PAPER

Conceptual Approaches for Development of Mono Cities in Armenia

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Introduction   September 21, 2016 marked the 25th anniversary since Armenians voted for Independence from Soviet rule and re-established the Republic of Armenia. The new Republic had many challenges to face from its first day of the re-establishment: the 1988 devastating earthquake, ongoing war with Azerbaijan and total collapse of the industry sector. Now looking back many problems have been solved in favor of Armenia: the nation achieved victory in the battle and years later even gained the status of The Caucasian Tiger Economy. But the country still is not able to regain its industrial power it once had. After the collapse of the USSR the industry sector of Armenia deteriorated and this caused a high unemployment rate in the small industrial cities of Armenia. This led to high emigration which is a well-known economic problem which destabilized the situation of Armenia. Each year thousands of Armenians leave the country for a better future seeking financial stability. The main reason is unemployment and low economic growth as well as the huge economic disparity between the regions of the country. Since the establishment of the local government system in Armenia (1995), one of the essential issues is the administrative structure, more specifically its high level of fragmentation. The harmonious territorial development strategy in Armenia is not yet fully developed and is predominantly fragmentary in nature. Although certain official documents, such as the Main Resettlement Project of the RA, National Security Strategy of the RA, Stable Development Strategy of the RA, 2012-2016 Plan of Action concerning the Implementation of the State Migration Regulatory Strategy Concept, 2010 – 2012 Rural and Agricultural Stable Development Strategy of the RA, Regional Development Concept of the RA, Community Enlargement and Concept for the Creation of Inter-community Unions and other documents include the vital aspects necessary for implementing an efficient harmonious territorial development strategy and are surely useful for creating a general strategy, they do not envelop the entirety of the issues and certain vital challenges have been left out. Among them is the issue of the comprehensive development of small cities, which is not yet analyzed as a separate issue in the general context of the country's administrative improvements and harmonious territorial development. This paper tries to fill this gap and to provide some policy advises on future development of the small cities in Armenia. In the first part of the paper we analyze the small city (monotown) concept and problems associated with it. In the second part we test the hypothesis of the connection between migration and small city effect. We use the Ministry of Territorial Administration database for 2014 which is the latest and the most accurate data available in Armenia. Our findings conclude that there is a positive dependence

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between migration and the effect of being a monotown. In the third part we provide some innovative ideas on how the situation can be improved using the impact generating methods.

Keywords   Mono cities - Small cities - Armenia - Migration - Urban development

JEL classification O18

Monotown

The notion of "City" is different for every country. In general cities are classified according to size (size of the population), geographical location and functions; more specifically, according to the size of the population cities are classified as small (less than 50 thousand), medium (50-100 thousand), large (100 thousand – 1 million) and extremely large (more than 1 million). However, in some countries (Denmark, Sweden, Finland), for a settlement to be considered a city, it must have a population of over 200 or over 1000 (Canada, Australia) or over 2000 (France, Cuba) and so on. The contemporary city usually carries out several functions: administrative – political, industrial, commercial, transportation, cultural, academic, health (although there are also cities that carry out only one function: Oxford, Cambridge, Vatican, Jerusalem and others).

Historically small cities in Armenia were established as administrative, social – cultural or industrial centers and were characterized by small volume production development. In the outcome of the administrative division, small cities were mostly established in the Soviet times as city-like settlements. Previously there were 63 urban localities, including 27 cities, 24 of which under central, 3 under regional administration and 36 city-like settlements.

After gaining independence, 17 of the city-like localities and 3 of the urban localities that were considered Soviet administrative units, gained a city status according to the 1995 Administrative Division Law of the RA. After the fall of the Soviet economic system some cities under regional administration fell into a state of crisis. The new economic model eliminated the existing urban development objects rendering the residents unemployed, emigration rose, the demographics gradually changed.

According to the Administrative Division Law of the RA, the territory of the RA is divided into 10 regions and 915 communities, of which 19 are urban and 866 rural. As of 1st January 2014, 1914.1 thousand residents live in urban localities (including 1068.3 in Yerevan) and 1103.0 thousand residents live in rural localities.

Table 1 Classification of the cities of the RA according to the size of the population

Name of the region	Number of cities	Including cities according to the size of the population (in 1000 residents)					
		Micro cities, less than 5 000	Small 5-20 000	Medium 20-50 000	Large 50-100 000	Macro 100-500 000	Super Large, more than 500 000
Aragatsotn	3	-	2	1	-	-	-
Ararat	4	-	1	3	-	-	-
Armavir	3	-	1	1	1	-	-
Gegharkounik	5	-	3	2		-	-

Name of the region	Number of cities	Including cities according to the size of the population (in 1000 residents)					
		Micro cities, less than 5 000	Small 5-20 000	Medium 20-50 000	Large 50-100 000	Macro 100-500 000	Super Large, more than 500 000
Lori	8	3	4		-	1	-
Kotayk	7	1	3	2	1	-	-
Shirak	3	-	2		-	1	-
Syunik	7	3	2	2	-	-	-
Vayots Dzor	3	-	3	-	-	-	-
Tavoush	5	1	3	1	-	-	-
Yerevan	1	-	-	-	-	-	1
	49	8	24	12	2	2	1

One of the bequests of the planned economy in Armenia is the existence of mono profile localities, which were established based on the principle of developing territorial – industrial complexes, where production cycles (production components) were irreversibly tied to the social responsibility that the given enterprise had within the society. With the implementation of a new economic model, socio-economic challenges came about which stemmed from years –worth of objective reasons.

Currently a universal definition of mono cities is not found in Armenia's official documents or academic literature, nor are there universal criteria and indicators that define mono cities. According to the best practices of different countries, mono cities are comprised of 10 – 200 000 residents, which are characterized by the integration of at least 20% of the workforce in mono profile urban development enterprises in the territory. According to the above definition, 20 out of 49 towns can be considered as a monotown. This number is reached by dividing the number of people working in one industry by the total number of employed people. It is worth noting that in 5 towns more than 20% of population work in one company. With narrow economic bases, large-scale layoffs, and few short-term opportunities for alternative employment, mono cities took the brunt of the crisis. So, the current administrative – territorial division of the RA dictates a new and unique approach to the classification of mono cities.

The monotown effect as reason for migration

We now pass to our hypothesis testing: Is being a city a monotown effected by a higher rate of migration? The main idea is that the Soviet mono cities were not sustainable and lacked of diversification which resulted to a higher unemployment and eventually a higher migration rate after its collapse.

Poverty and emigration remain among most important issues in Armenia. Poverty has its negative effect on migration. By the definition of World Bank "poverty is the inability to ensure an acceptable minimum of certain living conditions." According to recent studies, poverty in Armenia remains high. In 2008-2013 the poverty growth rate was more rapid in urban than in rural regions; furthermore poverty in urban regions (except Yerevan) is higher than the national

average (32.0%), constituting 39.3%. It is worth noting that the urban population, 63.8%, makes up the majority of the poor, and 70.1% of the extremely poor population (Gagik Gevorgyan 2014). While the unemployed faced the highest poverty risk (38.1%) among the economically active population, from the standpoint of urban/ rural distinction it appeared that in 2014 poverty rate among the unemployed living in other urban communities was 1.3 times higher (46.9%) than that among the unemployed living in Yerevan.

This high level of poverty results in a higher rate of migration. Economic migration is defined as a choice to move to improve the standard of living by gaining a better paid job. According to Household's Integrated Living Conditions Survey (ILCS) 2014 findings, some 8.9% of households were involved in external and internal migration processes over the period of 2011-2014. According to the Caucasus Research Resource Center 2012 survey of potential migrants, 36% of people between 18 and 50 years of age in Armenia are seriously considering leaving the country to live or work abroad. At that, most of respondents with household members having migrated to/returned from the Russian Federation or other countries specified the need to work, search for work, or seasonal work as the main reason for migration.

So with this analysis I chose unemployment rate and the monotown condition as determinants of migration. I also include company per capita ratio (registered business companies in the city) which we will use for policy recommendations. Considering all mentioned above the increase in unemployment rate and the monotown condition should increase the level of migration. The vice versa should exist in case of number of companies per capita.

Table 2 Expected signs of the coefficients

Monotown	Positive (+)
Unemployment	Positive (+)
Company per Capita	Negative (-)

The cross sectional data is taken from the Ministry of Territorial Administration for the year 2014 and is the most accurate and precise data available for this project. The number of observations is 48 which is actually the number of cities in Armenia (not including Yerevan).

Table 3 Descriptive Statistics

	Observations	Mean	Standard Deviation	Min	Max
Migration	48	0.0755957	0.0822677	0.18339	0.31074
Unemployment	48	0.4831739	0.2494692	0.32628	0.88793
Company per Capita	48	0.0023648	0.0021829	0.03168	0.10876

The following regression model is used to test the relationship between the level of migration, monotown, companies per capita and unemployment.

$$\text{Migration} = \beta_0 + \text{Unemployment } \beta_1 + \text{CompanyPerCapia } \beta_3 + e$$

- Migration is the number of people who migrated from the city as percentage of total city population.
- Unemployment is the ratio between the number of unemployed people and total available workforce (people aged 18-63).
- Monotown is a dummy variable. We used our methodology developed in the previous section: more than 20% of employed people should work in the same sector of economy. The calculation were done by the author.
- Company Per Capita shows the ratio between the number of registered companies and total population.
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Before considering the models we checked on multicollinearity and heteroskedasticity problems. Our test showed that we do not have a multicollinearity and heteroskedasticity problem, as well as the Jarque-Bera test revealed that our data is normally distributed.

Table 3. Regression Results*

	(1)	(2)
Unemployment	0.173*** (0.037)	
Monotown	0.042* (0.017)	0.055** (0.018)
Company per capita	-9.691* (3.945)	
Log unemployment		0.045** (0.013)
Log Company per capita		-0.029* (0.009)
Number of observations	48	48
Adjusted R2	0.556	0.515
Akaike (AIC)	-138.758	-134.523
Schwartz (BIC)	-131.273	-127.038

*Standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1*

We are considering two models. (1) represents a regression where no variables are transformed. (2) presents a regression where the natural logs of all independent variables except the dummy variable are taken. It is done because we consider that the impact of the variables on migration should become less significant after a specific point. We see from the table that the adjusted R squared is greater and AIC and BIC are smaller for the first model. So we choose the first model as it is the better.

From the results we can conclude that our hypothesis was right and we got the results we expected. The unemployment rate and monotown condition increase the migration rate respectively by 0.17 and 0.04 unit each of them, while the number of opened companies per capita strongly decreases the number of migration by 9.6 unit. This is an interesting finding: it shows that business development is a major factor and can negatively effect on migration.

Policy Recommendations

In general, taking into account the international best practices the ways in which the state can support the development of mono cities can be the optimization of mono cities based on the production capacities of stable functioning enterprises, diversification of the economy and development of small and medium sized enterprises to ensure the optimal structure of the population's employment, development of social and engineering logistics based on the optimal number of the population.

Besides all the above mentioned suggestions, we would like to emphasize the importance of the agricultural development in Armenia. The rural communities included in the urban communities are left out of the agricultural development programs. The production, building and logistical capacities of the former city-like settlements that make up today's mono cities can be integrated with the existing agricultural resources to support the development of the city as a whole throughout the entire value creation chain.

The promotion of agricultural development and the processing of agricultural goods, as well as the creation of a new approach toward utilizing the manufacturing resources will promote the general development of small cities, which in turn will directly impact revenue growth and reduction of poverty and emigration. It is necessary to analyse the small cities that were established during the planned economy on a production – city basis, where the urban development enterprises are currently either partially or completely not functioning. It is advisable to analyse the creation of such mono cities through an integrative approach by integrating the primary agricultural production with the logistical capacities of the urban localities and develop the entire value chain of agricultural production by supporting the creation of agricultural refinement of small and medium sized enterprises. More specifically production and value chain development confirm that by working in multi-settlement small urban communities, great results can be obtained by utilising the resources of the rural localities in the process of primary production and the urban logistics in the process of refinement and marketing, thus promoting the development of small and medium enterprises.

Conclusion

The small cities of Armenia have a huge economic potential if the right decision will be made regarding its development. At first, the problem should be defined: we need a new classification for the RA mono cities. In our paper we defined mono cities as having more than 20% of the workforce employed in one sector of the economy. We showed that being a mono cities increases the migration rate as well as the poverty rate which is logical from economic logic. The enterprise per capita level high ceases the migration level: 1% increase reduces migration by 9.6%. Finally we discussed the agricultural sector development in RA cities. We think that there is a lot of potential in the agricultural sector of Armenia. And this problem can be solved by utilizing the cities industrial power by creating the agricultural refinement enterprises in cities. The full agricultural value chain creation will boost the small cities development.