' between two 'giants', Brazil and Argentina. Therefore, since Slovakia is

[172] Mukhametdinov, p. 226

perceived as a relative welfare laggard within the EU, it seemingly 'deserves' substantial amounts of aid in order to approach the levels of development found in Western Europe. On the other hand, when Uruguay is compared to similar countries in other regions, its economic and developmental achievements which make it a champion of Latin America seem to fade. In contrast to Slovakia, which is perceived as in need of assistance, Uruguay is seen as a success story and therefore does not appear to require aid from its neighbours and fellow Mercosur members.

However, alternative integrational options seem to be opening for Uruguay, as the landscape of Latin American regionalism is shifting. Projects such as the Pacific Alliance and UNASUR ('Unión de Naciones Suramericanas'[173]) emerge as ambitious alternatives with strengthened focus on *supranationalism* (creation of community-level political institutions, as opposed to Mercosur's strict *intergovernmentalism*) and development.[174] Nevertheless, even the new forms of regional integration still seem to emphasize issues delineated by the dependency theory rather than modernization and innovation. ALBA ('Alianza Bolivariana para los Pueblos de Nuestra América'[175]) and UNASUR explicitly aim to create regional bodies in which Latin American countries 'can deal with their own problems without the interference of the U.S. government'.[176] Thus, more importance is still given to independence than to development. The Pacific Alliance, created in 2011, is more economically-focused and aspires to the (improved) continuation of the neoliberal model.[177] The fact that Uruguay's leaders have

[173] Union of South American Nations
[174] N. Arenas-García (2012) '21st Century Regionalism in South America: UNASUR and the Search for Development Alternatives' eSharp, Issue 18: Challenges of Development [Online. Accessed 14/4/2015] http://www.gla.ac.uk/media/media_228378_en.pdf
[175] Bolivarian Alliance for the Peoples of Our America
[176] Mouline, S. (2015) 21st Century Regionalism: Where is Latin America Headed? Council on Hemispheric Affairs [Online. Accessed 20/5/2015] http://www.coha.org/21st-century-regionalism-where-is-latin-america-headed/ p. 3
[177] Mouline, p. 3

expressed strong interest in joining this organization[178] might indicate the diminishing importance of Mercosur, if not a tendency towards its eventual replacement.

In summary, this thesis has demonstrated that while Uruguay seems to lack the external support of Mercosur for its intensifying developmental and innovation activities, Slovakia suffers from internal problems which prevent it from enjoying the benefits of the much more generous and supportive European Union. The potential policy recommendations would involve institutional consolidation for Slovakia and its continued cooperation with the European Union, but a possible reconsideration of regionalist efforts for Uruguay, including membership in various regional bodies in order to increase the pressure on Mercosur to take into serious consideration the economic development of its smaller members. This conclusion is supported by the argument that only the synergy of the efforts of national governments to create functioning networks between states, industries and universities, and the efforts of regional bodies to harmonize the levels of development among their member states will lead to thriving innovation in small catching-up countries.

[178] MercoPress News Agency (2013) 'Uruguay Calls on Mercosur to Sign a Free Trade Agreement with the United States' [Online. Accessed 10/5/2015] http://en.mercopress.com/2013/08/19/uruguay-calls-on-mercosur-to-sign-a-free-trade-agreement-with-united-states

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