

Infrastructure Investment in the Western Balkans

Mario Holzner, Robert Stehrer and Hermine Vidovic



Infrastructure Investment in the Western Balkans

MARIO HOLZNER
ROBERT STEHRER
HERMINE VIDOVIC

Mario Holzner is Deputy Director at the Vienna Institute for International Economic Studies (wiiw). Robert Stehrer is Deputy Scientific Director at wiiw. Hermine Vidovic is wiiw Research Economist. The authors thank Fatos Hoxha, Werner Laventure and Galina Vasaros for providing statistical support.

This study was financed by the Austrian Federal Ministry of Science, Research and Economy on the occasion of the 'Western Balkans Summit Vienna 2015'.

Abstract

Although a certain amount of catching-up in the Western Balkans has been recorded in the construction of transport infrastructure in recent years, the railway density remains low and the motorway density is even lower. Also, the deficiency in energy infrastructure is substantial. The current initiative of the 'Core Network and Priority Projects' in the context of the 'Berlin Process' should secure growth and employment in the region over the short and medium term and contribute to a substantial improvement of competitiveness of the Western Balkans in the long term. It is shown in the analysis that a comprehensive transport infrastructure investment package of EUR 7.7 billion over a period of 15 years could lead to an additional growth spurt of up to one percentage point per annum for the six Western Balkan countries. Some 200,000 new jobs could be created in the region.

Keywords: infrastructure, public investment, economic development, simulation model, Berlin Process, Western Balkans

JEL classification: E27, H54, O18

CONTENTS

Introduction	1
The legacy of the past	1
Initiatives for reconstruction	3
Experience from previous projects	5
A current initiative: the Berlin Process	5
Infrastructure gaps	7
Overhauling the transport infrastructure	7
... but still low rail density and even lower motorway density	9
Backlog demand for energy	13
Gaps in vocational training	16
Research and training below expected levels	18
Economic effects of infrastructure investment	22
Only some priority infrastructure projects have matured	22
An investment package of 7.7 billion creates 1% growth	26
Employment effects of up to 200,000 people	31
Conclusions	33
References	35
Annex	36

TABLES AND FIGURES

Table 1 / 221 km mature new priority road building projects at around EUR 2.9 billion.....	23
Table 2 / 189 km mature new priority rail building projects at around EUR 1.1 billion.....	23
Table 3 / Only few mature priority road renovation projects of around EUR 25 million.....	25
Table 4 / Several mature priority rail renovation projects at around EUR 1.6 billion.....	25
Table 5 / Few mature 400 kV priority power line projects at around EUR 153 million.....	26
Table 6 / Substantial strategic gas projects at around EUR 2.3 billion.....	26
Table 7 / Infrastructure project scenarios, in millions of euros.....	27
Table 8 / Infrastructure project scenarios, in % of GNP.....	27
Table 9 / Multiplier effects of infrastructure measures after four years, in millions of euros.....	29
Table 10 / Multiplier effects of infrastructure measures after four years, in % of GNP.....	29
Table 11 / Growth contributions over 15 years in %.....	30
Table 12 / Employment effects in the region.....	32
Figure 1 / The slow spread of the industrial revolution.....	1
Figure 2 / Belated introduction of the railway era in the Balkans.....	2
Figure 3 / Low density of railway network in the Western Balkans.....	3
Figure 4 / Financing of transport infrastructure by national budgets and development banks.....	4
Figure 5 / Motorway construction was stepped up in Albania and Kosovo.....	7
Figure 6 / Motorway constructors in economic recovery.....	8
Figure 7 / Low railway density in the Western Balkans.....	9
Figure 8 / Railway density is three times higher in the control group.....	10
Figure 9 / Low motorway density in the Western Balkans.....	10
Figure 10 / Motorway density is more than three times higher in the control group.....	10
Figure 11 / Car owners in the Western Balkans are few and far between.....	11
Figure 12 / In the comparison group, one in three owns a car.....	11
Figure 13 / Low utilisation of the rail network in the Western Balkans.....	12
Figure 14 / Rail freight efficiency is many times higher in the control group.....	12
Figure 15 / Power outages are especially common in Kosovo and Albania.....	13
Figure 16 / Low generating capacity in Albania, Macedonia and Kosovo.....	13
Figure 17 / Austria has a much higher generating capacity.....	14
Figure 18 / Few high-voltage lines in Albania, Bosnia and Kosovo.....	14
Figure 19 / High density of high-voltage power lines in some comparison countries.....	15
Figure 20 / Losses in electricity transmission are very high throughout the Western Balkans.....	15
Figure 21 / Only Croatia has similarly high losses as the Western Balkan countries.....	15
Figure 22 / Large differences in enrolments in vocational schools.....	16
Figure 23 / Low level of spending on education in the Western Balkan countries.....	17
Figure 24 / Lower supply of human capital than in the comparison countries.....	18
Figure 25 / Little progress in education.....	19
Figure 26 / Still far behind the other countries despite some catching-up in innovation.....	19
Figure 27 / Research expenditure is below the actual level of development.....	20
Figure 28 / Research and Development lag behind significantly.....	21

ABBREVIATIONS

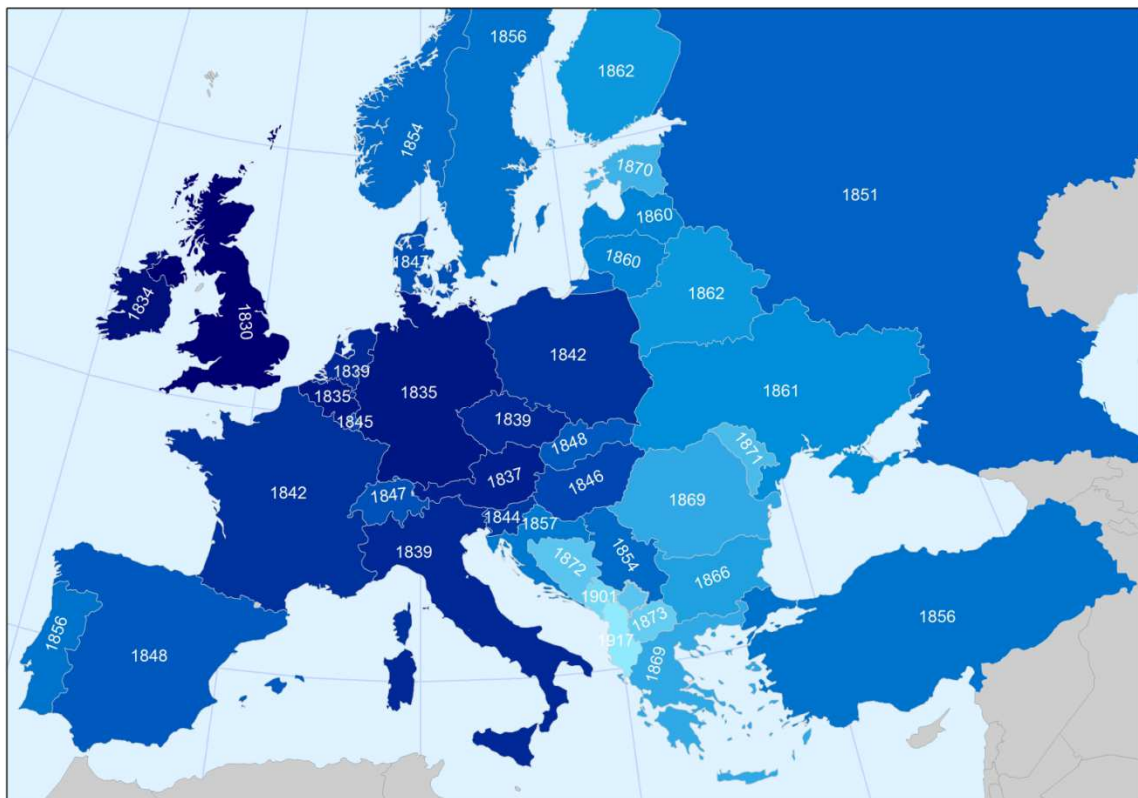
bn	billion
CEB	Council of Europe Development Bank
CIS	Commonwealth of Independent States
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EC	European Commission
EU	European Union
EUR	Euro
GDP	Gross Domestic Product
GNP	Gross National Product
IAP	Ionian Adriatic Pipeline (IAP)
IFI	International Financial Institutions
IMF	International Monetary Fund
IPA	Instrument for Pre-Accession Assistance
KfW	Reconstruction Credit Institute
km	kilometre(s)
LNG	Liquefied Natural Gas
mn	million
NMS	New Member States
PECI	Projects of Energy Community Interest
PPP	Purchasing Power Parity
RCC	Regional Cooperation Council
SAP	Stabilisation and Association Process
SEETO	South East Europe Transport Observatory
TEN	Trans-European Networks
WBIF	Western Balkans Investment Framework

Country codes

AT	Austria
AL	Albania
BA	Bosnia and Herzegovina
BG	Bulgaria
HR	Croatia
HU	Hungary
ME	Montenegro
MK	Macedonia
RO	Romania
RS	Serbia
SI	Slovenia
XK	Kosovo

The development of basic infrastructure, such as rail, followed the geographic dispersion of the industrial revolution (see Figure 2). The first rail line was built in the United Kingdom in 1830; on the continent, Belgium and Germany (1835) as well as Austria (1837) followed. The last European country to build a railway line was Albania in 1917. It is, of course, difficult to come up with a statistical proof of causality between economic development and the construction of railway lines. However, there are good reasons to assume that the construction of infrastructure creates economic expansion even in the short term. In the long term it is more likely to contribute to the industrialisation of large parts of the economy, because production costs decrease and access to markets improves considerably. This leads to a more efficient allocation of capital and labour.

Figure 2 / Belated introduction of the railway era in the Balkans



Note: Kosovo 1874.

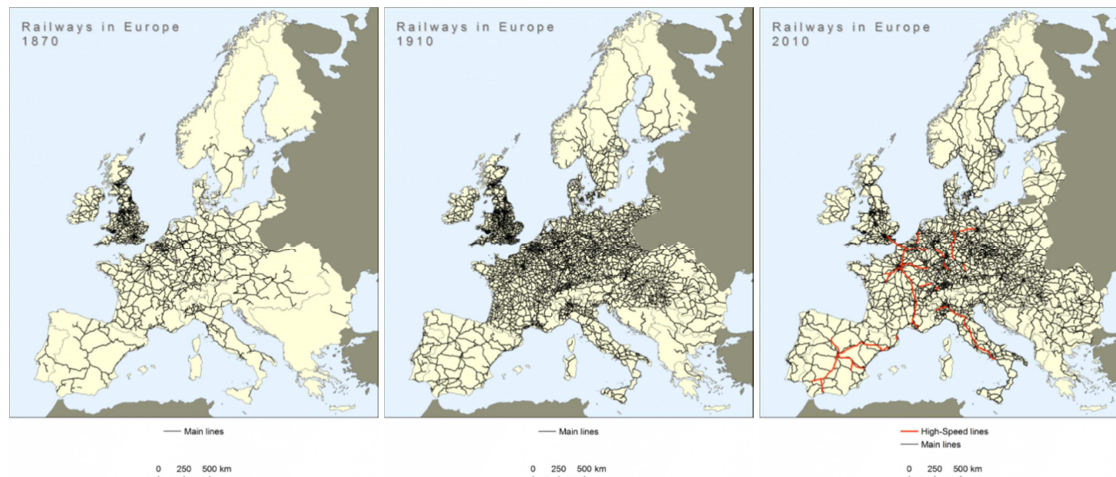
Source: Wikipedia, Wikimedia, FDV.

Not only did infrastructure start late, but there was also very weak development of networks. The density of the railway network, for example, has not increased much in large parts of the region during the last 100 years (see Figure 3). The late start of the railway network could be explained by the fact that the Western Balkan countries were part of the Ottoman Empire in the 19th century, an empire that had experienced stagnation from as early as the 17th century. The slow development in the later phases is probably due to a pronounced political fragmentation of the region. There was a short period of industrialisation during the Tito years in Yugoslavia; but infrastructure development during that period was rather low and did not have a sustained economic impact. Rising interest rates in the course of the second oil crisis in 1979 led to a period of economic decline and this was finally followed by the bloody disintegration of the country into small states that partly show further potential for fragmentation. The

process of European integration could at last provide the region with the stable political framework necessary for a coordinated infrastructure policy as well as with the financing required for implementation. This could eventually lead to stable social and economic development.

Figure 3 / Low density of railway network in the Western Balkans

Core railway network in Europe, 1870, 1910 and 2010



Source: HGISE Railways Historical Database.

INITIATIVES FOR RECONSTRUCTION

After the wars in former Yugoslavia in the 1990s, the Stability Pact, put in place in 1999, created a new impulse to rebuild and expand important transport and energy infrastructure as well as other economically relevant infrastructure. These projects were supported by the EU, International Financial Institutions (IFIs), in particular the World Bank, and several bilateral initiatives. In 2008, the Regional Cooperation Council (RCC) was created as a successor institution to the Stability Pact, thereby also transferring responsibility to the countries of the region. Transport and energy infrastructure is one of the most obvious and prominent areas of cooperation. In addition, the South East Europe Transport Observatory (SEETO) makes important contributions to coordination and expertise.

In parallel to these coordination activities there is the Stabilisation and Association Process (SAP), preparing the Western Balkan Countries for EU accession. The Instrument for Pre-Accession Assistance (IPA) of the EU is supporting candidate and potential candidate countries with financial and technical assistance. The total financing volume for the period of 2007-2013 amounted to EUR 11.5 billion. The IPA budget of the last period had a focus on technical assistance for institutional reforms and planning and preparatory activities for infrastructure projects. In addition, the West Balkan Investment Framework (WBIF) was created at the end of 2009 as a so-called blending instrument, combining grants and loans as well as technical assistance. This instrument is well suited for the financing of infrastructure. WBIF is a cooperation of CEB, EBRD, EIB, KfW and the World Bank as well as bilateral donors. From 2010 until the end of 2014, WBIF's portfolio amounted to EUR 300 million in grants and 2.8 billion in loans.

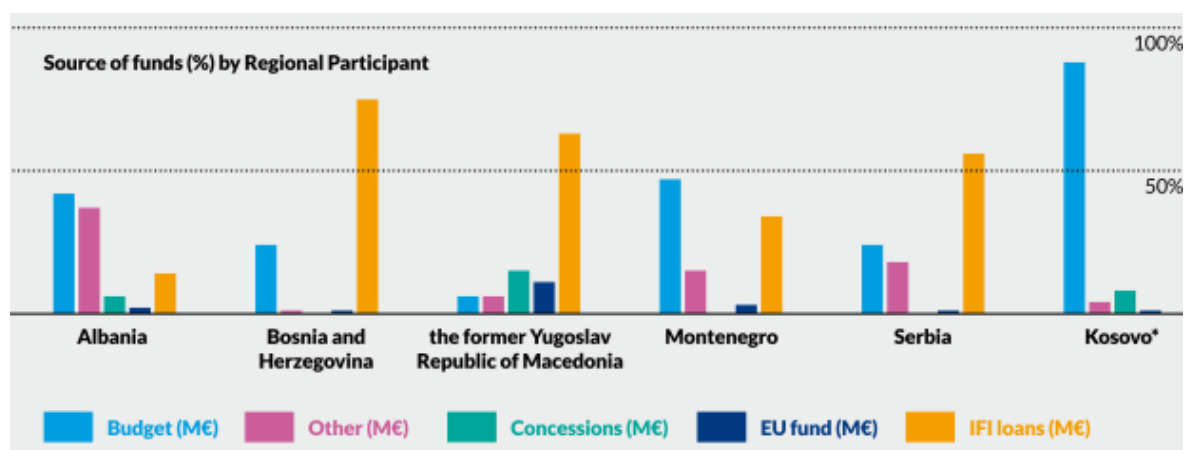
For the new period of pre-accession assistance from 2014-2020, IPA II, there are some important new features: a stronger focus on strategic planning and the possibility to also provide grants for investments, again within the blending instruments of WBIF. There is a total of EUR 11.7 billion allocated for IPA II for the whole period, for the following purposes:

- › Assistance for transition and institution building;
- › Cross-border cooperation (with EU Member States and other countries eligible for IPA);
- › Regional development (transport, environment, regional and economic development);
- › Human resources (strengthening human capital and combating exclusion);
- › Rural development.

Overall, the transportation infrastructure network as defined by SEETO received a total of EUR 9.3 billion. Financing sources were the national budgets (39%) and loans from IFIs (39%; see Figure 4 for distribution among individual countries). Only 2% of the money (EUR 0.2 billion) was from EU funds because IPA funds were mostly used to strengthen institutional capacity in the last period. Therefore, there is some room for improvement in terms of financing and IPA II has responded to this need. It is interesting to see, in any case, that most countries in the region rely on loans from IFIs for the financing of their infrastructure. Only Kosovo and Albania financed projects from national budgets and other sources. In the case of Albania, these other sources are especially prominent and include financing from e.g. OPEC, and the Kuwaiti and Italian governments.

Figure 4 / Financing of transport infrastructure by national budgets and development banks

Share of financing of transport infrastructure in % of total investment, 2005-2014



Source: SEETO.

EXPERIENCE FROM PREVIOUS PROJECTS

Expert interviews with representatives from IFIs revealed some of the challenges these projects are facing:

Finance bottlenecks

In many projects, national funding was also required by IFIs and other donor institutions. However, the countries in the region did not always have sufficient budgetary funds to co-finance the projects (or had to use budgetary resources from other activities). The size of many of the projects also, of course, leads to financial problems. Finally, it is difficult to get private investors for many projects, especially when there is uncertainty over the regulatory framework or concern that the tendering procedures are not carried out competitively.

Lack of planning resources

Large infrastructure projects require very detailed planning and clarity on the extensive framework requirements which exist; for example, required purchases and/or compensations to owners who are affected by the construction, any subsequent supply tariffs for power plants and toll roads, or relevant environmental regulations. In the Western Balkans, human resources that could provide these planning services are often not available to the public institutions. This is particularly the case for administrative and financial planning, less so for technical expertise. Also planning in sequences may cause problems, e.g. when the financial analysis at a later stage requires changes in the technical planning.

Corruption and lack of transparency in the whole process

The lack of transparency of the bidding process and, of course, corruption throughout the whole project can also prove to be problems. Such problems also often only come to light when aggrieved bidders raise formal objections which can lead to long delays in the project implementation. Successful bids by local providers can also lead to problems when they cannot meet their commitments to the necessary quality levels and within agreed timeframes.

Political instability

Finally, instability in the political system can lead to difficulties. For example, projects are sometimes associated with the prestige of certain politicians. Following elections, these projects may then be postponed or completely cancelled and replaced. Moreover, the effects of past conflicts (and indeed current conflicts) create difficulties, especially for planning at a regional level.

Of course, these problems are not specific to the Western Balkans but are also present, in varying degrees, in other areas. However, the combination of several factors (lack of human capacity, corruption, and political instability) may be a peculiarity of the region. In this case, technical assistance can also be offered, for example help with planning services or with the running of the bidding process. All IFIs provide such assistance as part of their activities, especially the WBIF.

A CURRENT INITIATIVE: THE BERLIN PROCESS

The most recent and decisive initiative for more cooperation and improving the conditions for EU accession of the Western Balkan countries is the so-called 'Berlin Process' which was initiated by the German Chancellor, Angela Merkel, at a major conference of the Heads of Governments and their

foreign and economic ministers in August 2014 in Berlin. This entailed extensive support for the Western Balkan countries in the accession process. The follow-up conference in August 2015 in Vienna is planned to be conducted in the same spirit and addresses, among other things, the expansion of the transport infrastructure. The conference will, on the one hand, provide the opportunity to evaluate the results of the Process so far and, on the other hand, to plan future cooperation. Apart from an improvement in the connectivity, one of the other priorities will address issues of (vocational) training. Improvements in both transport and energy networks, as well as improvements in the education system in general and vocational training in particular, should ultimately serve economic prosperity and development.

In preparation for the follow-up conference a joint declaration by the six Prime Minister of the Western Balkans was adopted in Brussels on 21 April 2015 (see the Annex). This contains a list of the priority projects of the infrastructure core network, especially those concerning motorway and railway projects. The list also includes a number of projects in the areas of inland waterways, airports, seaports and river ports. Consequently, a joint statement was issued by the six energy ministers from the region in Vienna on July 2, 2015, to which a list of priority energy infrastructure projects was attached (see the Annex). The selection and promotion of concrete, priority projects is intended to enable genuine progress to be achieved in the coming years.

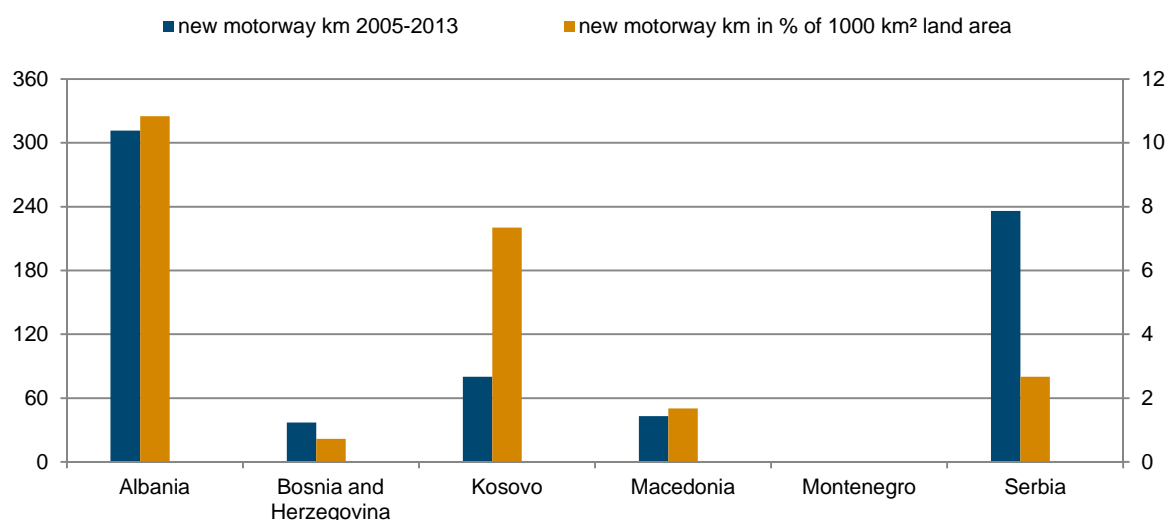
Infrastructure gaps

OVERHAULING THE TRANSPORT INFRASTRUCTURE ...

Among the infrastructure projects, motorway construction occupies a prominent position. Most Western Balkan countries had no modern road network at all at the beginning of the transformation. In Albania, the private ownership of passenger cars was even prohibited until 1990. Notably, this country has built the most kilometres of motorway in the region over the last decade (over 300 km, see Figure 5). Serbia follows with nearly 240 km and Kosovo with 80 km. Bosnia and Herzegovina and Macedonia each built just around 40 km whereas not a single kilometre was built in Montenegro. If you compare the upgraded motorway routes in relation to the area of the country, then only Albania and Kosovo achieved significant expansion of their modern road networks in the last decade.

Figure 5 / Motorway construction was stepped up in Albania and Kosovo

Motorway building between 2005 and 2013 in km (left scale) and in % of country area



Note: Data for Albania and Bosnia and Herzegovina is for 2012.

Source: Eurostat and own calculations.

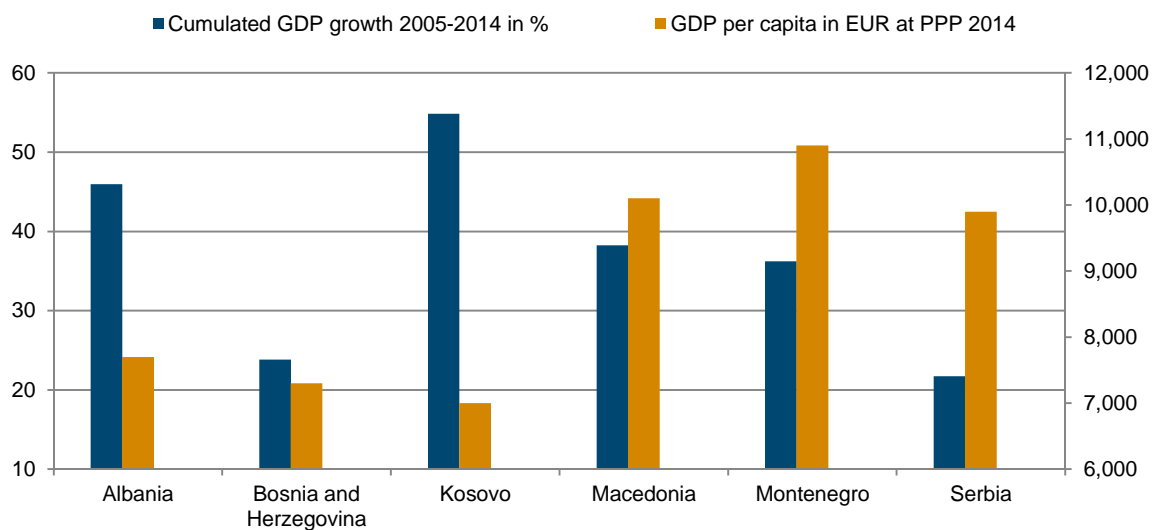
The reasons for this can include the degrees of centralisation and ethnic homogeneity, which are estimated to be higher in these two countries than in the region. In addition, both countries had influential prime ministers who had a cross-border national agenda. Sali Berisha was Prime Minister of Albania in 2005-2013 and Hashim Thaci of Kosovo in 2008-2014. It was exactly during these periods that major motorway construction occurred which also led to a transport connection between the two capitals. In the same period (since 2005), the Federation of Bosnia and Herzegovina has had seven Prime Ministers, the Republic of Srpska six, Montenegro five and Serbia four. Only Macedonia with two Prime Ministers demonstrated a comparable continuity of policy as Albania.

When it comes to the governance structures of the countries, these are fragmented, especially in Bosnia and Herzegovina where, in addition to the two entities and a special administrative region, there are ten cantons. In Serbia, in addition to the central government, there is also the autonomous province of Vojvodina, in which more than a quarter of the population live. In Montenegro, a delicate system is balanced between minority groups. In Macedonia, great care must be taken to keep the inter-ethnic balance between the Macedonian majority and the Albanian minority populations, and in addition, intra-ethnic conflicts are always on the agenda.

The EU has the opportunity to positively influence the region by means of a reaffirmation of the membership perspective of the Western Balkans and by increased political and financial commitment to the region in order to stabilise local systems and contribute to creating an attitude of collaboration. This is essential not only for the development of infrastructure within the national boundaries but also across them and, in addition for the EU, would deliver both political and economic positive effects.

Figure 6 / Motorway constructors in economic recovery

Cumulative GDP growth 2005-2014 (left scale) and GDP per capita in EUR to PPP 2014



Source: wiiw.

Motorway expansion in Albania and Kosovo was mainly financed by the state but also benefited from relatively strong economic growth (see Figure 6) and the corresponding inflows into the public budget. Both countries also withstood the international financial crisis and avoided recession due to their low dependence on exports. An additional growth factor was the low initial level of GDP per capita before the recovery process started. Currently, this is still up to one-third lower than in the other countries of the region. A substantial, not negligible, factor which has contributed to robust growth in Albania and Kosovo is actually the infrastructure-building activity itself. This is also reflected in a significantly higher investment share. The gross capital formation in relation to GDP in Albania and Kosovo was close to 30% over the last decade while it was closer to 20% in the other countries of the region.

Finally, it can be stated that it has been conducive to the development of infrastructure in the Balkans so far when stable governments have actively pursued a cross-border agenda within the framework of a

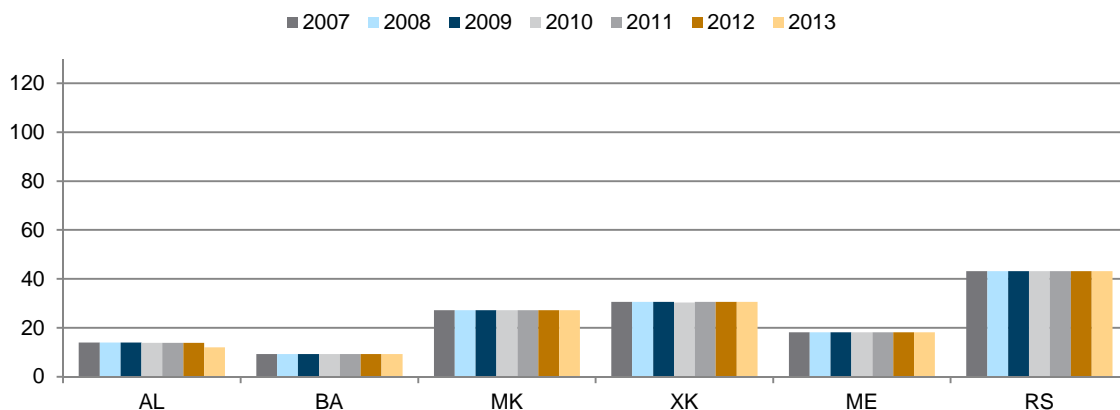
central state structure. In order to have similar success, even in those countries of the Western Balkans which have only weak governments and complex state structures, even more regional cooperation under the aegis of the EU will be required. The primary goal must be to overcome both national administrative borders as well as those between countries in terms of infrastructure.

... BUT STILL LOW RAIL DENSITY AND EVEN LOWER MOTORWAY DENSITY

Despite the activities shown above, the infrastructure gap between the Western Balkan countries and, for example, the new EU Member States in Southeast Europe and their northern neighbours, Austria and Hungary, is substantial. This is especially true for the railway lines where the countries in the Western Balkans average only slightly over 20 kilometres per 1000 square kilometres of land (see Figure 7). The comparison group is almost three times higher (see Figure 8). The railway densities in Bosnia and Herzegovina, Albania and Montenegro are particularly poorly developed. Only Serbia has a railway network density which is at least comparable to that found in Croatia and Romania. Overall, there have been no rail expansion programmes in recent years in the EU candidate countries. On the contrary, in Albania the network has even been reduced. A reduction in the rail density can also be seen, however, in Austria. Hungary is the only country that has recently re-laid several hundred kilometres of railway lines.

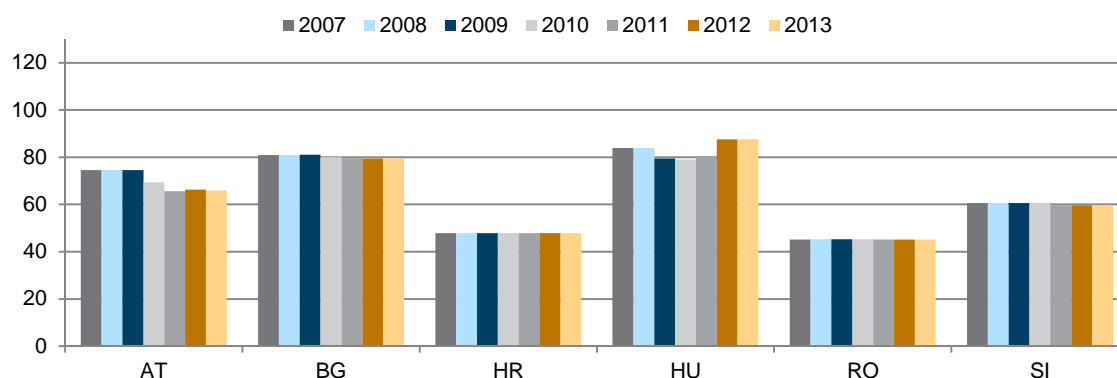
Figure 7 / Low railway density in the Western Balkans

Railway density in km per 1000 km² area

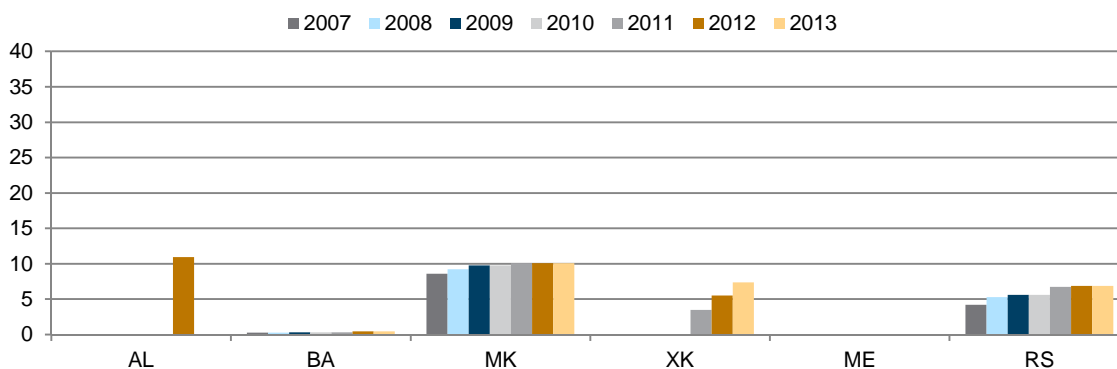


Source: Eurostat, World Bank and own calculations.

The highway construction in the wider region of Southeast Europe has experienced a much stronger momentum than the railway in recent years. Nevertheless, the network density of this important transport infrastructure is also still very low in the Western Balkans (see Figure 9). In addition, Montenegro still does not even have a single kilometre of motorway and Bosnia and Herzegovina has only very few. Interestingly, Albania, for which there is only an estimate for 2012, is the leader in motorway density in the Western Balkans. Together with Macedonia it has reached around the same level as Bulgaria. Kosovo and Serbia are indeed behind, but are catching up. At the same time, the neighbouring new EU member countries are constantly expanding their motorway network. In particular, Hungary and Slovenia have greatly increased their motorway densities through EU and other funding.

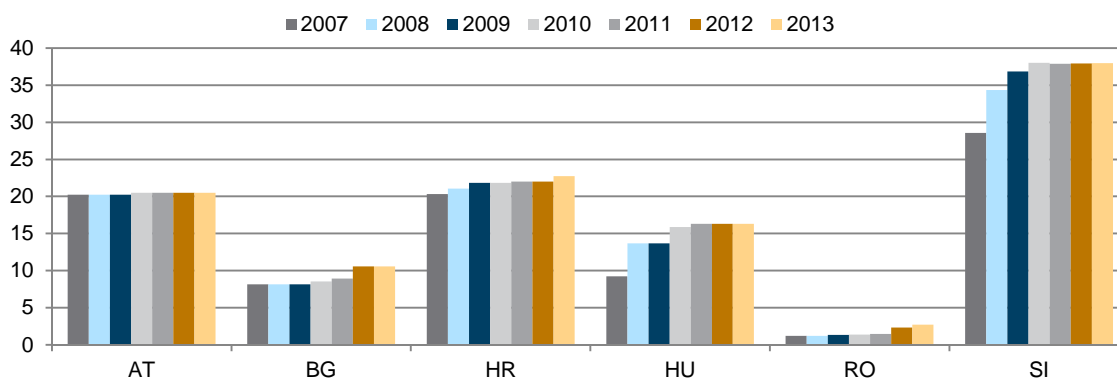
Figure 8 / Railway density is three times higher in the control groupRailway density in km per 1000 km² area

Source: Eurostat, World Bank and own calculations.

Figure 9 / Low motorway density in the Western BalkansMotorway density in km per 1000 km² area

Note: Figures for Albania are from 2012.

Source: Eurostat, World Bank, own estimations and calculations.

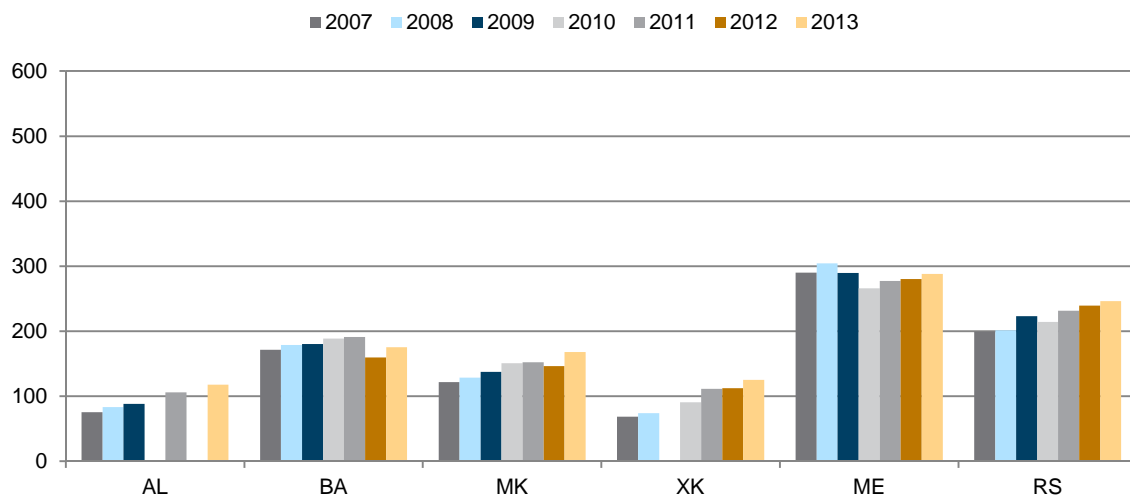
Figure 10 / Motorway density is more than three times higher in the control groupMotorway density in km per 1000 km² area

Source: Eurostat, World Bank, own estimations and calculations.

Of course, the question arises as to what extent there is enough overall demand for new roads. Indeed, on average not even one in five people in the Western Balkans own a private car (see Figure 11). In the comparison group, more than one in three people have their own car (see Figure 12). In this case, however, this is a reflection of the different income levels as a rule but also partly due to the limited availability of modern roads.

Figure 11 / Car owners in the Western Balkans are few and far between

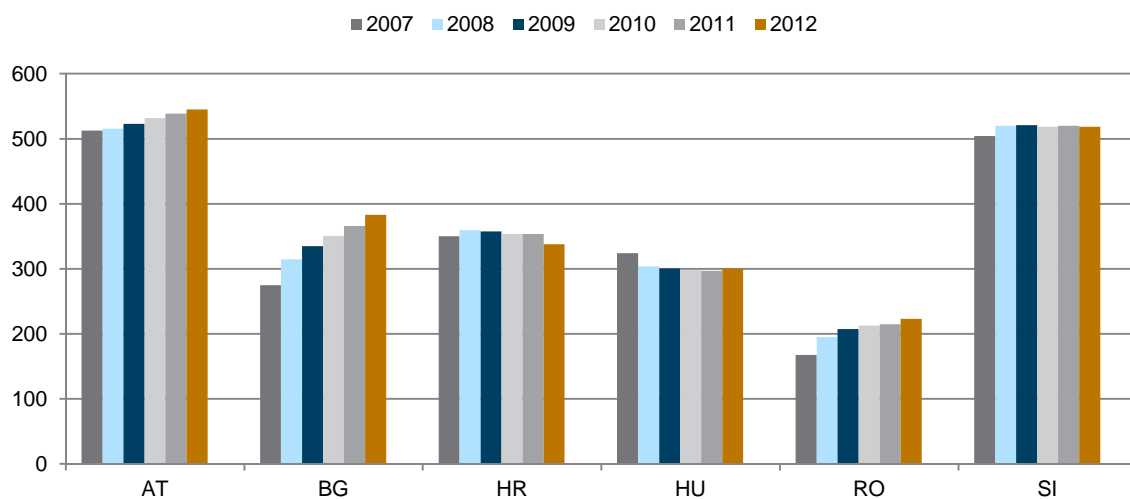
Passenger cars per 1000 people



Source: Eurostat, World Bank and own calculations.

Figure 12 / In the comparison group, one in three owns a car

Passenger cars per 1000 people

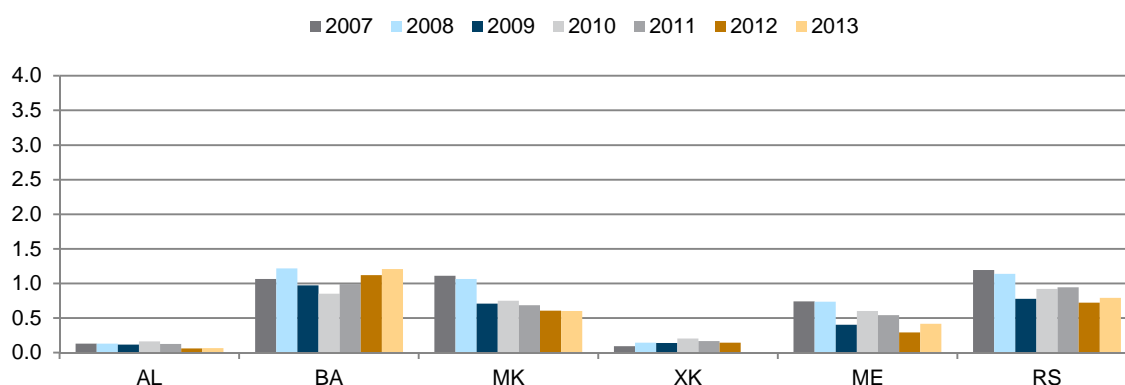


Source: Eurostat, World Bank and own calculations.

The case of railway use is not entirely dissimilar. It is true in considering the efficiency of rail freight transport in the Western Balkans, except in the cases of Bosnia and Herzegovina and Serbia, which are however, still quite far below that of the new EU Member States in Southeast Europe (see Figures 13 and 14). Austria and Slovenia have an above-average capacity utilisation of the rail network. Here, too, the difference is in part due to the lower economic activity in the Western Balkans but also to the lack of railway lines or their poor quality.

Figure 13 / Low utilisation of the rail network in the Western Balkans

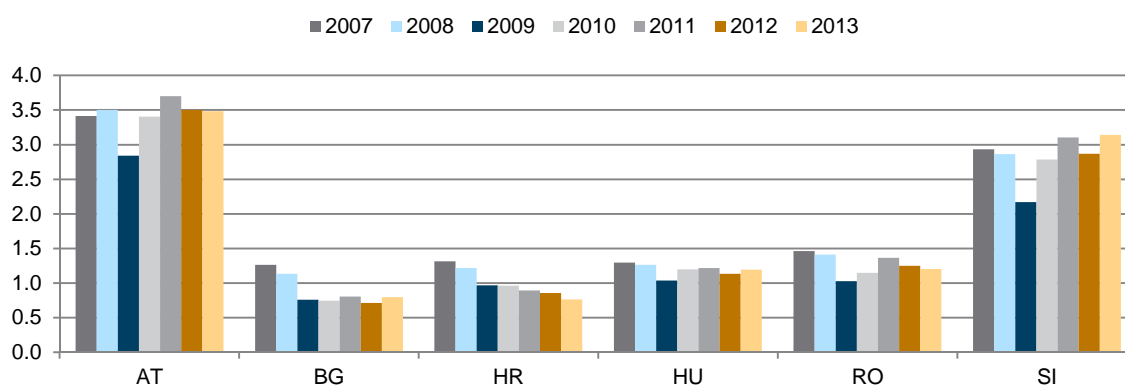
Rail freight efficiency in million-tonnes-km per km of railway line



Source: Eurostat, World Bank and own calculations.

Figure 14 / Rail freight efficiency is many times higher in the control group

Rail freight efficiency in million-tonnes-km per km of railway line



Source: Eurostat, World Bank and own calculations.

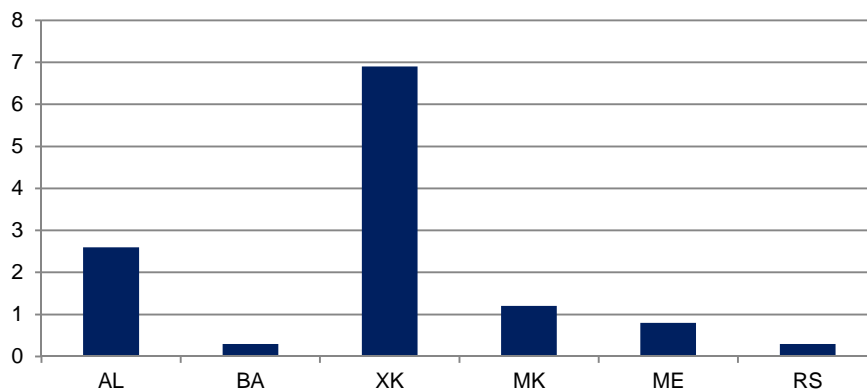
There is very little comparison data available to look at potential infrastructure gaps in other areas, such as inland waterways, airports, seaports and river ports. The available information, for example regarding annual investment in the areas just mentioned, show irregular fluctuations and as a rule are considerably lower than in the comparison group.

BACKLOG DEMAND FOR ENERGY

There is also a significant backlog of demand in the field of energy. This is evident, for example, in the poor results in a survey on the power supply (see Figure 15). The power supply, especially in Kosovo and Albania, suffers regular outages. This is no longer the case in the Southeast European new EU Member States.

Figure 15 / Power outages are especially common in Kosovo and Albania

Value lost due to electrical outages in % of average company sales, 2013

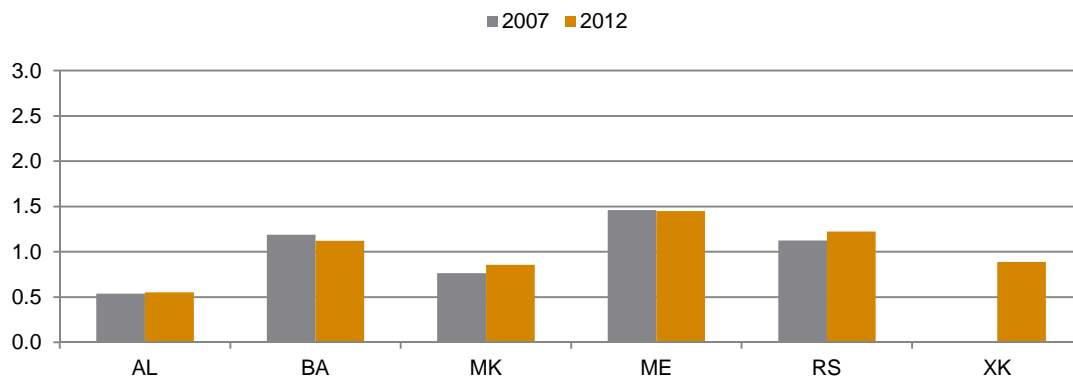


Source: World Bank.

This is partly due to the low capacity for generating electricity. In particular, Albania, Macedonia and Kosovo have less than 1 kW of installed capacity of power generation plants per inhabitant (see Figure 16). In the comparison group only Hungary has a similar low value (see Figure 17). Austria has three times this capacity.

Figure 16 / Low generating capacity in Albania, Macedonia and Kosovo

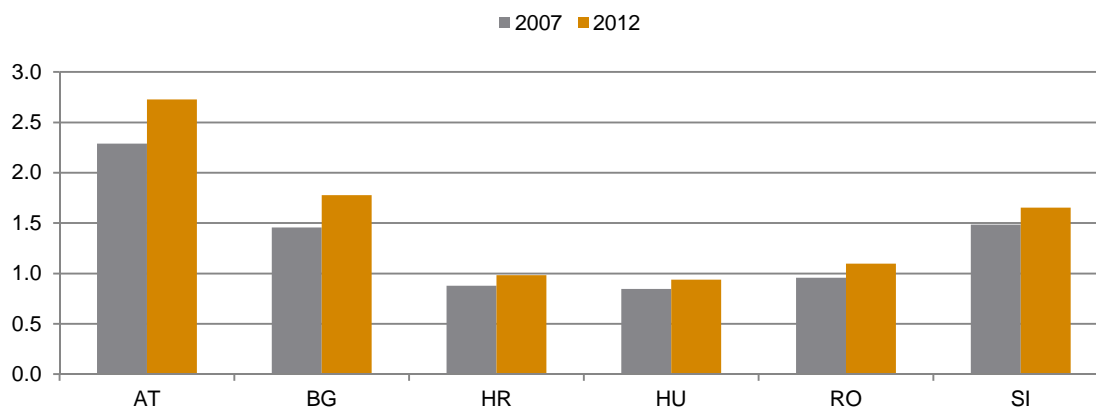
Installed capacity for power generation in kW per inhabitant



Source: EIA.

Figure 17 / Austria has a much higher generating capacity

Installed capacity for power generation in kW per inhabitant

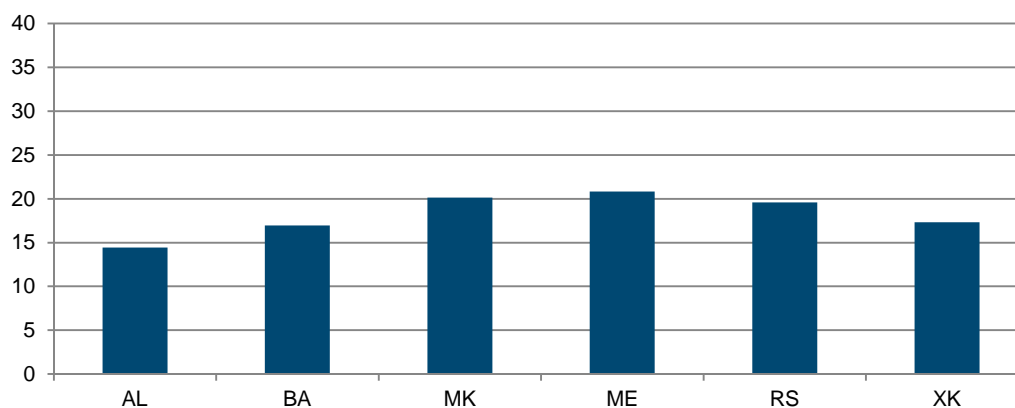


Source: EIA.

A similar picture emerges regarding high-voltage lines. In particular, Albania, Bosnia and Herzegovina and Kosovo have only a few 400 kV lines in relation to the land area (see Figure 18). Austria, Hungary and Slovenia have twice as many (see Figure 19). The remaining countries have average values of around 20 km 400 kV lines per 1,000 km² land area.

Figure 18 / Few high-voltage lines in Albania, Bosnia and Kosovo

400 kV lines in km per 1000 km² land area, 2013

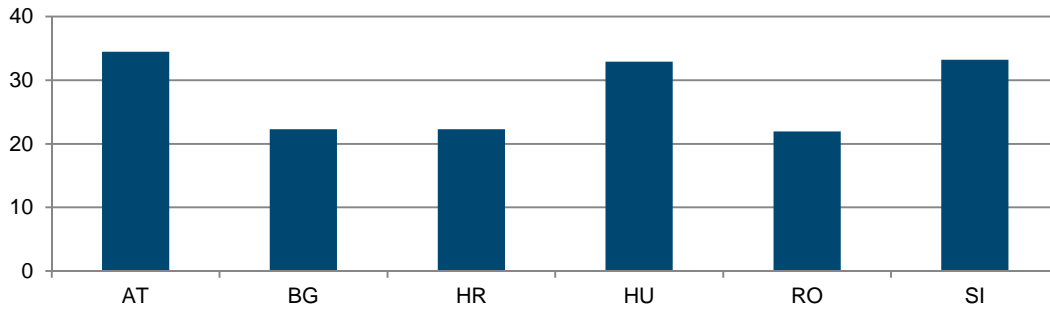


Source: ENTSO-E.

One indicator of the differences in the electricity sector which is particularly striking is the losses from transmission and distribution as a proportion of total production. In addition to technical shortcomings, these are particularly subject to theft. Although the situation in the Western Balkans has significantly improved in recent years (see Figure 20), the numbers are still up to a factor of 5 times higher than in Austria, for example (see Figure 21).

Figure 19 / High density of high-voltage power lines in some comparison countries

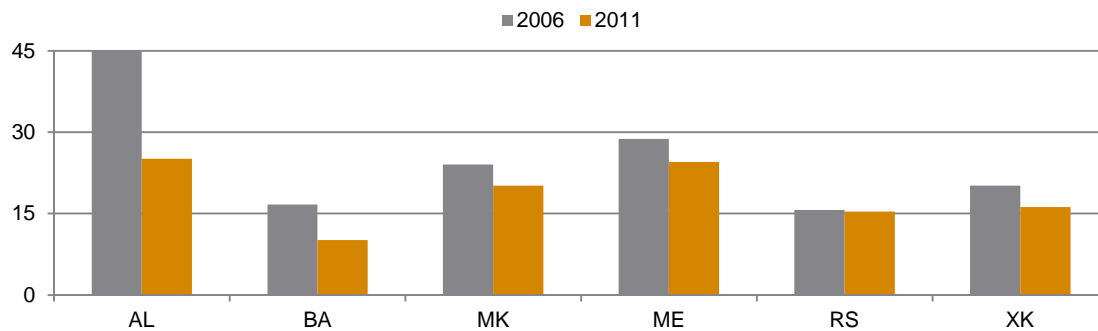
400 kV lines in km per 1000 km² land area, 2013



Source: ENTSO-E.

Figure 20 / Losses in electricity transmission are very high throughout the Western Balkans

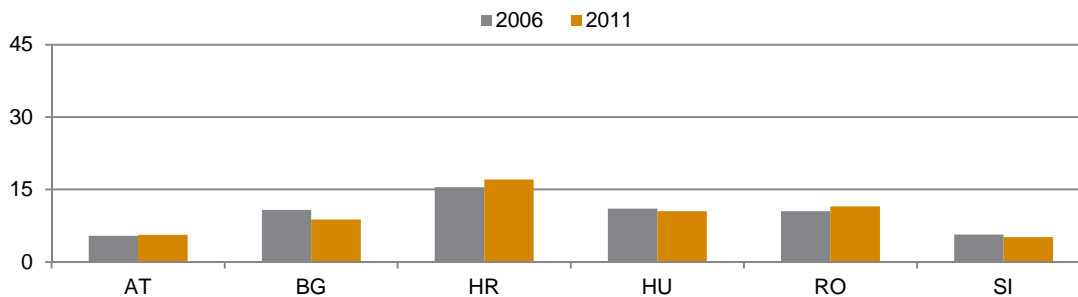
Electric power transmission and distribution losses in % of output



Source: World Bank.

Figure 21 / Only Croatia has similarly high losses as the Western Balkan countries

Electric power transmission and distribution losses in % of output



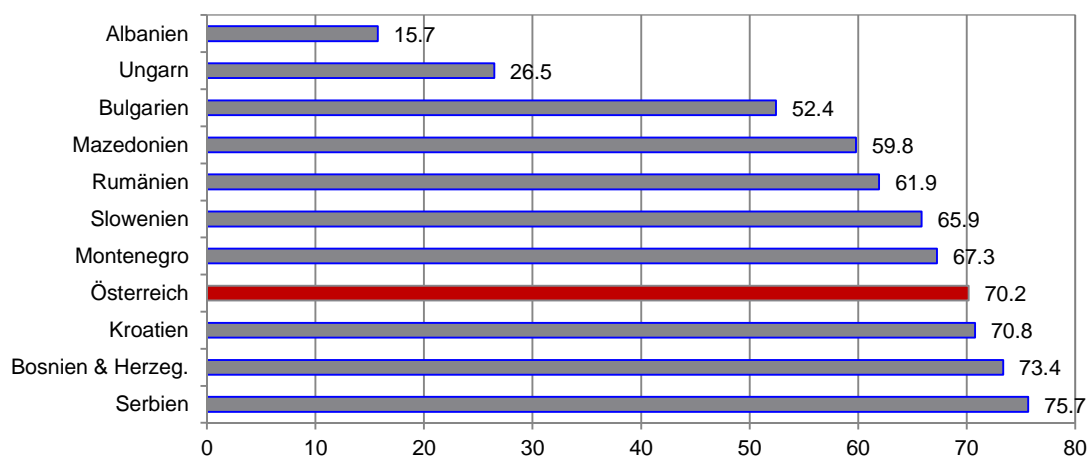
Source: World Bank.

GAPS IN VOCATIONAL TRAINING

The qualification of the employees and the underlying education system provide an important foundation for a country's competitiveness. The education systems in the Western Balkans have been slow to adapt to changing circumstances in the labour market which is partly due to the resistance of teachers to reform, corruption within the public educational system, lack of quality control in private training institutions and the low incentive for new providers of vocational training (Arandarenko and Bartlett, 2012).

Figure 22 / Large differences in enrolments in vocational schools

Students in vocational schools as % of all students at the upper secondary level, 2013



Source: Eurostat and TransMONEE Database.

Enrolments in vocational schools vary greatly within the region (see Figure 22). While Albania has a very low proportion of students in this type of school, Serbia, Bosnia and Herzegovina and Croatia report an almost equally high or even higher proportion than Austria, but this is not reflected in a similarly high level of professional skills acquisition.¹ Among the comparison countries, Hungary has a particularly low proportion of students in this type of school. Vocational schools are poorly equipped due to lack of investment, buildings with poor infrastructure and outdated job descriptions which have not adapted to the changing needs of the labour market. Similarly, the teaching methods and the knowledge of the teachers no longer meet the current requirements. The time spent on work placements in companies differs depending on the school and country. Overall, the practical training is not sufficient to provide solid professional knowledge and experience.

Given the high rates of youth unemployment in the Western Balkans², which exceed those in the EU by far, alternatives are being sought to facilitate the transition from school to work. The focus is mainly on the dual training system in place in Germany, Austria and Switzerland which shows very good results in terms of youth employment. The European Commission suggests in its strategy paper 'Rethinking

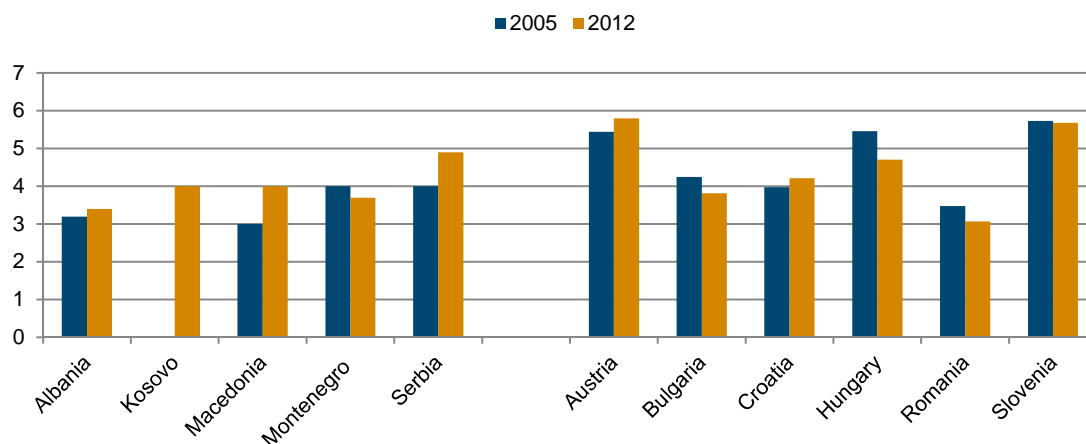
¹ <http://blogs.lse.ac.uk/lsee/2014/06/05/vet-balkans/>

² Bosnia and Herzegovina and Kosovo report youth unemployment rates of 50-60%.

Education³ that workplace learning, in the context of dual models, should be a mainstay of the vocational training systems throughout Europe to reduce unemployment among young people. With regard to the Western Balkan countries, the introduction of dual training is especially encouraged and supported by donor organisations. For example, the Austrian Development Cooperation supports Albania in the process of developing a vocational training system that meets the requirements of the labour market and the private sector, with the dual system of vocational education at its core. The Swiss Development Corporation⁴ provides short-term internships in the wood and metal processing sectors in Bosnia and Herzegovina and funds training firms that provide practical experience in management as well as in marketing and accounting in Kosovo.

Figure 23 / Low level of spending on education in the Western Balkan countries

Spending on education as % of GDP



Source: Eurostat.

However, it seems as though a 1:1 transfer of the dual education system to the Western Balkan countries makes no sense since evaluations of transfer projects generally show only low sustainability.⁵ The differences in the educational systems, institutional frameworks and traditions between the transferring countries and the recipient countries are too great for this.⁶ In order to implement this system, we need companies that are willing to take apprentices and have sufficiently experienced professionals who can train them. Private companies have shown little interest so far in offering internships, participating in training programmes and the preparation of job descriptions or even in evaluating existing programmes. Moreover, it requires the absolute support of political and social partners, whose structures are, however, designed to be very weak in the Western Balkans, in order to implement such programmes. However, it could be that international companies with strong dual

³ <http://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX:52012DC066>

⁴ SDC 'Success factors of the Swiss vocational education and training system in the Western Balkans', 2014, p. 2.

⁵ Bliem et al. (2014), p. 30; Euler (2013), p. 12.

⁶ WIFI (2014).

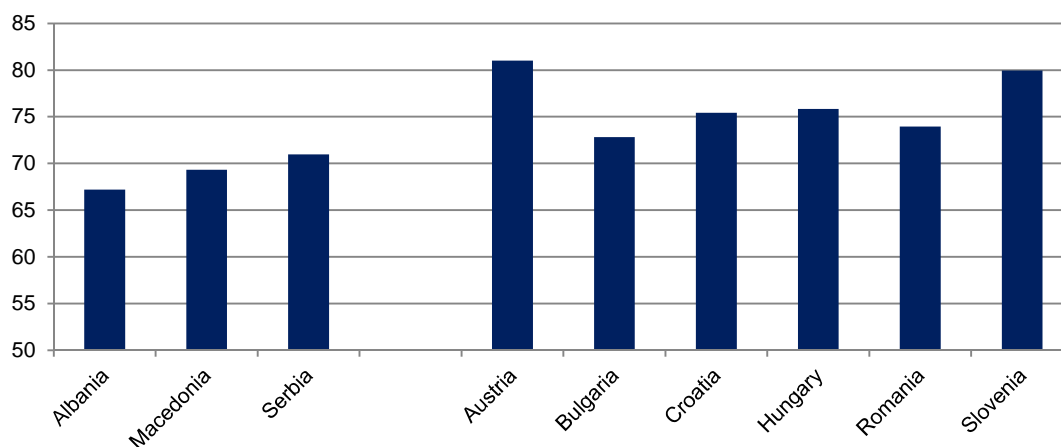
traditions in their home countries take an interest in the establishment of a dual system and are willing to help shape the reform of vocational training.⁷

In terms of Gross Domestic Product, the spending on education in the Western Balkan countries is, in some cases, significantly below the EU countries current values. As Figure 23 shows, Albania, followed by Montenegro, reported the lowest education expenditure ratios, whereas Serbia reported a higher rate than most EU countries listed here. The total expenditure on education in the period 2005-2012 (latest available information) increased in almost all Western Balkan countries. In recent years, the majority of the funds for education have been invested in tertiary education which has created over-capacity at this level, while the primary and secondary education sectors have been neglected.

With regard to the ability to leverage their human capital successfully, the Western Balkan countries are far behind international standards in ranking. In terms of the human capital index – based on the pillars of education, health, labour and employment – Serbia makes the best use of the potential of its labour force in the region and with 71 out of 100 possible points (see Figure 24) ranks in 50th place (among 124 countries); Macedonia and Albania rank 55th and 66th respectively. Among the comparison countries, Austria came out on top with 81 points (11th place), followed by Slovenia, Hungary and Croatia, while Romania and Bulgaria ranked 39th and 42nd respectively.

Figure 24 / Lower supply of human capital than in the comparison countries

Human Capital Index, 2015



Note: No values for Bosnia and Herzegovina, Kosovo and Montenegro.

Source: WEF The Human Capital Report 2015.

RESEARCH AND TRAINING BELOW EXPECTED LEVELS

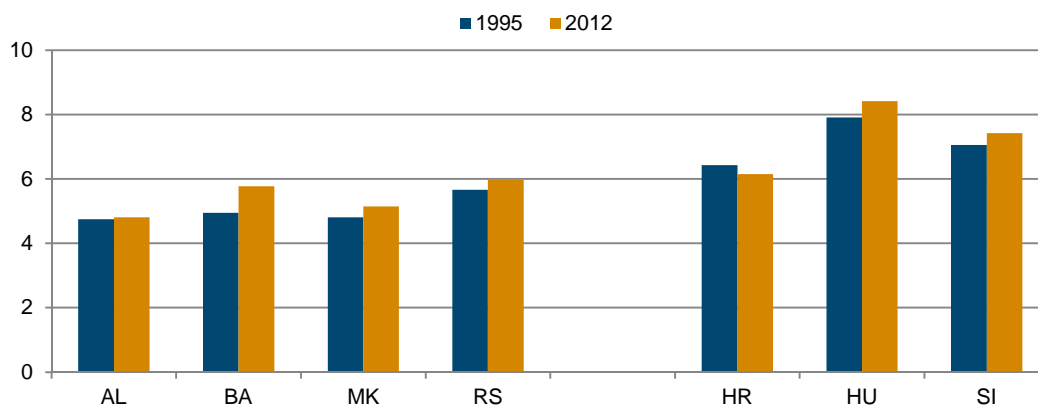
It is generally assumed that investments in education and research significantly influence long-term economic development. By means of the Knowledge Assessment Methodology developed by the World Bank, training and innovation indices for individual countries can be calculated. As such the Education

⁷ Bliem et al. (2014), p. 30.

Index includes information on average years of schooling and gross enrolment shares in secondary and tertiary education. The Innovation Index is calculated from population-weighted data on received and paid licence fees, granted US Patents and articles published in scientific and technical journals.

Figure 25 / Little progress in education

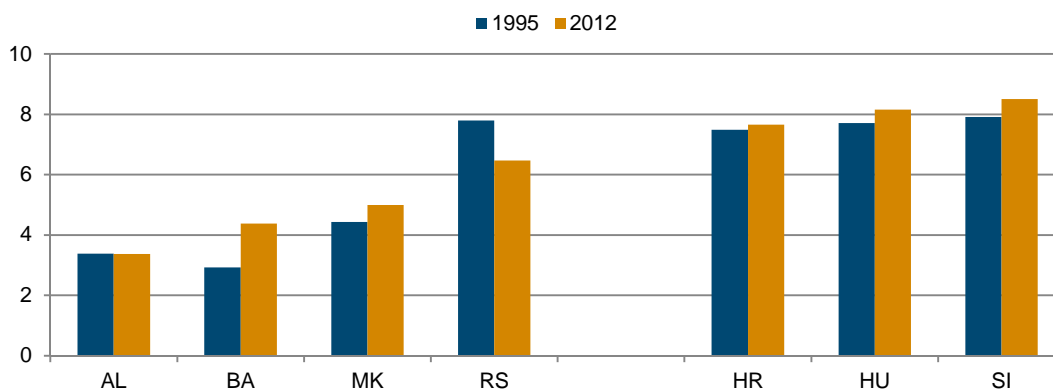
Education Index



Source: Knowledge Assessment Methodology 2012.

Figure 26 / Still far behind the other countries despite some catching-up in innovation

Innovation Index



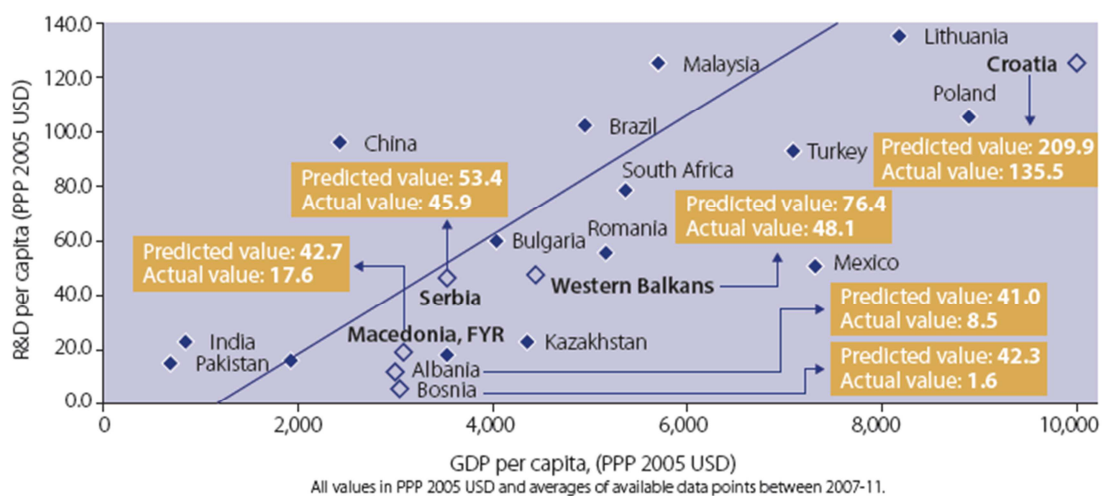
Source: Knowledge Assessment Methodology 2012.

Between 1995 and 2012 all the Western Balkan countries, with the exception of Albania, were able to improve on their Education Index scores; however, the level of Slovenia, and in particular that of Hungary, were not reached by far. Serbia alone was able keep up with Croatia, which even lost some ground during the investigation period (see Figure 25). In addition, in terms of innovation, most Western Balkan countries caught up a bit in the 1995-2012 period, but still lagged far behind the values calculated for Croatia, Hungary and Slovenia (see Figure 26).

Overall, the science sector in the Western Balkans is characterised by a restricted scientific performance due to inadequate availability of human resources, research funds and research institutions and a research-hostile legal environment (World Bank, 2013). In terms of human resources, the 'brain drain' is always pointed out – the large number of scientists, technicians and engineers who have emigrated from the Western Balkan countries in the past two decades. There are hardly any links with international research networks and with the international scientific community. Further, cooperation between research and industry has been given little importance so far.

Figure 27 / Research expenditure is below the actual level of development

R&D expenditure per capita (estimated and actual values), 2007-2011



Source: UNESCO Statistics; World Development Indicators.

The Western Balkan countries invest less in Research and Development (R&D) than would be expected from their levels of development. According to World Bank calculations, the gaps between the estimated R&D expenditures per capita, based on the per capita incomes, and the values actually achieved are huge, with the gaps in Albania and Bosnia and Herzegovina the biggest. There are also large differences between the individual countries (see Figure 27).

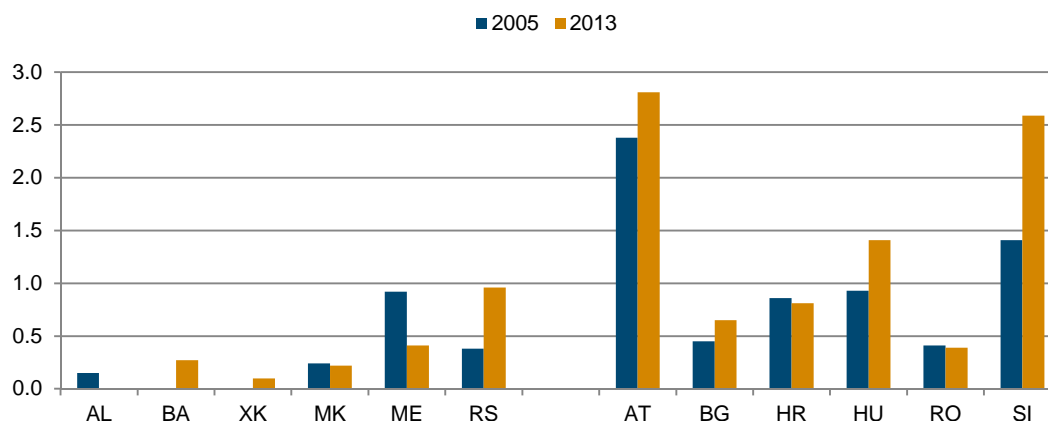
Spending on Research and Development in the Western Balkan countries is far below that of the comparison countries in some cases and as a proportion of Gross Domestic Product ranges from 0.1% of GDP in Kosovo to around 1% in Serbia. Serbia ranks higher than Bulgaria, Croatia and Romania. The low activity in the R&D sector in all Western Balkan countries applies to the public and the private sectors alike. In contrast, take note of the spending on R&D in Austria and Slovenia, where the latter recorded the highest percentage growth in the same period to achieve between 2.6% and 2.8% of GDP, which is still under the Europe 2020 target of 3% (see Figure 28).

In summary it can be stated that the vocational training in the Western Balkans does not meet the needs of the economy and only hesitant steps are being taken to reform the education system. The neglect of vocational training is also reflected in that the low spending on education contradicts international comparisons: funds flow primarily into tertiary education at the expense of secondary education (training of professionals). In addition, the expenditures on Research and Development are far below those

values which would be expected due to the level of economic development of the region. The availability of human capital remains insufficient despite minor successes.

Figure 28 / Research and Development lag behind significantly

Spending on R&D as % of GDP, 2005 and 2013



Notes: Albania 2008; Bosnia and Herzegovina 2012; Kosovo, Montenegro and Macedonia 2011; Serbia 2008 and 2012.
Source: Eurostat; Regional Cooperation Council (Kosovo) and era watch (Bosnia & Herzegovina).

Improvements in the education and research infrastructure at all levels are required to promote the development of human capital and thus contribute to the social and economic development of the country. A 1:1 transfer of the successful dual training system in Austria and Germany to the Western Balkan countries, however, does not make sense due to a lack of institutional capacity and the lack of entrepreneurs who are willing to train apprentices. However, it could be determined which elements of the dual training could be successfully integrated into the existing structures in order to promote developments in this sector. Moreover, foreign companies operating in the region could be motivated to participate in training programmes and to transfer their know-how. It would also be interesting in this context to consider the cooperation of such companies with local suppliers. Presumably several measures will be necessary to develop sustainable training systems.

Economic effects of infrastructure investment

ONLY SOME PRIORITY INFRASTRUCTURE PROJECTS HAVE MATURED

The demand for transport infrastructure is very high in almost all sectors. This demand, which is reflected in the low railway density and even lower motorway density in the Western Balkans, was undoubtedly a major reason for the joint declaration of the six Prime Ministers of the Western Balkans on 21st April, 2015 which established the priority projects of the infrastructure core network – particularly motorway and railway projects. In addition, some projects are also included in the areas of inland waterways, airports, seaports and river ports.

New construction in transport

These projects were examined in detail by SEETO (2015). Based on the planning status and project progress, the priority projects were further restricted. The following two tables list the individual road (Table 1) and rail (Table 2) projects and specify whether the project, or part of the project, have been categorised by SEETO as priority projects, for which funding will be considered, are sufficiently mature and for which a comprehensive evaluation is available based on a completed feasibility study.

From the eleven new road construction projects, SEETO identified four as priorities and mature. Taken together, these projects total a length of 221 kilometres at an estimated cost of around EUR 2.9 billion. These relate primarily to the access road from the eastern Croatian motorway network to Central Bosnia, the central portion of the north-south connection in Montenegro and the connection of the Kosovan capital Pristina with the Serbian border in the northeast. A smaller project will also address the Belgrade bypass which has been certified by SEETO as with an estimated internal rate of return of 14%, it promises the highest economic benefits.

From the eight rail construction projects, there are two that have been categorised by SEETO as priorities and mature. Their total length is 189 km at an estimated cost of around EUR 1.1 billion. For the most part these relate to the connections of the Macedonian railway network to the borders with Albania and Bulgaria. A smaller, but classified as important, project is the expansion of railway from central Kosovo to the Macedonian border. In regard to other projects, there are a number of smaller projects, certified by SEETO as priorities and mature, to do with reconstruction and dredging along the Sava and Danube rivers. These projects are estimated to cost around EUR 100 million.

Table 1 / 221 km mature new priority road building projects at around EUR 2.9 billion

Extension of the TEN-T in the core road network in the Western Balkans and SEETO priority sections

Name	Total section	SEETO-section-new building	Score	IRR	€ million	km
Corridor Vc	Bosanski Samac (BA) - Doboj (BA) - Sarajewo (BA) - Mostar (BA) - Bijaca (HR-border)	Vukoslavlje - Karuse - Banlozi (BA)	84%	13%	1245	110
Corridor VIII	Tirana/Durres (AL) - Elbasan (AL) - Struga (MK) - Tetovo (MK) - Skopje (MK) - Deve Bair (BG-border)					
Corridor X	Batrovci (HR-border) – Belgrade (RS) - Niš (RS) - Skopje (MK) - Bogorodica (GR-border)	Strazevica - Bujanj Potok (Belgrade by pass, RS)	83%	14%	97	10
Corridor Xb	Subotica (HU-border) - Novi Sad (RS) - Belgrade (RS)					
Corridor Xc	Niš (RS) - Gradina (BG-border)					
Route 1	Debeli Brijeg (HR-border) - Bar (ME)					
Route 2	Podgorica (ME) - Durres (AL) - Fier (AL) - Tepelena (AL) - Qafë Botë (GR-border)					
Route 2a	Gradiska (HR-border) - Banja Lika (BA) - Lašva-Travnik (BA)					
Route 4	Vršac (RO-border) - Belgrade (RS) - Podgorica (ME) - Bar (ME)	Podgorica - Mateševo (ME)	44%	5%	810	41
Route 6	Pristina (XK) - Skopje (MK)					
Route 7	Lezhë (AL) - Pristina (XK) - Doljevac/Niš (RS)	Pristina-Merdare (XK)	65%	8%	750	60

Note: Score corresponds to a SEETO overall rating on the usefulness of a project from 0-100%. IRR is the estimated Internal Rate of Return for the project.

Source: wb6, SEETO.

Table 2 / 189 km mature new priority rail building projects at around EUR 1.1 billion

Extension of the TEN-T in the core rail network in the Western Balkans and SEETO priority sections

Name	Total section	SEETO-section-new building	Score	IRR	€ million	km
Corridor Vc	Bosanski Samac (BA) - Sarajewo - Mostar - Capljina (BA)					
Corridor VIII	Skopje (MK) - Deve Bair (BG-border)	Beljakovce-BG-border; Kicevo-AL-border (MK)	87%	9%	940	125
Corridor X	Sid (RS) - Belgrade - Niš - Skopje (MK) - Gevgelija (GR-border)					
Corridor Xb	Kelebija (HU-border) – Novi Sad (RS) – Stara Pazova/Belgrade (RS)					
Corridor Xc	Niš (RS) – Dimitrovgrad (BG-border)					
Route 2	Podgorica (ME) – Durres/Tirana (AL)					
Route 4	Vrsac (RO-border) – Belgrade (RS) – Podgorica (ME) – Bar (ME)					
Route 10	Krusevac (RS) - Kraljevo (RS) – Pristina (XK) – Skopje (MK)	Fushe Kosove (XK) - MK-border	86%	9%	140	64

Note: Score corresponds to a SEETO overall rating on the usefulness of a project from 0-100%. IRR is the estimated Internal Rate of Return for the project.

Source: wb6, SEETO.

According to SEETO, all the remaining new construction projects on the list of the six Prime Ministers are, at best, priority projects in the pipeline, i.e. projects that still need a complete project plan and project evaluation to assess their feasibility. These projects are not ready for immediate implementation. They first need the financing for planning and other preparatory work.

Hence, the short and medium term financing needs in new construction of transport infrastructure in the Western Balkans comes to around four billion euros which is made up of EUR 2.9 billion on new road construction projects and EUR 1.1 billion on new railway construction projects. In relation to the Gross National Products (GNPs) of the Western Balkan countries, the new construction projects together account for a share of just under 6%, with 4.1% in road construction projects and 1.5% in rail projects. However, there are significant differences concerning the proportion of projects to the GNP of the countries: while for Serbia this represents only 0.3% of GNP, it is of significant relevance to other countries, i.e. Montenegro (24%), Kosovo (16%), Macedonia (11%) and Bosnia and Herzegovina (9%).

Rehabilitation and modernisation of transport

In the SEETO priority projects for rehabilitation and modernisation of the core road network in the Western Balkans there are only two minor projects (Table 3) – one east of the Macedonian capital Skopje and one from the Croatian border along the Montenegrin coast. The priority projects classified by SEETO for the rehabilitation and modernisation of the core rail network in the Western Balkans are more important. The modernisation of the Serbian railway from the Croatian and Hungarian borders via Belgrade towards the Macedonian border is of particular importance. These projects require an estimated total investment of about EUR 1.4 billion (about 4.2% of the Serbian GNP). There is a medium-sized railway renovation project (EUR 139 million or 1.4% of the Albanian GDP) to modernise the route from the Montenegrin border in the direction of the Albanian capital. There are also two smaller modernisation projects east of Skopje, near the Montenegrin port of Bar. In total, these mature projects amount to EUR 1.6 billion.

Energy

Apart from the main road and rail projects there are also some infrastructure projects in the energy sector. Thus, the six energy ministers from the region announced a joint declaration on July 2nd, 2015 in Vienna which had a list of priority energy infrastructure projects attached. These include several 400 kV power lines and a natural gas transmission system between Serbia and Bulgaria. The investment volumes range from small to medium sizes. The most important electricity project is the power line from Albanian Elbasan to Macedonian Bitola representing a joint investment of an estimated EUR 129 million. The development of the sections on both sides of the border was assessed by the EC as having good implementation prospects (Table 5). The same applies for a section of the 400 kV Trans-Balkan corridor in Central Serbia (EUR 24 million). In addition, there are also several strategic natural gas infrastructure projects which aim to reduce the dependence of the region on Russian natural gas (Table 6). This includes the planned construction of two Liquid Natural Gas (LNG) terminals, one on the north-west Croatian island of Krk and one near the southern Albanian Fier, as well as connecting them to the construction of the Ionian-Adriatic Pipeline (IAP) along the coasts of Croatia, Montenegro and Albania. The total costs of the strategic gas projects are estimated at around EUR 2.3 billion.

Table 3 / Only few mature priority road renovation projects of around EUR 25 million

Renovations of the core road network in the Western Balkans and SEETO priority sections

Name	Total section	SEETO-section- renovation	Score IRR	€ mn	km
Corridor Vc	Bosanski Samac (BA) - Doboj (BA) - Sarajevo (BA) - Mostar (BA) - Bijaca (HR-border)				
Corridor VIII	Tirana/Durres (AL) - Elbasan (AL) - Struga (MK) - Tetovo (MK) - Skopje (MK) - Deve Bair (BG-border)				
Corridor X	Batrovci (HR-Border) - Belgrade(RS) - Nis (RS) - Skopje (MK) - Bogorodica (GR-border)	Kumanovo- Miladinovce (MK)		17	44
Corridor Xb	Subotica (HU-border) - Novi Sad (RS) - Belgrade (RS)				
Corridor Xc	Nis (RS) - Gradina (BG-border)				
Route 1	Debeli Brijeg (HR-border) - Bar (ME)	Debeli Brijeg- Petrovac-Bar (ME)		8	
Route 2	Podgorica (ME) - Durres (AL) - Fier (AL) - Tepelena (AL) - Qafë Botë (GR-border)				
Route 2a	Gradiska (HR-border) - Banja Lika (BA) - Lašva-Travnik (BA)				
Route 4	Vršac (RO-border) - Belgrade (RS) - Podgorica (ME) - Bar (ME)				
Route 6	Pristina (XK) - Skopje (MK)				
Route 7	Lezhë (AL) - Pristina (XK) - Doljevac/Niš (RS)				

Note: Score corresponds to a SEETO overall rating on the usefulness of a project from 0-100%. IRR is the estimated Internal Rate of Return for the project.

Source: wb6, SEETO.

Table 4 / Several mature priority rail renovation projects at around EUR 1.6 billion

Renovations of the core rail network in the Western Balkans and SEETO priority sections

Name	Total section	SEETO- section- renovation	Score IRR	€ mn	km
Corridor Vc	Bosanski Samac (BA) - Sarajevo - Mostar - Caplijina (BA)				
Corridor VIII	Skopje (MK) - Deve Bair (BG-border)				
Corridor X	Sid - Belgrade - Nis (RS) - Presevo (MK-border)	Various modernisations (RS)		739	
Corridor X	Skopje (MK) - Gevgelija (GR-border)	Kumanovo - Deljadrovce (MK)	100% 10%	43	17
Corridor Xb	Kelebija (HU-border) – Novi Sad (RS) – Stara Pazova/Belgrade (RS)	Belgrade - Novi Sad - Subotica (RS)		665	
Corridor Xc	Nis (RS) – Dimitrovgrad (BG-border)				
Route 2	Podgorica (ME) – Durres/Tirana (AL)	Vora - Shkodra - Hani Hotit (AL)		139	
Route 4	Vrsac (RO-border) – Belgrade (RS) – Podgorica (ME) – Bar (ME)	Vrbnica - Bar (ME)		14	
Route 10	Krusevac (RS) - Kraljevo (RS) – Pristina (XK) – Skopje (MK)				

Note: Score corresponds to a SEETO overall rating on the usefulness of a project from 0-100%. IRR is the estimated Internal Rate of Return for the project.

Source: wb6, SEETO.

Table 5 / Few mature 400 kV priority power line projects at around EUR 153 million

Priority energy infrastructure projects to promote the IPA 2015 framework

Project	Country	EUR mn	Status
400 kV interconnector, Elbasan (AL) - Bitola (MK)	AL	80	mature
400 kV interconnector, Elbasan (AL) - Bitola (MK)	MK	49	mature
400 kV interconnector, Bajina Basta (RS) - Pljevlja (ME) - Visegrad (BA)		53	
400 kV interconnector, Pancevo (RS) - Resita (RO)		50	
400 kV Transbalkan Corridor, Kragujevac (RS) - Kraljevo (RS)	RS	24	mature
Gas interconnection, Serbia - Bulgaria (serbian section)		66	

Note: The project status was classified by the EC.

Source: Energy Community, European Commission.

Table 6 / Substantial strategic gas projects at around EUR 2.3 billion

Strategic gas projects

Project	Country	EUR mn
IAP pipeline	HR	330
IAP pipeline	ME	119
IAP pipeline	AL	169
LNG terminal Krk (+pipeline)	HR	940
EAGLE LNG terminal (+pipeline)	AL	700

Source: Energy Community, EuropeAid / COWI & IPF Consortium.

AN INVESTMENT PACKAGE OF 7.7 BILLION CREATES 1% GROWTH

In a recent IMF publication (2014), the macroeconomic effects of public investment were subjected to an empirical analysis. The results show that an increase in capital expenditures by one percentage point of GNP in developed economies translates as an increase of 0.4 per cent in the first year and a cumulative rise of 1.5% after four years. Estimates for developing countries result in somewhat lower effects – depending on the method used – and are in the ranges 0.25% -1% in the first year and 0.5% -1.15% of GNPs in the 4th year. In the present study we use the more optimistic multipliers for developed economies. We base our analysis on these multipliers, as no specific empirical studies for the Western Balkans are available. Moreover, we show different combinations of investment volumes in the form of scenarios, in million euros and as a percentage of GDP (see Tables 7 and 8).

In addition to the investment volumes that we derived from the SEETO analyses, we also present a so-called 'Scenario 2' which is based on an assessment of the EC of a total investment in transport infrastructure in the Western Balkans of EUR 7,700 million by 2020.

Taking only the new construction of transport infrastructure in the whole region (an investment of around EUR 4 billion), this would result in an additional GNP of about 8% after four years (EUR 6,000 million) for the six Western Balkan countries (see Tables 9 and 10).

Table 7 / Infrastructure project scenarios, in millions of euros

Scenarios:	new building			rehabilitation			energy			scenario 2
	road	rail	road and rail	road	rail	road and rail	energy	IAP pipeline	LNG terminals	
Albanien	0	0	0	0	139	139	80	169	700	.
Bosnia and Herzegovina	1245	0	1245	0	0	0	0	0	0	.
Kosovo	750	140	890	0	0	0	0	0	0	.
Macedonia	0	940	940	17	43	60	49	0	0	.
Montenegro	810	0	810	8	14	22	0	119	0	.
Serbia	97	0	97	0	1404	1404	24	0	0	.
TOTAL WB6	2902	1080	3982	25	1600	1625	153	288	700	7700
Croatia	0	0	0	0	0	0	0	330	940	.
TOTAL WB6+HR	2902	1080	3982	25	1600	1625	153	618	1640	7700

Source: wb6, SEETO, Energy Community, European Commission, EuropeAid / COWI & IPF Consortium, wiiw.

Table 8 / Infrastructure project scenarios, in % of GNP

Scenarios:	new building			rehabilitation			energy			scenario 2
	road	rail	road and rail	road	rail	road and rail	energy	IAP pipeline	LNG terminals	
Albanien	0.00	0.00	0.00	0.00	1.38	1.38	0.80	1.68	6.96	.
Bosnia and Herzegovina	9.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	.
Kosovo	13.67	2.55	16.23	0.00	0.00	0.00	0.00	0.00	0.00	.
Macedonia	0.00	11.02	11.02	0.20	0.50	0.70	0.57	0.00	0.00	.
Montenegro	23.65	0.00	23.65	0.23	0.41	0.64	0.00	3.47	0.00	.
Serbia	0.29	0.00	0.29	0.00	4.25	4.25	0.07	0.00	0.00	.
TOTAL WB6	3.90	1.45	5.35	0.03	2.15	2.18	0.21	0.39	0.94	10.35
Croatia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	2.18	.
TOTAL WB6+HR	2.47	0.92	3.39	0.02	1.36	1.38	0.13	0.53	1.40	6.55

Source: wb6, SEETO, Energy Community, European Commission, EuropeAid / COWI & IPF Consortium, wiiw.

These figures, however, are based on the assumption that all projects start and finish in the same year which is rather unrealistic. Assuming, however, that the construction of these projects stretches out over the next 10 years, then the corresponding figures would only be reached after about 15 years. Converted to GNP growth, this would create an impetus to growth over the next 15 years, which would be at about 0.5 percentage points (see Table 11). These values vary greatly across the different countries depending on the size of the potential investment volume of new construction as a percentage of GNP. For the four countries with the highest shares – Bosnia and Herzegovina, Kosovo, Macedonia and Montenegro – the resulting implicit contributions to growth range from 0.85 to 2 percentage points.

Tables 9 and 10 show the potential multiplier effects (in million euros and in % of GNP) for other infrastructure projects in the region. The projects for the renewal and modernisation of road and rail (EUR 1.6 billion), for example, result in an estimated multiplier effect of EUR 2,438 million or 3.3% of the GNP of the six Western Balkan countries. Over a period of 15 years, an additional growth impulse of 0.22% would result accordingly (see Table 11).

In 'Scenario 2' (the investment volume estimated by the EC for transport infrastructure), a total investment of EUR 7,700 million would have the potential multiplier effects of EUR 11,550 million or 15.5% of GNP. Translating this into long-term growth contributions, the effect is about a percentage point, a non-negligible value.

One arrives at a somewhat lower result of the impact of infrastructure investments when applying an international input-output model and calculating the resulting production and value added multipliers.⁸ Since there is (so far) no corresponding data for the group of Western Balkan countries, we set a benchmark based on the figures of other countries. For the comparison group of countries (Bulgaria, Hungary, Romania and Slovenia), production multipliers for investment demand in the construction sector from 2.15 to 2.76 were calculated, which means an increase in demand in the construction sector of EUR 1 million would result in a gross production (worldwide) increase of EUR 2.15 to 2.76 million because this initial demand would also generate direct and indirect demand in other sectors of the economy and in other countries through production networks. However, since a proportion of the required goods would be imported, the increase in domestic production would be between EUR 1.5 and 2 million.

These figures can be converted into value added units and thus be used as direct references to GNP. Again assuming that the values of the comparison countries also apply to the Western Balkans, the investment of EUR 4 billion would result in a value of about EUR 2.9 billion, which does not quite correspond to 4% of the current GNPs of Western Balkan countries. This value is about half of the result of the more optimistic calculations using the IMF multiplier for developed economies (as shown in Tables 9, 10 and 11).

⁸ Formally type I production and value added multipliers and below employment multipliers were used. This means that no induced effects (e.g. higher demand due to increased household income) were taken into account. Thus, the values given here can be interpreted as more conservative estimates.

Table 9 / Multiplier effects of infrastructure measures after four years, in millions of euros

Scenarios:	new building			rehabilitation			energy			LNG terminals	scenario 2
	road	rail	road and rail	road	rail	road and rail	energy	IAP pipeline			
Bosnia and Herzegovina	1868	0	1868	0	0	0	0	0	0	.	
Kosovo	1125	210	1335	0	0	0	0	0	0	.	
Macedonia	0	1410	1410	26	65	90	74	0	0	.	
Montenegro	1215	0	1215	12	21	33	0	179	0	.	
Serbia	146	0	146	0	2106	2106	36	0	0	.	
TOTAL WB6	4353	1620	5973	38	2400	2438	230	432	1050	11550	
Croatia	0	0	0	0	0	0	0	495	1410	.	
TOTAL WB6+HR	4353	1620	5973	38	2400	2438	230	927	2460	11550	

Note: Calculations under the optimistic assumption of the multipliers for developed economies

Source: wb6, SEETO, Energy Community, European Commission, EuropeAid / COWI & IPF Consortium, IMF (2014), wiiw, own calculations.

Table 10 / Multiplier effects of infrastructure measures after four years, in % of GNP

Scenarios:	new building			rehabilitation			energy			LNG terminals	scenario 2
	road	rail	road and rail	road	rail	road and rail	energy	IAP pipeline			
Bosnia and Herzegovina	13.51	0.00	13.51	0.00	0.00	0.00	0.00	0.00	0.00	.	
Kosovo	20.51	3.83	24.34	0.00	0.00	0.00	0.00	0.00	0.00	.	
Macedonia	0.00	16.52	16.52	0.30	0.76	1.05	0.86	0.00	0.00	.	
Montenegro	35.48	0.00	35.48	0.35	0.61	0.96	0.00	5.21	0.00	.	
Serbia	0.44	0.00	0.44	0.00	6.37	6.37	0.11	0.00	0.00	.	
TOTAL WB6	5.85	2.18	8.03	0.05	3.23	3.28	0.31	0.58	1.41	15.53	
Croatia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	3.27	.	
TOTAL WB6+HR	3.70	1.38	5.08	0.03	2.04	2.07	0.20	0.79	2.09	9.83	

Note: Calculations under the optimistic assumption of the multipliers for developed economies.

Source: wb6, SEETO, Energy Community, European Commission, EuropeAid / COWI & IPF Consortium, IMF (2014), wiiw, own calculations.

Table 11 / Growth contributions over 15 years in %

Scenarios:	new building			rehabilitation			energy		LNG terminals	scenario 2
	road	rail	road and rail	road	rail	road and rail	energy	IAP pipeline		
Bosnia and Herzegovina	0.85	0.00	0.85	0.00	0.00	0.00	0.00	0.00	0.00	.
Kosovo	1.25	0.25	1.46	0.00	0.00	0.00	0.00	0.00	0.00	.
Macedonia	0.00	1.02	1.02	0.02	0.05	0.07	0.06	0.00	0.00	.
Montenegro	2.04	0.00	2.04	0.02	0.04	0.06	0.00	0.34	0.00	.
Serbia	0.03	0.00	0.03	0.00	0.41	0.41	0.01	0.00	0.00	.
TOTAL WB6	0.38	0.14	0.52	0.00	0.21	0.22	0.02	0.04	0.09	0.97
Croatia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.21	.
TOTAL WB6+HR	0.24	0.09	0.33	0.00	0.13	0.14	0.01	0.05	0.14	0.63

Note: Calculations under the optimistic assumption of the multipliers for developed economies.

Source: wb6, SEETO, Energy Community, European Commission, EuropeAid / COWI & IPF Consortium, IMF (2014), wiiw, own calculations.

EMPLOYMENT EFFECTS OF UP TO 200,000 PEOPLE

Similar calculations can also be applied for employment effects. The results show that, on average for the comparison countries considered, a EUR 1 million increase in demand for infrastructure investment increases employment by about 30 people. If the volume of EUR 4,000 million were invested, then based on the total employment effect on the Western Balkan region, employment would rise by about 100,000 people, which corresponds to approximately 2% of total employment (Table 12). The effect increases accordingly when based on the higher investment of EUR 7,700 million, whereby the employment would rise to about 200,000 people (about 4% of the workforce). Referring again to a time span over the next 15 years, this corresponds to employment growth of more than 0.1 percentage points in the scenario of the development of road and rail, 0.06 percentage points in the renovation of road and rail and about 0.04 percentage points from the various energy sector investments. In the case of the investment volume of EUR 7,700 million, an employment growth contribution of almost 0.3 percentage points would be expected.

Table 12 / Employment effects in the region

Scenarios:	new building			rehabilitation			energy		LNG terminals	scenario 2
	road	rail	road and rail	road	rail	road and rail	energy	IAP pipeline		
	Number of employed									
TOTAL WB6	78934	29376	108310	680	43520	44200	4170	7834	19040	209440
TOTAL WB6+HR	78934	29376	108310	680	43520	44200	4170	16810	44608	209440
	in % of employment									
TOTAL WB6	1.57	0.58	2.15	0.01	0.86	0.88	0.08	0.16	0.38	4.16
TOTAL WB6+HR	1.23	0.46	1.68	0.01	0.68	0.69	0.06	0.26	0.69	3.26
	Employment growth contribution over 15 years									
TOTAL WB6	0.104	0.039	0.142	0.001	0.057	0.058	0.006	0.010	0.025	0.272
TOTAL WB6+HR	0.081	0.030	0.111	0.001	0.045	0.046	0.004	0.017	0.046	0.214

Note: Calculations with the help of an international Input-Output Model.

Source: wb6, SEETO, Energy Community, European Commission, EuropeAid / COWI & IPF Consortium, IMF (2014), wiiw, own calculations.

Conclusions

The current initiative of the 'Core Network and Priority Projects' can be regarded as very positive in the context of the 'Berlin Process':

- › The prioritisation of infrastructure projects allows a concentration of efforts on a few projects and therefore increases the likelihood of their implementation. This seems to be particularly helpful in this context since large and complex projects, such as those dealing with transport and energy infrastructures generally take a long time and are difficult to implement.
- › The focus on interconnectivity promotes network effects and allows positive spillover effects, not only for the Western Balkan countries, but also for the entire EU.
- › Regional cooperation adds greater weight to the initiative overall and makes interconnectivity possible.
- › The high visibility of the projects facilitates compliance with the relevant rules of the IFIs (e.g. transparency and competition in procurement) and thus should accelerate the implementation.

It is important, however, to use the experience from previous projects and to put a strong focus on comprehensive and detailed planning, and better coordination of technical and financial planning. Moreover, transparent and professional tendering processes need to be supported as well as the conformance to each necessary regulatory framework.

It is also essential to consider infrastructure with a wide perspective and, in addition to investing in the physical infrastructure, to invest in human resources. Secondary education is particularly important in this context as it has been neglected. Sufficient supply of skilled workers is an essential prerequisite for improving the industrial base. Therefore, new vocational training systems should be created. These must be tailored to local needs and institutions. The involvement of (international and national) companies in the development of vocational training systems is crucial.

All in all, it should be possible through this programme to secure growth and employment in the region over the short and medium term and to contribute to a substantial improvement of competitiveness of the Western Balkans in the long term. It has been shown in the analysis that a comprehensive transport infrastructure investment package of EUR 7.7 billion over a period of 15 years could lead to an additional growth spurt of up to one percentage point per annum for the six Western Balkan countries. Some 200,000 new jobs could be created in the region.

In the longer term a coordinated investment bundle, as suggested by the 'Big Push Theory' of Rosenstein-Rodan (1943), would have the potential to make the industrialisation of broader sectors more likely and thus break the vicious cycle of poverty and substantially improve the competitiveness of the Western Balkan countries. Empirically, the positive long-term effects of public infrastructure investments have often been documented, starting with the pioneering works of Barro (1989), Easterly

and Rebelo (1993) and Canning and Bennathan (2000) up to more recent, methodologically more sophisticated works by Donaldson (2010) and Martincus Volpe et al. (2013). For the EU, Schade et al. (2015) very recently estimated high costs for value added and employment in case the core lines of the trans-European transport networks (TEN-T) will not be built as planned by 2030.

Although a certain amount of catching-up in the Western Balkans has been recorded in the construction of transport infrastructure in recent years, the railway density remains low and the motorway density is even lower. Also, the deficiency in energy infrastructure is substantial. The good news is that some countries in the Western Balkans certainly still have some fiscal room to manoeuvre which could be used to (co-)finance infrastructure projects. Bosnia and Herzegovina, Macedonia and Montenegro are partially still well below the public debt level of 60% of GDP. Public debt in Kosovo is even only 10% of GDP. Only Albania and Serbia have reached the 70% mark. Compared to the eurozone average of over 94%, the public debt in these two countries is also rather low.

Since the 'Berlin Process' is a bilateral process and not initiated by the European Union, it naturally has certain limitations. The task over the next few years will be to sensitise the other EU Member States to the continuation of the enlargement process. This should also take place for geopolitical reasons. Regional powers such as Turkey and major powers such as Russia and China have been trying to gain influence in the Western Balkans for a long time. China has designed a variety of infrastructure plans for the region, such as the establishment of a high-speed railway line between Belgrade and Budapest. So far, only a few of these projects have actually been implemented. However, a section of motorway between the Serbian border and the Montenegrin harbour, Bar, is already being built.

The definite connection of the Western Balkans to the West should be an important objective for the EU, not least to ensure and expand the connectivity and cohesion between the current Member States in the centre of the Union and those on the periphery (Greece, Bulgaria and Romania). The development of physical and human infrastructure alone will not create modern societies and EU candidate countries in the Western Balkans ready for EU accession. The expansion of democratically legitimated, functioning institutions, as repeatedly called for in the progress reports of the European Commission for the Western Balkan countries, is an important precondition for a sustainable, European development of the region.

References

- Arandarenko, M. and W. Bartlett (eds) (2012), *Labour Market and Skills in the Western Balkans*, FREN and LSEE, Belgrade, November.
- Barro, R. (1989), *A Cross-Country Study of Growth, Saving, and Government*, NBER Working Paper Series, No. 2855.
- Bartlett, W. and C. Gordon (2014), *Vocational education's weakness in the Balkans is hampering labour markets and perpetuating social exclusion*, <http://blogs.lse.ac.uk/lsee/2014/06/05/vet-balkans/>
- Bliem, W., K. Schmid and A. Petanovitsch (2014), *Erfolgsfaktoren der dualen Ausbildung – Transfermöglichkeiten*, ibw-Forschungsbericht No. 177, Vienna, February.
- Canning, D. and E. Bennathan (2000), *The social rate of return on infrastructure investments*, The World Bank Policy Research Working Paper Series, No. 2390.
- Donaldson, D. (2010), *Railroads of the Raj: Estimating the impact of transportation infrastructure*, NBER Working Paper Series, No. 16487.
- Easterly, W. and S. Rebelo (1993), *Fiscal Policy and Economic Growth: An Empirical Investigation*, NBER Working Paper, No. 4499.
- Euler, D. (2013), *Das duale System in Deutschland – Vorbild für einen Transfer ins Ausland?*, Study commissioned by Bertelsmann Stiftung.
- IMF (2014), *World Economic Outlook*, Chapter 3: *Is it time for an infrastructure push? The macroeconomic effects of public investment*, October.
- Rosenstein-Rodan, P.N. (1943), *Problems of Industrialization of Eastern and South-Eastern Europe*, *Economic Journal*, Vol. 53, No. 210/211, pp. 202-211.
- Schade, W., M. Krail, J. Hartwig, C. Walther, D. Sutter, M. Killer, M. Maibach, J. Gomez-Sanchez and K. Hitscherich (2015), *Cost of non-completion of the TEN-T*, Fraunhofer Institut für System und Innovationsforschung (ISI) – Infras – PTV, supported by M-Five, Final Report, 15 June.
- SEETO (2015), *10 Years of Cooperation: A Decade of Regional Cooperation in Transport Development in the South East Europe*, SEETO Comprehensive Network Development Plan, Five Year Multi-Annual Plan 2015.
- Volpe Martincus C., J. Carballo and A. Cusolito (2013), *Routes, exports and employment in developing countries: Following the trace of the Inca Roads*, Inter-American Development Bank, mimeo.
- WIFI (2014), *Erfolgsfaktoren der Dualen Berufsbildung – Transfermöglichkeiten*, Study commissioned by the Economic Development Institute of the Austrian Federal Economic Chamber (WIFI) in the framework of the project SmartNet (EU Programme ETZ AT-SK).
- World Bank (2013), *Western Balkans Regional R&D Strategy for Innovation; Overview of the Research and Innovation Sector in the Western Balkans*, World Bank Technical Assistance Project (P123211), October.
- World Economic Forum WEF (2015), *'The Human Capital Report 2015'*.

Annex

JOINT STATEMENT WESTERN BALKAN 6 PRIME MINISTERS CORE NETWORK AND PRIORITY PROJECTS

As a follow-up to the Conference on the Western Balkans held in Berlin on 28 August 2014 and the WB6 Ministerial meetings in Belgrade on 23 October and in Pristina on 25 March, we, the Prime Ministers of the Western Balkans, gathered in Brussels on 21 April 2015 in the presence of the European Commissioner for European Neighbourhood Policy & Enlargement Negotiations, the European Commissioner for Transport and the Secretary General of the Regional Cooperation Council (RCC), have adopted the following Joint Statement in order to reaffirm our commitment to connectivity, good neighbourly relations, regional cooperation and European integration:

1. Improving regional cooperation and economic stability is one of our common tools for matching European standards and fulfilling the EU accession criteria, and the process should bring clear benefits to our citizens still before accession.
2. We express our strong commitment to the 'Berlin Process', and remain focused on ensuring that the Summit on 27 August 2015 in Vienna will achieve concrete results based on specific investment projects.
3. We recognise that improving connectivity within our region as well as with the EU is a key factor for growth and jobs in the Western Balkans.
4. We accept that this common ambition will require our personal commitment and leadership.
5. We note that in the European Union, the core network links all EU capitals, main economic centres and major EU ports. We acknowledge that extending it to the Western Balkans allows speeding up policy and regulatory reforms and concentrate efforts and investments on key corridors and interconnectors.
6. We have agreed the core transport network for the Western Balkans as outlined in the attached table. In addition Corridor VIII Rail will be kept under review including through possible financing of preparatory studies, detailed alignments, designs and exploratory works with a view to its inclusion in the core network during the next 'TEN T' review.
7. We accept that our respective National Investment Committees must establish without delay single project pipelines of priority investments, as they are preconditions for receiving IPA II support for investment co-financing.

8. The project pipelines should reflect the fact that Projects of Energy Community Interest (PECI) are an important part of our connectivity agenda.
9. We undertake to identify and address without delay all relevant measures such as regulatory issues, streamlining of border crossing procedures, which could bring about immediate connectivity benefits for the Western Balkan 6 participants and at a reasonable cost.

Indicative extension of TEN-T to Western Balkans Core Network Definition Roads

Corridor Vc	Bosanski Samac (Bosnia and Herzegovina) – Doboj (Bosnia and Herzegovina) – Sarajevo (Bosnia and Herzegovina) – Mostar (Bosnia and Herzegovina) – Bijaca (Croatian Border)
Corridor VIII	Tirana/Durres (Albania) – Elabasan (Albania)- Struga (The former Yugoslav Republic of Macedonia) – Tetovo (The former Yugoslav Republic of Macedonia) - Skopje (The former Yugoslav Republic of Macedonia) -Deve Bair (Bulgarian Border)
Corridor X	Bitovci (Croatian border) – Belgrade (Serbia) – Nis (Serbia) –Skopje (The former Yugoslav Republic of Macedonia) – Bogrodica (Greek border)
Corridor Xb	Subotica (Hungarian border) – Novi Sad (Serbia) – Belgrade (Serbia)
Corridor Xc	Nis (Serbia) –Gradina (Bulgarian border)
Route 1	Debeli Brijeg (Border Crossing) - Bar
Route 2	Podgorica (Montenegro) – Durres (Albania) – Fier (Albania) – Tepelena (Albania) – Qafë Botë (Greek border)
Route 2a	Gradiska (Croatian border) - Banja Luka (Bosnia and Herzegovina) – Lasva-Travnik (Bosnia and Herzegovina)
Route 4	Vršac (Romanian border) – Belgrade (Serbia) – Podgorica (Montenegro) – Bar (Montenegro)
Route 6	Pristina (Kosovo*) –Skopje (The former Yugoslav Republic of Macedonia)
Route 7	Lezhe (Albania) – Pristina (Kosovo) – Doljevac/Nis (Serbia)

* This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo Declaration of Independence

Indicative extension of TEN-T to Western Balkans Core Network Definition Railways

Corridor Vc	Bosanski Samac (Bosnia and Herzegovina) – Sarajevo – Mostar– Capljina (Bosnia and Herzegovina)
Corridor VIII	Skopje (The former Yugoslav Republic of Macedonia) – Deva Bair (Border with Bulgaria)
Corridor X	Sid (Serbia) – Belgrade – Nis –Skopje (The former Yugoslav Republic of Macedonia) –Gevgelija (Greek border)
Corridor Xb	Kelebija (Hungarian border) – Novi Sad (Serbia) – Stara Pazova/Belgrade (Serbia)
Corridor Xc	Nis (Serbia) – Dimitrovgrad (Bulgarian border)
Route 2	Podgorica (Montenegro) – Durres/Tirana (Albania)
Route 4	Vrsac (Romanian border) – Belgrade (Serbia) – Podgorica (Montenegro) – Bar (Montenegro)
Route 10	Krusevac (Serbia) - Kraljevo (Serbia) – Pristina (Kosovo) – Skopje (The former Yugoslav Republic of Macedonia)

Indicative Extension of TEN-T to Western Balkans Core Network Definition Inland Waterways

Corridor VII Danube	Backa Palanka - Ram/Nera River- Timok River/Pristol
Sava River	Croatian border (Sisak) – Belgrade
Tisa River	Hungarian Border – Danube River

Indicative Extension of TEN-T to Western Balkans Core Network Definition Airports

Albania	Tirana (TIA/LATI)
Bosnia and Herzegovina	Sarajevo (SJJ/LQSA)
Kosovo	Pristina (PRN/LYPR)
Montenegro	Podgorica (TGD/LYPG)
The former Yugoslav Republic of Macedonia	Skopje (SKP/LWSK)
Serbia	Belgrade (BEG/LYBE)

Indicative Extension of TEN-T to Western Balkans Core Network Definition Sea Ports

Albania	Durres
Montenegro	Bar

Indicative Extension of TEN-T to Western Balkans Core Network Definition Inland waterway ports

Bosna and Herzegovina	Bosanski Samac
Bosna and Herzegovina	Brcko
Serbia	Novi Sad
Serbia	Beograd

**JOINT STATEMENT: WESTERN BALKAN 6 ENERGY MINISTERIAL
'CONNECTING SYSTEMS, CONNECTING MARKETS'
Vienna, 2 July 2015**

As a follow up to the Conference on the Western Balkans held in Berlin on 28 August 2014, we, the Ministers of Energy of the Western Balkans gathered in Vienna on 2 July 2015 in the presence of the European Commissioner for European Neighbourhood Policy & Enlargement Negotiations and the Director of the Energy Community Secretariat (EnC) and following consultations with the European Commissioner for Energy and Climate, have adopted the following Joint Statement in order to reaffirm our commitment to connectivity in energy, good neighbourly relations, regional cooperation and European integration:

1. We agree with the **enclosed short list of investment projects** prepared by the Energy Community Secretariat on the basis of the list of 35 Project of Energy Community Interest (PECI). We note that the short list will be proposed for inclusion in the IPA 2015 multi-country programme, with funding from the IPA national envelope or other available sources and implemented through the Western Balkan Investment Framework. We will work to overcome the technical, administrative and regulatory obstacles (including compensation of asymmetry of costs and benefits) in order that these projects can be funded and implemented as soon as possible.
2. **Additional PECI projects** will be proposed for funding in subsequent years, and the list of PECI projects will be renewed in 2016. This process should be part of the implementation of the TEN-E Regulation to be adopted for the Energy Community as soon as possible. The parties will work to bring these projects to maturity. Work on gas projects will be carried out through the implementation of the Central and South-Eastern Europe Gas Connectivity initiative.
3. We accept that our respective **National Investment Committees** must establish without delay single project pipelines of priority investments. The sector pipelines should reflect the fact that PECI are an important part of our connectivity agenda as they are preconditions for receiving IPA II support for investment co-financing.
4. We agree to set up a **regional power market initiative**, which will consist of establishing a regional electricity balancing market, starting with national and cross-border balancing market, establishing national power exchanges (or using the service of existing one) and to maximise the existing Coordinated Auction Office in South-East Europe (to which we are all committed to join). We ask that the Energy Community Secretariat develops this initiative and helps with its implementation, with a view to have it operational by the time of the summit in Paris in 2016.
5. We agree to complete the work on a **priority list of 'accompanying' measures** in energy, covering specific national issues such as market opening and phasing-out of price regulation, unbundling, regulator independence, competition, state aid and permitting regimes. The list is consistent with the Third Energy Package and has been prepared by the Energy Community Secretariat in cooperation with the Energy Ministers. We will immediately start with and prioritise the implementation of these measures. The Energy Community Secretariat is invited to monitor the implementation and report before the Summit in Paris.

We commit to submitting these conclusions to our Prime Ministers for inclusion in their WB6 Summit in Vienna on 27 August.

ANNEX 1: Priority interconnection projects for financing and implementation under IPA 2015

- › **Albania – the former Yugoslav Republic of Macedonia 400 kV Electricity interconnection** (Elbasan – Bitola)
- › **Serbia – Montenegro – Bosnia and Herzegovina 400 kV Electricity interconnection** (Bajina Basta – Pljevlja – Visegrad)
- › **Serbia – Romania 400 kV Electricity interconnection** (Pancevo – Resita)
- › **Transbalkan corridor Kragujevac – Kraljevo** (Serbia)

Serbia-Bulgaria gas interconnection (Serbian section)⁹

⁹ Most likely to be financed under IPA 2016

SHORT LIST OF THE MOST RECENT WIIW PUBLICATIONS

(AS OF SEPTEMBER 2015)

For current updates and summaries see also wiiw's website at www.wiiw.ac.at

INFRASTRUCTURE INVESTMENT IN THE WESTERN BALKANS

by Mario Holzner, Robert Stehrer and Hermine Vidovic

wiiw Research Reports, No. 407, September 2015

43 pages including 12 Tables and 28 Figures

hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

INFRASTRUKTURINVESTITIONEN AM WESTBALKAN

by Mario Holzner, Robert Stehrer und Hermine Vidovic

wiiw Forschungsbericht 2 (wiiw Research Reports in German language), September 2015

51 pages including 18 Tables and 31 Figures

hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

RUSSIAN FEDERATION 2015

FROM STAGNATION TO RECESSION AND BACK

by Peter Havlik

wiiw Research Reports, No. 406, September 2015

31 pages including 3 Tables, 13 Figures, and 1 Boxes

hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

WIIW MONTHLY REPORT 2015/9

ed. by Vasily Astrov and Sándor Richter

- › Graph of the month: New asylum applications in the EU countries
- › Opinion corner: Migration crisis in the EU: what can and should be done?
- › Serbia's gas sector and the pipeline question
- › The return of the caravanserais: economic relations between Turkey and the Western Balkans
- › Eurasian integration: implications for Armenia and Kyrgyzstan
- › Recommended reading
- › Statistical Annex: Monthly and quarterly statistics for Central, East and Southeast Europe

wiiw Monthly Report, No. 9, September 2015

47 pages including 3 Tables and 33 Figures

exclusively for wiiw Members

ENERGY EFFICIENCY AND EU INDUSTRIAL COMPETITIVENESS: ENERGY COSTS AND THEIR IMPACT ON MANUFACTURING ACTIVITY

by Vasily Astrov, Doris Hanzl-Weiss, Sandra M. Leitner, Olga Pindyuk, Johannes Pöschl and Robert Stehrer

wiiw Research Reports, No. 405, August 2015

81 pages including 33 Tables, 19 Figures, and 6 Boxes

hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

THE RELATION BETWEEN INDUSTRY AND SERVICES IN TERMS OF PRODUCTIVITY AND VALUE CREATION

by Robert Stehrer, Paul Baker, Neil Foster-McGregor, Johannes Koenen, Sandra Leitner, Julia Schrickler, Thomas Strobel, Hans-Günther Vieweg, Jurgen Vermeulen and Anastasia Yagafarova

wiiw Research Reports, No. 404, July 2015

125 pages including 10 Tables and 42 Figures

hardcopy: EUR 24.00 (PDF: free download from wiiw's website)

MIGRANTS AND NATIVES IN EU LABOUR MARKETS: MOBILITY AND JOB-SKILL MISMATCH PATTERNS

by Michael Landesmann, Sandra Leitner and Stefan Jestl

wiiw Research Reports, No. 403, July 2015

45 pages including 3 Tables and 34 Figures

hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

WIIW MONTHLY REPORT 7-8/15

ed. by Vasily Astrov and Sándor Richter

- › Table: Overview 2014 and outlook 2015-2017
- › Figure: GDP growth in 2014-2015 and contribution of individual demand components in percentage points
- › Bulgaria: Export-led recovery
- › Croatia: Mild turnaround after protracted recession
- › The Czech Republic: Fiscal and monetary policies conducive to further recovery
- › Estonia: Household and Swedish demand keep the economy afloat
- › Hungary: Consumption and net exports step in as growth drivers
- › Latvia: Riding out the Russian demand shortfall
- › Lithuania: Domestic demand offsets slump in the Eastern neighbourhood
- › Poland: Strong expansion of productive investment
- › Romania: Also investments fuel growth
- › Slovakia: Better prospects ahead
- › Slovenia: Almost back to normal

- › Albania: Recovery led by FDI
- › Macedonia: Facing challenges
- › Montenegro: Investments are the answer
- › Serbia: Mixed signals
- › Turkey: Balance-of-payments constrained growth
- › Bosnia and Herzegovina: Eppur si muove
- › Kosovo: Growth on skis
- › Belarus: How deep will be the recession?
- › Kazakhstan: Persevering in times of low oil prices
- › Russian Federation: Milder recession followed by unimpressive recovery
- › Ukraine: No light at the end of the tunnel so far

wiiw, July-August 2015

25 pages including 1 Table and 2 Figures
(exclusively for Members of wiiw)

AUFWIND IM WESTEN MITTEL-, OST- UND SÜDOSTEUROPAS: WICHTIGE WACHSTUMSIMPULSE FÜR ÖSTERREICH

by Mario Holzner

wiiw Forschungsbericht 1 (wiiw Research Reports in German language), July 2015
75 pages including 95 Tables and 18 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

DETERMINANTS OF SPECIFIC TRADE CONCERNS RAISED ON TECHNICAL BARRIERS TO TRADE

by Mahdi Ghodsi

wiiw Working Papers, No. 115, June 2015
37 pages including 10 Tables and 2 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

FREE MOVEMENT OF WORKERS, TRANSITIONAL ARRANGEMENTS AND POTENTIAL MOBILITY FROM CROATIA

by Hermine Vidovic

wiiw Research Reports, No. 402, June 2015
49 pages including 15 Tables and 14 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

IMPRESSUM

Herausgeber, Verleger, Eigentümer und Hersteller:

Verein „Wiener Institut für Internationale Wirtschaftsvergleiche“ (wiiw),
Wien 6, Rahlgasse 3

ZVR-Zahl: 329995655

Postanschrift: A 1060 Wien, Rahlgasse 3, Tel: [+431] 533 66 10, Telefax: [+431] 533 66 10 50
Internet Homepage: www.wiiw.ac.at

Nachdruck nur auszugsweise und mit genauer Quellenangabe gestattet.

P.b.b. Verlagspostamt 1060 Wien

Offenlegung nach § 25 Mediengesetz: Medieninhaber (Verleger): Verein "Wiener Institut für Internationale Wirtschaftsvergleiche", A 1060 Wien, Rahlgasse 3. Vereinszweck: Analyse der wirtschaftlichen Entwicklung der zentral- und osteuropäischen Länder sowie anderer Transformationswirtschaften sowohl mittels empirischer als auch theoretischer Studien und ihre Veröffentlichung; Erbringung von Beratungsleistungen für Regierungs- und Verwaltungsstellen, Firmen und Institutionen.



wiiw.ac.at