Cities in transition

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Abstract

Cities in transition face a unique set of challenges that came forth due to interaction of the legacy of socialist urban policies and the transition to the market economy. Socialist urban policies restrained growth of the largest cities and led to distortions in the spatial equilibrium and to more uniform distribution of population within a country. The transition to the market economy tends to reduce distortions but the rate of convergence to the new spatial equilibrium is low. Market rigidities, inadequate urban infrastructure, and inconsistent government policies prevent people from moving to other locations.

1   Introduction

This study focuses on the problems of urban development in countries of the Europe and Central Asia (ECA) region[1]. The region has some unique features of urbanization on macro and micro levels due to the lingering legacy of the socialist central planning system and the impact of transition to a market economy. At the same time, a wide range of policies that were chosen during the transition period allows evaluation of the impact of the institutional change on urbanization. The early stages of transition drew a substantial attention of researchers in urban economics[2]. However, the literature has relatively little to say about more recent developments that have occurred during the last decade. This paper and other papers of the inter-regional Global Development Network (GDN) project "Cities in Transition" start filling the gaps in the literature by studying various dimensions of more recent urban developments in the region.

This paper has no intention to cover all topics related to urban economics in transition countries because it would be an impossible task. I rather limit the scope of the paper to the topics and challenges that are unique to the region. To proceed systematically, I first discuss the issues related to the system of

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[1] I excluded Turkey from the definition of the ECA region because urbanization processes are very different in Turkey compared with former socialists countries

[2] See for example Alexeev (1988); Clayton and Richardson (1989); Bertaud and Renaud (1997); Buckley and Gurenko (1998); Gang and Stuart (1999); ?.

cities and urbanization at the macro level and then move to the literature on micro level that studies an economy of a single city. I emphasize the features that make cities in transition different from cities in developed and developing countries.

I document several preliminary findings. First, the ECA region countries have the urbanization rates that are in line with the urbanization rates of other countries after controlling for the level of economic development, geographical, economic, and institutional characteristics. Second, in 2000, the ECA countries had under-populated prime cities relative to other countries. This conclusion is supported by both the cross-section and time-series analysis. Third, the ongoing process of correction makes the ECA cities look similar to cities in other countries. The largest cities in the region tend to grow faster than medium- and small-size cities. There are some evidence that the more even distribution of population in the ECA countries was due to government policies directed at favoring growth of medium-size cities and limiting growth and industrial development of larger cities during the second half of the XX-th century. Finally, the outstripping growth of the prime cities puts an excessive strain on public infrastructure which suffers from the distortions cerated during the socialism.

2   System of cities in the ECA region

"In the European Union, the top 38 cities cover 0.6% of its territory and, in 2000, accommodate about 25% of its population and about 30% of its GDP. In Japan, the economy is very much dominated by its core regions, formed by the five prefectures containing the three main metropolitan areas: Tokyo and Kanagawa prefectures, Aichi prefecture (containing Nagoya MA), and Osaka and Hyogo prefectures. In 1998, these regions account for only 5.2% of the area of Japan, but for 33% of its population and 42% of its GDP. In the United States, census data show that, in 1997, 53% of the American population lived in the top 40 MSAs, which accommodate 48% of the manufacturing employment. In 1992 paved and built land accounts for a mere 1.9% of the area of the United States." (Henderson et al., 2004)

While it is difficult to compute similar statistics for transitioning economies due to lack of data on GDP and land area of cities, cities in ECA region, like their counterparts in developed and developing countries, are the major driving force in economic growth and development. According to PricewaterhouseCoopers (2009) UK Economic Outlook that estimated GDP generated by major world agglomerations, Moscow is the wealthiest city in the region with 321 bln PPP \$ of GDP in 2008 which accounted for 20% of Russian GDP and its share in total population of Russia is around 7%. According to the same reports, in 2008, St. Peterburg generated 91 bln PPP \$, Warsaw - 68, Budapest - 53, and Prague - 49.

Urbanization rates of ECA region countries ranges from 36% of total population in Kyrgyzstan to 73% in Belarus, Czech Republic and Russia[3]. Conditional

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[3]The data source for the urbanization rates is CIA "The World Factbook 2009"

on the level of economic development, population size, openness to trade, and geographic characteristics, ECA region countries do not systematically differ in the rates of urbanization as the results of the regression of the urbanization rates on these variables show. Table 1 in columns (1)-(3) presents the results of a regression

$$urbanization_i = \alpha_0 + \alpha_1 X_i + \alpha_2 ECA_i + \epsilon_i \tag{1}$$

where *urbanization* is the share of the urban population, X is the vector of controls that includes log of GDP per capita, log of population, openness to trade, a dummy variable *landlocked* that takes the value of one if a country has no access to the sea routs, and log of land area. Voice and accountability indicator capture the level of democracy in a country. ECA dummy that takes the value of one if a country i belongs to the ECA region and zero otherwise has a negative but not significant coefficient for any subsample of countries. The coefficient of the log of GDP per capita is positive and significant in all regressions that confirms findings from the literature of very close positive association between the level of economic development and urbanization[4]. Countries that have ten percent higher GDP per capita also tend to have thirteen percent higher rate of urbanization. Landlocked countries are almost ten percent less urbanized on average. Higher openness to trade slightly reduces the level of urbanization, but the coefficient is significant only for the subsample of middle income countries.

The plot of the regression residuals for the whole sample against the log of GDP per capita shows that the urbanization rates in most countries of the region are close to what is predicted by the model and that the only outliers are Slovenia with the actual urbanization rate of 48% more than approximately 20% lower than the predicted rate and Macedonia with the actual urbanization rate of 67% that is approximately 20% higher than the predicted rate.

Columns (4)-(6) of Table 1 present a regression of the share of population in the largest city, $prime_i$, on the same set of variables as in the model 2 constructed from the Henderson dataset of the world cities in 2000[5]. In addition, the regression includes a dummy that indicates whether the largest city is also a capital of the country or not.

$$prime_i = \alpha_0 + \alpha_1 X_i + \alpha_2 ECA_i + \alpha_3 capital_i + \epsilon_i \tag{2}$$

Unlike in the previous regression, the ECA countries have the largest city that about 8 percent smaller than what is expected from the model[6]. This finding is somewhat disturbing because it indicates that the transition to the market equilibrium of the ECA countries requires further concentration of population in the largest cities and rising regional inequality. Such adjustments would put even higher pressure on urban infrastructure which hardly manage to keep up

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[4]See for example Acemoglu et al. (2002)for a discussion of the links between GDP per capita and urbanization

[5]It is available at http://www.econ.brown.edu/faculty/henderson/worldcities.html. Armenia in 2001 and Georgia in 2002 are from national census data

[6]Davis and Henderson (2003) also found that the prime cities in centrally planned economies are under-urbanized by 5 to 11 percent depending on the regression specification.

Table 1: Table 1 Urbanization rates and largest cities

	(1)	(2)	(3)	(4)	(5)	(6)
		Urbanization			Largest city	
Log GDP per capita	0.13**	0.14**	0.16**	0.047**	0.059**	0.060*
	(11.35)	(9.39)	(6.43)	(3.76)	(3.55)	(2.40)
Log of Population	-0.0067	-0.0070	-0.029	-0.047**	-0.038	-0.065*
	(-0.61)	(-0.51)	(-1.50)	(-2.93)	(-1.85)	(-2.61)
Log of country area	0.011	0.012	0.023	-0.013	-0.019	-0.0082
	(1.13)	(1.15)	(1.55)	(-1.20)	(-1.43)	(-0.63)
Landlocked	-0.096**	-0.10**	-0.078	-0.060**	-0.037	-0.043
	(-4.07)	(-3.35)	(-1.52)	(-2.70)	(-1.20)	(-0.82)
Openness to trade	0.000053	-0.000032	-0.00089*	0.00035	0.00042	-0.00094**
	(0.19)	(-0.10)	(-2.06)	(0.71)	(0.88)	(-2.68)
Voice and account.	0.0039	0.0068	0.00088	-0.030	-0.014	-0.023
	(0.32)	(0.44)	(0.05)	(-1.84)	(-0.83)	(-0.95)
ECA region	-0.017	-0.031	-0.035	-0.072**	-0.087**	-0.071*
	(-0.68)	(-1.05)	(-1.09)	(-2.63)	(-2.89)	(-2.20)
Capital				0.028	0.018	0.027
				(1.40)	(0.79)	(0.86)
Constant	-0.67**	-0.71**	-0.77**	0.38*	0.28	0.48
	(-5.69)	(-4.76)	(-3.18)	(2.24)	(1.30)	(1.74)
Adjusted R^2	0.557	0.504	0.324	0.415	0.429	0.360
Observations	179	152	89	141	115	70

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$

OLS regressions of urbanization rates and share of population in largest city on level of development, openness to trade, institutions, and geographical characterisitics. Data sources: urbanization rates are from CIA World Factbook 2009; Largest city data are for 2000 from Henderson dataset. GDP per capita, population, and openness to trade are from Penn World Tables; area, landlocked are from CEPEII Geo Data; ECA dummy is eqaul to one for Europe and Central Asia. Columns (1)-(3) present results for the urbanization rates. Columns (4)-(6) present results for the share of population in the largest city. Columns (1) and (4) results are for the whole sample, columns (2) and (5) results are for non-OECD countries, columns (3) and (4) results are for upper and lower middle income countries according to the World Bank classification.
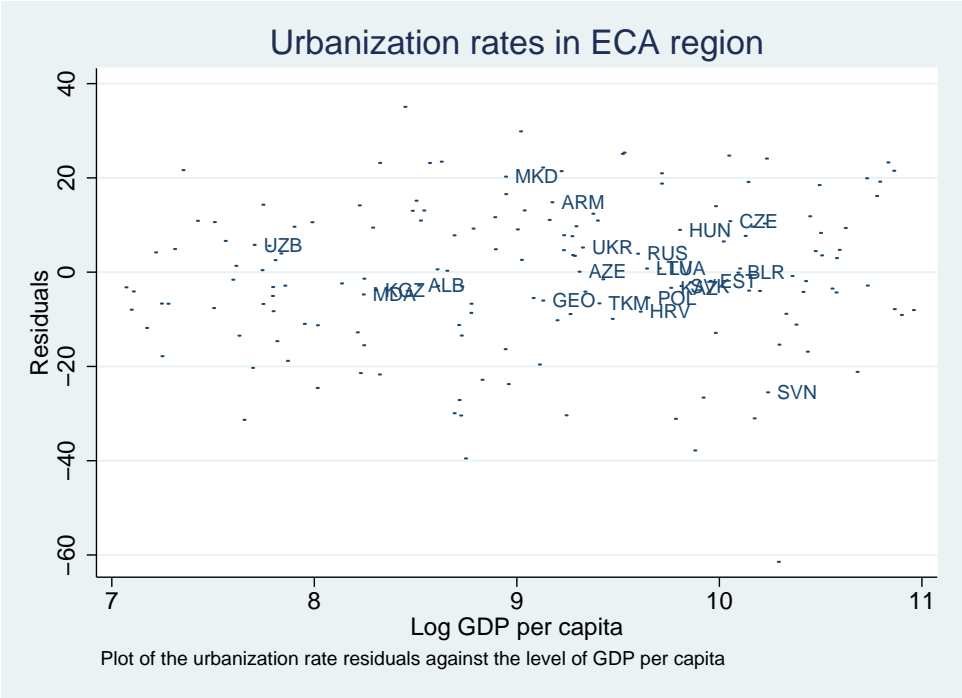
Figure 1: Urbanization rates in ECA region

with the population increase in the largest cities and require policymakers plan for investments in urban infrastructure of the prime cities in advance.

Looking at the whole distribution of city sizes within each country of the region reveals a considerable deviation of the largest cities form the Zipf's law before and after the transition has started. The Zipf's law, one of the most striking and robust facts established by urban economics, is a stable relationship of the distribution of cities within a country, which follows a power law distribution: the number of cities with population greater than S is proportional to $1/S$. (Gabaix, 1999) argues that the power distribution naturally emerges if city population follows a proportional growth. The proportional growth hypothesis, a so-called Gibrat's law, was tested for different regions and different countries and in general not rejected.

To check how well the distribution of city sizes follow the Zipf's law, I run a number of regressions $lnS_{it} = \alpha + \beta lnR + \epsilon_{it}$, where S is the city size and R is the city rank, for each country of the region and for two time periods. I took a census data for 1979 and the latest available data on cities for 2007 from the World Gazeteer database [7]. Only cities with population exceeding 20,000 are included. The findings from the literature is that in most countries the largest city is usually a positive outliers – its size is larger than predicted by the Zipf's law (Gabaix, 1999, Ades and Glaeser, 1995 found a political economy explanation to this stylized fact). However, it is generally not the case for countries in the ECA region. In particular, the upper part of the distribution for CIS countries considerably deviates from the power distribution and has negative residuals, which indicate that the largest cities are smaller than predicted by the Zipf's law. The deviation is the most pronounced for Russia and Ukraine, slightly declining over time.

The concern with under-sized prime cities in the ECA region stems from the fact that urban economies of scale in the region are not exploited to the full extent, resulting in lower productivity per worker and lower wages in the region relative to urban agglomerations in other parts of the world. The loss of competitiveness due to lower urbanization transforms into lower economic growth Henderson (2003). For example, Deichmann and Henderson (2000) computed that Poland's primacy rate which is 5 percent below the optimal level translates into 0.75 percent lower economic growth.

These preliminary observations on the deviation of the distribution of city sizes in the ECA region from the distribution implied be the parallel city growth probably indicates the impact of socialist urban policies on city growth rates. According to the Soviet economic doctrine, the priority was given to the capital accumulation in the cities and labor intensive agriculture in rural areas (Ofer, 1976)'. Therefore, the rural-to-urban migration was considered as non-desirable and was controlled by the state authorities. Control of migration to the capitals of the republics of the Soviet Union was stricter relative to control of migration to other places which led to below natural rate of growth in capitals and consequent deviation from the Zipf's law. Migration controls imposed in the

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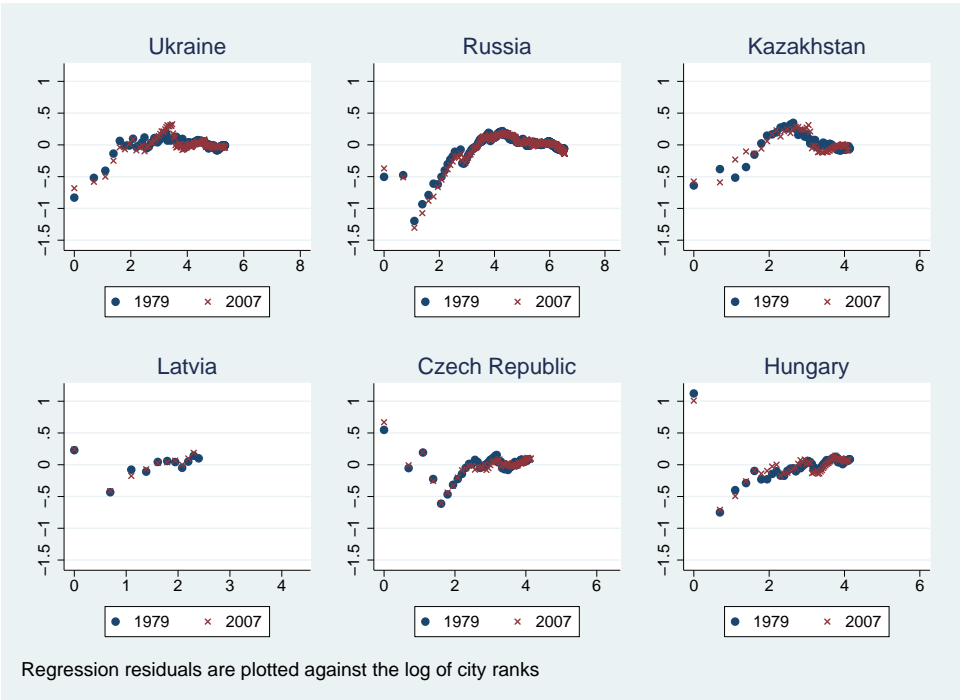
[7] Available at http://world-gazetteer.com/

Figure 2: Zipf's regression residuals for selected countries

most attractive for migrants parts of the Soviet Union created a disequilibrium in the spatial distribution of the population (Gang and Stuart, 1999; Iyer, 2003) which currently slowly corrects itself by the above the average migration flows to the largest cities. Still, the process is hampered by inadequate infrastructure that cannot support increased number of citizens, the factors that are discussed further in the paper.

In the next section, I further develop this conjecture by reviewing the literature that studies a system of cities and distribution of city sizes within a country paying specific attention to the literature that can explain the urbanization patterns in the ECA region. First, I discuss briefly the theoretical models within the new economic geography framework that are consistent with common pattern of distribution of cities. Second, I present empirical findings and discuss some specific issues related to the ECA region. Third, I review political economy models and interaction of the government policies and the distribution of cities. Finally, I discuss the literature on fiscal decentralization and its impact on the distribution of cities.

3 Distortion of the spatial equilibrium of the system of cities in the ECA region

3.1 Spatial equilibrium

Before I proceed with possible causes of distortion of the distribution of cities in the region, I briefly introduce the concept of the spatial equilibrium. Spatial location theory (SLT) is built around the idea that an individual is indifferent about living in a particular location or moving to another location. A higher income in Kyiv or Prague is compensated by higher housing prices, higher transportation costs, and congestion that make these cities as attractive as any other cities in the region. The SLT considers that markets are efficient and work properly and the general equilibrium in spatial economic activities is achieved through three indifference conditions: workers are indifferent whether to stay in one location or to move to another, firms are indifferent whether to hire more workers or not, and construction firms are indifferent whether to build more houses or not (Glaeser and Gottlieb, 2009). A high mobility of US population, high competition among firms, and quite elastic supply of housing makes this model suitable for the analysis of the US economy. However, the likely violation of the underlying assumptions of the SLT for the ECA countries cast doubts on its applicability to analyze the distribution of population, housing, and firms in the ECA region countries.

Glaeser and Gottlieb (2009) report that over 40% of Americans move during their lifetime and around 20% change counties every five years. The mobility of the population in the ECA countries is much lower. For example, "on average Russians change their place of residence 1.5 times during their lifetime compared

to 13 times in the U.S. and 7 times in Britain (p. 61)"[8]

Andrienko and Guriev (2004) found that the in 1992-1999 intra-Russian migration rates were declining. The low mobility in Russia cannot be attributed to income equalization across regions. To the contrary, Mitra and Yemtsov (2006) report: "As opposed to relatively stable sectoral and inter-industry wage differentials, regional variation in real wages, relative to the national average, almost tripled in Russia between 1995 and 2003. Segmentation of labor markets is a common feature of many transition economies, but in Russia this dispersion takes particularly extreme forms due to institutional, infrastructure and geographical realities." Yemtsov (2005), using official per capita income data series, shows that between-regional factors among Russia's eighty-plus regions accounted for about a third of the overall inequality in that country by the year 2000, with the increase in the between regions component being the key driver of the change in inequality between 1995 and 2000. Fedorov (2002) computed that the Gini coefficient of intra-regional inequality in Russia in 1999 was 0.29 compared with the intra-state Gini coefficient in US around 0.10 ((Milanovic, 2005)).

Other countries in the region follow a similar pattern. WorldBank (2009) reports that migration flows in Eastern Europe and CIS countries have slowed despite increasing differences in income levels and quality of life. Internal migration in Czech Republic, Poland, and Slovakia are 0.5 percent of working population which is low even by the EU standards: it is three times lower than in Germany and five times lower than in France, the Netherlands, and UK. The situation with low labor mobility in the ECA region is worsened due to the government policies that preserve the current status quo through unemployment benefits and direct subsidies to depressed regions, job protection regulations, and nationwide minimum wage laws. Transfer of housing ownership from state to residents at low or no cost during the early stages of transition and no tax on land or real estate property in some countries (i.e. Ukraine) makes the housing and land markets more rigid and less liquid which further lowers the labor force mobility.

Deichmann and Henderson (2000) find that in Poland the largest cities growth is slower than would be expected under freely operating post-transition adjustments. They link it primarily to low internal mobility, with rural-to-urban migration declining significantly between 1986 and 1998. Further analysis reveals that internal mobility in Poland is hampered by increasing international migration and by substantial rigidities in the housing market. The second factor plays the most important role in explaining low internal mobility coupled with consistently high international mobility of Poles. There was a dramatic drop in housing completion from 140,000 in 1992 to 60,000 in 1996. More recent analysis of internal migration in Poland by Ghatak et al. (2008) confirms that the shortage of housing remains one of the most important barriers to migration within Poland which slows down growth of large cities in Poland and lowers

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[8]Vesa Rautio and Markku Tykkyläinen, eds. Russia's Northern Regions on the Edge: Communities, Industries and Populations from Murmansk to Magadan. Helsinki, Finland: University of Helsinki, Aleksanteri Institute, Kikimora Publications. 2008.

productivity and economic growth.

Given the evidence, the assumptions of either equalization of utilities across locations or efficient functioning of markets are incompatible with the stylized facts and needs to be refined by modeling considerable fixed costs of moving and transaction costs in economic exchange. Low mobility in Russia combined with a high cross regional inequality indicates either substantial market imperfections such as labor market rigidities, high fixed costs of moving, and non-competitive markets for land and housing.

3.2 Soviet legacy: impact on migration and mobility

Socialist countries were under-urbanized relative to the market economies at the same level of development (Ofer, 1976). Offer argues that the central planners intentionally checked rural-to-urban migration and industrial developoment of large cities and engaged in input substitution policy by keeping the capital-to-labor ratio in urban areas above the level of the market economies and by keeping the capital-to-labor ratio in rural areas below the level of the market economies. They did so to economize on costs that are incurred in urbanization when a migrant moves from a rural to an urban area due to higher wages and higher consumption levels of the urban dwellers. All saved resources were further reinvested into the heavy industry production, a development strategy consistent with the idea that the capital accumulation is the major factor that leads to the accelerated economic growth. Table 2 provides some evidence on the degree of under-urbanization for a number of the socialist countries in 1960 as well as replication of the result for the year 2007. While it is not possible to compare the degree of urbanization for some countries that do not exist anymore, such as Czechoslovakia and the Soviet Union, the table reports the population weighted averages of actual urbanization, estimated urbanization, and the residual for countries that were former members of abovementioned countries. Based on comparison, the former socialist countries narrowed the urbanization gap relative to OECD countries.

Migration restrictions in the Soviet Union worked through the system of internal passports that the rural residents could not get until 1974 and through the residence authorization system (so-called "propiska"). Both an internal passport and an authorization stamp in the passport were legally required to get a job in a city that had restrictions on migration. The institution of "propiska" has created a dualistic structure of population in restricted cities where the population was split into legal and illegal residents with discriminated access to public goods, local amenities, state-provided housing, and jobs. Gang and Stuart (1999) estimated the effectiveness of the system by looking at differences of city growth rates between restricted and unrestricted cities in Russia and found that the restricted cities grew approximately at twice smaller rate relative to the unrestricted cities in all decades between 1960's and 1980's. Clayton and Richardson (1989) further find the evidence that the restrictions were more strictly enforced in larger cities. They report that in the estimation of the rank-size regression for 500 Soviet cities, ten of the eleven largest cities are major

	Urbanization rate, % in 1960, Ofer (1976)				Urbanization rate, % in 2008		
Country	Actual	Estimated[a]	Residual	Country	Actual	Estimated[a]	Residual
				Albania	47	58	-11
Czechoslovakia	57	62	-5	Czech Republic	73	73	0
				Slovak Republic	56	71	-15
				Average	**67**	**72**	**-5**
East Germany	72	61	11				
Soviet Union	48	57	-9	Armenia	64	64	0
				Azerbaijan	52	66	-14
				Belarus	73	73	0
				Estonia	69	72	-3
				Georgia	53	64	-11
				Kazakhstan	58	70	-12
				Kyrgyzstan	36	56	-20
				Lithuania	67	69	-2
				Latvia	68	70	-2
				Moldova	42	55	-13
				Russia	73	69	4
				Turkmenistan	49	67	-18
				Ukraine	68	66	2
				Uzbekistan	37	50	-13
				Average	**65**	**66**	**-1**
Hungary	40	55	-15	Hungary	68	71	-3
Poland	47	53	-6	Poland	61	69	-8
Bulgaria	38	50	-12	Bulgaria	71	65	6
Romania	35	50	-15	Romania	54	65	-11
Yugoslavia	28	48	-20	Croatia	57	69	-12
				Macedonia	67	62	5
				Slovenia	48	75	-27

Notes: a) Estimated for OECD countries and then predicted for socialist countries based on the following regression models

1960: UR=-35.71+13.93logY   Adjusted R^2=0.25

2008: UR=-24.58+9.71logY   Adjusted R^2=0.02

Source: Ofer (1976)and author's calculations

Table 2: Urbanization rates in socialist countries in 1960 and 2008 relative to OECD countries

outliers; their actual size is well below the predicted level.

The Soviet urban policy also promoted an eastward migration of population to Ural and Siberia regions. According to the WorldBank (2009) the share of GDP produced by the eastern regions of the Soviet Union had increased from 4 percent in 1925 to 28 percent in the 1980's. The incentives to relocate to cold, distant areas worked through the system of northern compensations, preferential system of distribution of housing, creation of urban infrastructure in new locations. Millions of people were subsidized to live in "cold" (Hill and Gaddy, 2003). After removal of most of the benefits, the population responded by out-migration from those areas. More than a million of people had left northern regions. The population of Magadan and Chukotka, one of the coldest places in Russia, declined by 53 and 66 percent respectively between 1991 and 2001. Still, the self-correction of distrortions created by the central planners are slow and a considerable part of population in modern Russia still lives in cities that would have never been built in a market economy.

3.3   Public policy, institutions, and urban development

Is there an optimal level of urbanization that balances benefits of agglomeration economies and costs of congestion? Do urbanization rates deviate from the optimal levels? Governments worry about these questions and create programs that either stimulate development of the major agglomerations if they consider urbanization and concentration as beneficial or stimulates convergence of the backward hinterland if they view that the economic activities should be spread out more evenly across space. European structural funds and the cohesion fund are the examples of the policy directed to more even spread of economic activities. Other countries, such as Egypt, Brazil, Korea, Mexico, and China had programs that encouraged development of medium-size cities and prevented exploding growth of prime cities (Henderson, 1997). An extreme example of the government trying to fix the natural urbanization forces is the Soviet Union policy of restricting rural-to-urban migration. Such policies would be economically justified if there are externalities that encourage uncontrolled growth of the prime cities beyond the optimal size.

There are evidence that in general the government policies in developing and transition countries have an urban bias in a sense that they are more favorable to the development of large urban agglomeration, capitals in particular. Ades and Glaeser (1995) develop a model and provide empirical evidence on the determinants of the bias. The largest city, usually a capital, tends to have a higher share of population the higher the degree of protectionism, the larger the internal trade costs, the lower is the openness to trade. Political factors play even more important role. Dictatorships have the largest city about fifty percent larger on average relative to democracies. Political unrest and overall government instability lead to further concentration of population in the central city. Ades and Glaeser further establish that causality goes from political determinants to urbanization.

The over- and under-concentration of population in large cities occurs quite

frequently and is extremely important determinant of economic development (Henderson, 2003). Henderson estimates an optimal level of urban concentration and demonstrates that it is a function of the level of economic development and country size. He further finds evidence that the deviation from the optimal level has a negative and significant impact on the future economic growth.

Davis and Henderson (2003) argue that while the government policies and institutions have small impact on the overall rate of urbanization, they are extremely important determinants of the distribution of city sizes. Davis and Henderson find that investment in regional infrastructure shifts development from prime to hinterland cities. Importantly, fiscal decentralization and democratization stimulate more even development of cities.

Development of institutions and efficient governance in transition economies proved to be a major challenge for reformers. Buckley and Mini (2000) discuss progress of transition countries in local institutions, safety net development, and private sector development. Based on the literature, the main challenge of public policy reforms in the ECA region is to outline the clear boundaries that separate responsibilities among various branches of government both vertically, between the state and local governments, towards a larger independence, transparency and accountability of local governments, as well as horizontally, between various local jurisdictions to prevent the overlapping responsibilities and resolve a potential conflict of interest between urban and regional administrations that may emerge due to urban sprawl. The local governments should be strengthened by larger share of the state budget in order to be up to the task of growing local responsibilities. Those responsibilities should include efficient management and development of local public infrastructure and creation of a favorable investment climate for private businesses.

Buckley and Mini (2000) further discuss potential explanation of labor market rigidities. The low and declining labor market mobility in the region (i.e. Deichmann and Henderson, 2000 report declining labor mobility in Poland) can be, at least partially, due to rigidities in still restricted urban markets for housing, local government services, utilities, and transportation. To a large extent, under-provision of those services is reflected in the structure of household expenditures. While in market economies the share of those services lays within 43 to 63 percent range, in transition countries it is a smaller share, 23 to 30 percent. Coricelli and Rybinski (1995) estimate that up to 20 percent of unemployment in Poland is due to housing market rigidities.

A low accountability and transparency of local governments is another important challenge to local economic development. It is still well below the levels of accountability and transparency in developed countries. The local administrations are often appointed by state governments or by local legislative branches of government which reduces their local accountability incentives. Buckley and Mini further summarize their findings by presenting the progress of transition countries in various aspects of local reforms which is summarized in Table 3. Central and Eastern European counties lead in the progress of local reforms while the former Soviet Union countries considerably lag behind.

	Institutions		Safety Net		Private Sector Development		
	Political Accountability of Local Governments	Transparency and Economic Autonomy of Local Governments	Pricing of Services	Effective Allocation of Social Mandates	Effective Real Estate Markets	Financial Sector Development	Overall Rating
Central and Eastern Europe	3.0	2.0	2.5	2.5	3.0	3.0	2.7
The Baltics	3.0	2.0	2.5	2.5	2.5	2.5	2.5
Central and South Balkans	1.5	1.0	2.0	2.0	2.5	2.0	1.8
Former Soviet Union	1.0	1.0	1.0	1.0	1.5	1.0	1.1

Notes: The scale is from 1 to 4 where higher numbers represent better score. **Source:** Buckley and Mini (2000), From Commissars to Mayors: Cities in Transition Countries

Table 3: Taxonomy of progress in transition countries

4 A socialist city in transition

4.1 Agglomeration and localization economies

Underdevelopment of prime cities in transition countries prevents them from capitalizing on the agglomeration economies. Smaller agglomerations have less productive firms, fewer innovative activities and fewer opportunities for human capital development, and less efficient labor markets. Marshall (1890) identifies three main microfoundations of agglomeration economies: labor market pooling (better match and reduced risk), knowledge spillovers (localized learning), and input sharing (internal increasing returns to scale). In addition, natural advantage, home market effect, consumption opportunities, and rent-seeking all can contribute to agglomeration (Rosenthal and Strange, 2004). Based on extensive literature review, Rosenthal and Strange (2004) conclude that doubling city size increase productivity of firms located in the city by 3-8%. Separation of localization (within an industry agglomeration) and urbanization (impact of city size across all industries) effects was carried out by Nakamura (1985) for Japan. Nakamura summarizes his work as finding that a doubling of industry scale leads to a 4.5% increase in productivity, while doubling of city population leads to a 3.4% increase in productivity. Ciccone and Hall (1996) find a positive effect of population density on productivity, with doubling increase productivity by 6% for the US, while Ciccone (2002) find that the effect is 4.5 percent for a cross-section of regions in France, Germany, Italy, Spain and the UK. Moretti (2004) finds that a one percentage point increase in college share in a city raises average wages by 0.6-1.2%, above and beyond the private return to education.

A meta-analysis of the literature on the relationship between urbanization and productivity by Melo et al. (2009) reveals that the effect is region and country specific, with China, Japan, and Sweden having lower returns than the US and France and Italy having higher returns. Au and Henderson (2006)

Microfoundation	Paper	Main finding
Input sharing	Holmes (1999)	More purchased input in clusters
Labor market pooling	Diamond and Simon (1990)	Workers compensated with higher wages
	Costa and Kahn (2000)	Well-educated married prefer large cities
Knowledge spillovers	Jaffe et al. (1993)	More citations in the same location
	Duranton and Puga (2001)	Cities are "nurseries" for new ideas
	Moretti (2004)	More college graduates raises wages

Table 4: Literature on sources of agglomeration

argue that restrictions on rural to urban migration in China explains insufficient agglomeration of economic activity. Also, the urban agglomeration impact on productivity is stronger in services sector which is consistent with the notion that services strongly benefit from proximity to large urban markets.

Research on agglomeration economies in cities of the ECA region are scares. At the same time, the estimated agglomeration effects are found to be stronger than for the OECD countries. Békés and Harasztosi (2010), looking at Hungarian manufacturing data from 1992 to 2003, find that firms that are engaged in international trade would gain 16 percent in total factor productivity as city size doubles, a number that is twice larger that the upper bound for the consensus estimate presented by Rosenthal and Strange (2004).

Bruhart and Mathys (2008) found that the impact of population density on labor productivity in Europe in 1980-2003 has been constantly growing over time, mainly due to higher impact of density on productivity in Eastern European regions. Inclusion of Eastern European regions rises the impact of doubling population density on labor productivity from 4 percent to 13 percent.

Vakhitov (XXX) who looked at Ukrainian firm level data in 2001-2005 also confirmed that agglomeration effect is higher than the consensus estimate reported by Rosenthal and Strange (2004). While the higher agglomeration effect in transition countries is expected, due to the dynamic nature of transition from the command economy to the market economy, these results should be taken with care because of noisier data, effect of restructuring that is hard to separate from the effect of urbanization, and higher inflation rates.

To separate the impact of agglomeration economies on development of cities from the impact of other sources of growth such as institutions and geography, several studies looked at historically provided sources of exogenous variation necessary to disentangle various channels development. Redding and Sturm (2008) looked at the episodes of the division of Germany after the World War II and reunification of Germany in 1990 to study the market access channel of growth for West German cities. The source of exogenous variation comes

through a greater disruption of the market access for cities located near the new border between East and West Germany. They found that those cities grew at much slower rate relative to other West German cities after the division of Germany which is the evidence in favor of the agglomeration channel of growth. Davis and Weinstein (2002) tested the multiplicity of equilibria for city location that comes from the new economic geography models by looking at the impact of the bombing of Japanese cities on the spatial distribution of population and found little support for the multiplicity of equilibria. To the contrary, they found that the location fundamentals such as favorable geographic location play a major role in location of cities.

Disintegration of the Soviet Union and transition from the central planning to market economy provide a researcher with an additional opportunity to test the main predictions of the new economic geography literature. Some empirical evidence such as the decline of economic activities along the Russian-Ukrainian border, out-migration from the Northern regions of Russia after abolishment of the northern compensations and other benefits, current superior growth of the prime cities, restricted to the migration inflows under the socialist urban policies, still wait for researchers to study in more rigorous and detailed way. Other episodes that led to large exogenous shocks in spatial distribution of population include the periods of collectivization and industrialization, that had a particularly severe impact on the population of Ukraine due to Famine (Holodomor) in 1932-1933. Unfortunately, these episodes did not attract attention of researchers but it leaves a large scope for the future research in the area.

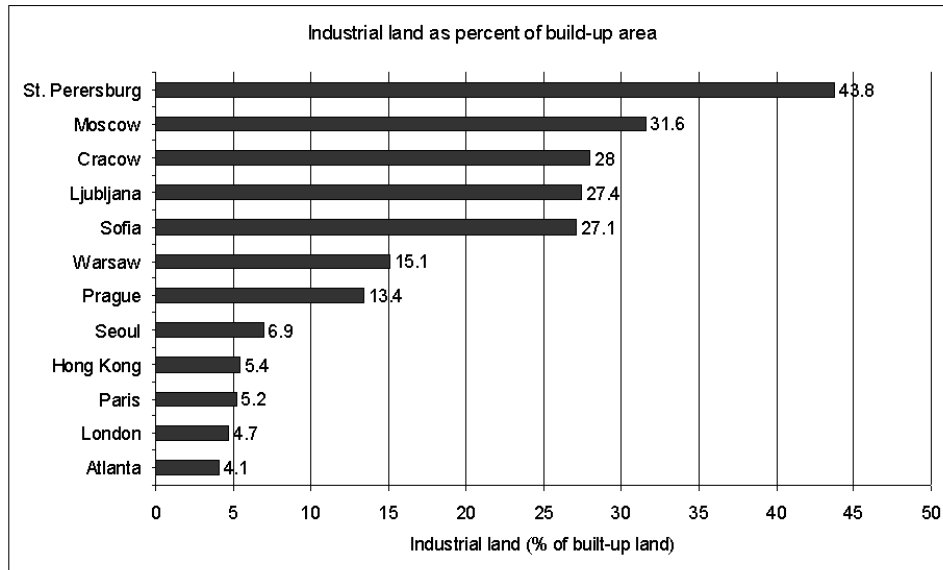## 4.2 Housing and land markets in post-Socialsit cities

Several studies of the housing market in the former Soviet Union in the beginning of transition give a mixed picture on the impact of the socialist urban policies on development of a socialist city. Alexeev (1988) found that housing conditions in the Soviet Union were sensitive to income. This result was considered by the author as an indication that the Soviet households were able to beat the system of non-market distribution of housing: even though the primary allocation of housing was economically inefficient, based on needs and merits system; the secondary housing market allocated housing efficiently, based on such economic characteristics as household income. However, later study by Buckley and Gurenko (1998)) using richer data found no effect of income on distribution of housing. After years of reforms, the housing market liberalized considerably, however, the Soviet legacy of existing stock of housing, peculiarities of housing demand, and monopolization of construction industry create considerable distortions to the market structure that is far from competitive. Lack of reforms, poorly defined property rights, and lack of digitized information on property in the land and housing markets lead to substantial transaction costs and negative investment climate that prevents foreign investments in the real estate market.

"Socialist planners made investment and location decisions under a system in which land had no value, capital had no interest opportunity cost, and energy prices were a tiny fraction of loan prices. Since enterprises could not capture

any gain from redevelopment or conversion of land to highest and best use, socialist cities often had a pattern of sprawling industrial plants, often using what would be the highest value and highest density office and residential land use under any kind or market system" (Malpezzi, 1999). Bertaud and Renaud (1997) point out that the price mechanism in the market economy exerts a powerful influence on land use recycling in built-up areas of the inner city that replace inefficient and obsolete land use by more efficient and modern land use dictated by considerations of economic efficiency. An increase in prices of land in the inner part of the city drives out the inefficient businesses and obsolete structures, and increases job and population densities in those areas. Under the administrative-command economy, on the other hand, the absence of land price mechanism eliminates incentives to redevelop the built-up areas of the city. Administrators that do not act as land use value maximizers respond to the changes in demand for land use by developing construction-free areas at the outskirts of the city because it minimizes construction costs. The absence of land markets in socialists cities, according to Bertaud and Renaud (1997), led to the following features that are specific to the socialist cities:

- positive population density gradient when the most population-dense areas are located in the outher areas of the city but remoteness of housing is not compensted by better amenities suach as larger houses, better environment that are typical for capitalist cities

- larger share of city area is allocated to land-intensive industrial use, often occupied by obsolescent industries located in prime areas of the city. Build-up land used by industires occupies 31% of all land in Moscow compared with 5% of all land in Paris, 6% of all land in Seul, and 5% of all land in Hong-Kong.

- residential areas are concentrated in the periphery

Bertaud and Renaud (1997) compare Paris and Moscow, cities of the similar size, in terms of their land use and population densities and report that the median distance to the center is 7 kilometers for Paris and 10 kilometers for Moscow due to higher population density in the inner part of Paris and higher population density in the outer parts of Moscow. Longer commuting distances and concentration of the housholds in the periphery in Moscow, while jobs are mostly located in the inner areas of Moscow, requires more investments in transport infrastructure and creates higher congestion and greater share of labor time waste. High share of land occupied by land-intensive and outdated industries in Moscow means underused land near the city center, fragmented access due to dense network of railroads required to serve the industrial zones, crowding-out of new, technology intensive industries and services to the outer parts of the city. Figure 3 reports the percentage of industrial area in the total build-up for several cities of the region compared with cities build under the market forces.

Industrial land as percent of build-up area

City	Industrial land (% of built-up land)
St. Perersburg	43.8
Moscow	31.6
Cracow	28
Ljubljana	27.4
Sofia	27.1
Warsaw	15.1
Prague	13.4
Seoul	6.9
Hong Kong	5.4
Paris	5.2
London	4.7
Atlanta	4.1

Source: Bertaud, 2004

Figure 3: Industrial zones as percent of total build-up

Low quality of housing, standardization of demand, and direct restrictions on demand for housing in socialist cities [9], created an unprecedented set of problems that faces the transition countries. Becker and Hemley (1998) report a negative impact of housing restrictions on poor demographic situation in Russia. They have estimated that a fifteen squared meter increase in living space of the household would lead to an extra birth. The lack of office space in the highly populated areas is the direct consequence of the prevalence of housing units built without space for commercial use. Inadequate transport infrastructure can be linked to the socialist urban policy heavily relied on the system of public transportation that does not work well in a free market system due to lack of funding and increasing rates of private motorization.

4.3 Poverty in urban areas

Macours and Swinnen (2008) present comparative analysis of urban-rural gap in poverty in 23 transition countries of the ECA region. First, the urban poverty is generally lower than rural poverty, however, there is high variability of urban-to-rural poverty ratio across transition countries. For example, urban poverty is higher in Belarus, Armenia, and Azerbaijan. While the highest gap between urban and rural poverty (1.5 urban to rural headcount ratio) is observed in Romania, Latvia, Lithuania, and Bulgaria, Russia, and Kazakhstan. These gaps

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[9] A couple with minor children could own only one dwelling which cannot provide more than 60 m2 of living space Alexeev (1988).

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also translates to non-income poverty indicators, such as lower infant mortality in urban areas of Bulgaria, Romania, Russia, and Central Asia. Second, the urban-to-rural poverty gap is increasing in middle-income countries of the region, leading to prediction of growing urban-to-rural poverty gap along the development path for low-income countries of the region. Breaking the poverty into components, wage increase was quite equal in rural and urban areas. Access and availability of services and infrastructure is much better in urban areas in all countries of the region. "While rural areas might have had less access to services even before 1990, service quality and availability often decreased during transition as high quality service providers migrated from the rural areas to the cities or abroad." (Macours and Swinnen, 2008) In most countries of the region, migration of the younger, more skilled, population to urban areas lead to a human capital advantage and consequently large wage differentials.

5   Conclusions

This paper outlines a number of challenges faced by cities in transition. Even though the urbanization rates in most countries of the ECA region are in line with other countries at similar levels of development, the indirect evidence indicate that the largest cities of the region will continue to grow at higher rates relative to medium- and small-sized cities. However, the market rigidities slow down the process of convergence to a new spatial equilibrium. In most countries of the region, growing regional inequalities coincide with declining labor mobility.

Under-populated prime cities in the region fail to capitalize on the agglomeration economies to a full extent. This, in turn, compromise the global competitiveness of local firms, reduce attractiveness of the region for investors, and lead to brain drain of high skilled workers who prefer more densely populated agglomerations of the US and European Union.

Most researchers point out that the market with the largest rigidities that could explain a paradoxical pattern of increasing regional inequality and declining labor mobility is the housing market. The government transfers channeled to depressed regions also reduce labor mobility. Important determinants of urban development are institutions and efficient governance. Decentralization and further democratization of local administrations is a priority for successful urban development in the ECA region.

Importantly, the ECA region attracted the attention of urban economists at the beginning of transition but the more recent developments are not as well studied. This and other papers in the interregional GDN project start filling the gap in the literature but cities in transition require more attention from the researchers in order to understand how the spatial distribution of economic activities move towards an equilibrium and is there any role for government interventions.

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