

## ESTABLISHMENT OF A TECHNOLOGY DEVELOPMENT BANK AS A MEANS TO FACILITATE ECONOMIC DEVELOPMENT IN RURAL LATVIA

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**Abstract.** Since the early 1990s, the population of Latvia has been declining steadily, due to a large extent to the net emigration of Latvians seeking better opportunities abroad. The adverse demographic change is particularly acute in rural communities. A different economic development strategy focusing on the implementation of innovative technology-based manufacturing activities in rural communities is urgently required.

**Keywords:** emigration, employment, Latvia, rural development, technology.

### Introduction

Latvia is a small country with a long tradition of highly educated population. Its population has been declining steadily since the early 1990s [1] arising from a) negative natural increases and b) increased emigration rate. Because of the lack of gainful opportunities in rural communities, there is also a large internal migration. There has been an accelerated trend of urbanization since the early 1990s. Between 2000 and 2011, the population of Latgale had declined by 21 % [1]. The rural demographic crisis is particularly acute in the context of a small starting population base. At present, nearly 50 % of the national population resides in Riga and Pierīga rajons. Educated young people are drawn invariably to work and reside in the Riga metropolis. In many instances, emigration is continued onwards to richer northern EU states, often permanently.

The current apparent economic recovery [2] would appear to be due largely to the situation of “*No People, No Problem*” [3; 4]. But the underlying demographic problem persists without any means of rectification [5]. This paper explores the underlying causes and possible remedies of the emigration component of population decline. The inter-related negative natural-increase component of the Latvian demographic crisis is discussed elsewhere [6].

### Demographics

As shown in Fig. 1, the population of Latvia has been and is still declining steadily since the end of the Soviet period. This continuing decline would appear to be due firstly to the substantial exodus of residents to Russia during the first half of the 1990s, and secondly to the significant economic emigration of citizens during the past decade [6]. Various scholars and commentators have voiced considerable alarm about this trend [7; 8]. It has been suggested that for political reasons, the official statistics may be grossly under-reporting the Latvian loss of population [8]. The present trend is exacerbated by the decline in the crude birth rate since the 1990s. Between 2005 and 2010, the negative natural increases had equalled to net emigration [6].

### Economic disparity

Historically emigration in Europe could be attributed to 4 major causes, viz., war, famine, pestilence and poverty. In the past decade, Latvia has had no devastating wars (including political upheaval), widespread famine or uncontrollable pestilence. Latvians are driven largely by poverty to depart to wealthier northern EU states. Emigration would decline substantially if there was wage parity. Fig. 2 shows the average annual gross earnings in industry and services of selected groups of EU member states. For Latvia to reach wage parity with the northern EU member states by 2022, a sustained real wage increase of about 17 % annually would be required. It is evident that closing the wage gap could not be achieved by any measures in real time.

For Latvian emigrants, the basic wages even in very mundane work outside their field of education in Ireland or the UK are often very much higher than work in Latvia in the field of their education. Many Latvian women have been involved in fake-marriage schemes, particularly in Ireland, as a means to solve their personal or family financial problems in Latvia [9; 10]. Cultural identity is also an element of importance to affect the emigration rate. Most economic emigrants generally prefer to stay in their homeland if there was satisfactory employment [11].

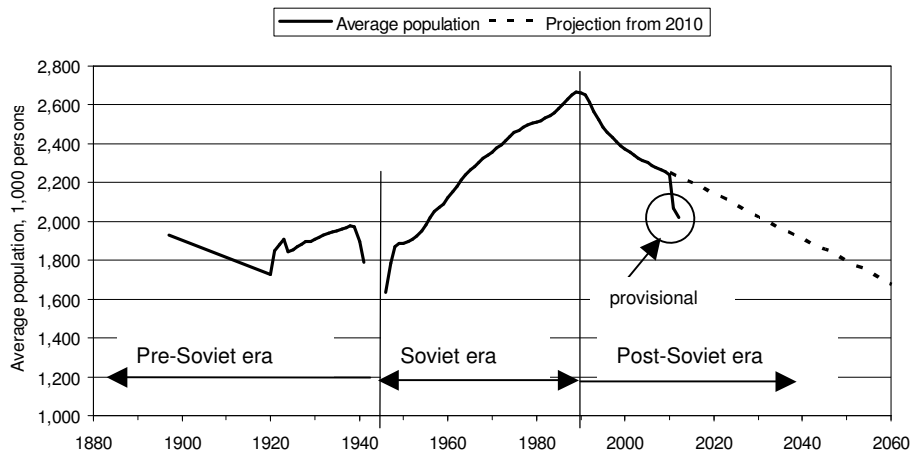


Fig. 1. Demographic trend in Latvia since 1897 [1]

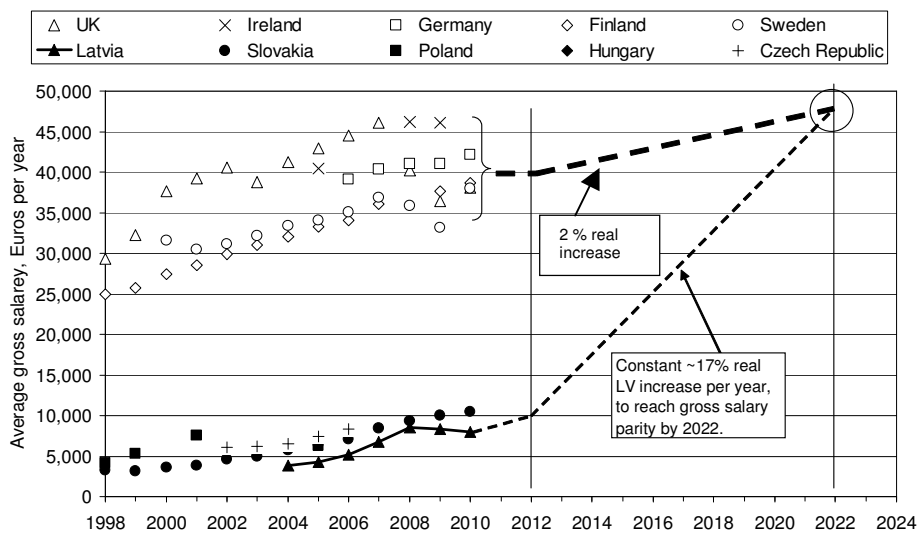


Fig. 2. Average annual gross wages of selected EU member states [12]

Just how poor are Latvians in real life in comparison to citizens of other EU states? Comparison of the standard “food basket” or “housing” is inappropriate as the customary lifestyle of Latvians is substantially different. Unlike Irish society (as an example), Latvian society with an economic history of the Soviet era has a difference gauge of relative poverty. A better test is to compare the relative cost of hypothetical “vacation air fare” for travel between Riga and Dublin, as offered by a neutral third-party airline. As given in Fig. 1, comparison of the return airfare as a % of annual gross earning would suggest Latvians to be about 3 times poorer than Irish.

Table 1

Comparative poverty

Model vacationer	Example annual gross earning, EUR	Return air fare, EUR (all taxes and charges included)*		Air fare as % of annual gross earning
Irish	40,000	Dublin → Riga → Dublin	487.50	1.22
Latvian	10,000	Riga → Dublin → Riga	358.17	3.58

\* One-week vacation on starting on July 6 and ending on July 13; Lufthansa early morning departures from Riga or Dublin via Frankfurt; based on test booking made on January 23, 2013.

Creation of satisfying jobs in the homeland

There has been insufficient creation of meaningful jobs to absorb the multitude of educated youth graduating from technical schools and universities since the Latvian accession to the EU in 2004. There is a notable continued absence of a foundational industrial base since the demise of the Soviet

era. Economic prosperity arising from the euphoric influx of Latvian expatriates from abroad in the early 1990s, and the financially-engineered expansion in the real estate sector in 2004-2008 have had no enduring impact on reversing the economic emigration trend.

Since 2004, considerable sum of national and EU funds have been invested in infrastructure and education in the form of roads, bridges and “capacity building”. This influx of EU funding has yet to produce the intended result of “regional equalization”. In retrospect, there was no parallel purposeful plan to create a significant number of enduring good-paying jobs to capture the interest of youth of all educational levels. In the trajectory of the present modality of national and EU funding intervention, significant improvements in the outcome could not be expected.

Investment in research is a highly desirable public policy. It is also apparent that research *per se* does not translate into direct creation of enduring employment for most people, if there was no concomitant establishment of new commercial enterprises. The present pursuit of foreign direct investment with the inducement of very low corporation tax rate could only foster the continued depression of real domestic wages. In the near term inside the EU, it is competition against poorer Romania and Bulgaria, The Latvian corporate taxation rate is already very low by the EU standards. There is little or no possibility that this industry development strategy could afford a significant reduction of Latvian poverty situation in the long term.

A new national economic development strategy is urgently needed to discourage poverty-driven emigration. Latvian specific attributes (e.g., highly educated work force and abundant natural resources) and limitations (e.g., small population base and sparsely-populated country side) would need to be considered. Community-scale development of unique high-value export-oriented manufacturing activities would certainly be a realistic path forward. There are numerous modest-scale development projects which have been discussed in Latvia for a decade or more. Table 2 lists several practicable examples with short implementation time. Under the framework of maximum deployment of local natural resources, relatively small capital input, advanced manufacturing technologies, and exportation of high-value finished products, significant number of enduring satisfying jobs could be created at the community level for job seekers with various levels of education and training. There is certainly no lack of “good ideas”.

### **Financing of development projects**

The critical problem is project financing available to community-scale entrepreneurs. For obvious profit-driven reasons, commercial banks prefer lending to real estate and to large enterprises. Wong [13] had previously described similar financing problems encountered by small-scale independent technology innovators in Canada. Conventional bank financing (even with government guarantees) is largely inadequate to address such project financing problems. The present modality of project co-funding by the Latvian State (and the EU) does not rectify the problem entirely. In general, entrepreneurs do not have sufficient own fund to access these co-funding programs in the first instance. Forcing Latvian entrepreneurs to acquire needed “own” funding from foreign venture capitalists is not a satisfactory approach. After all, venture capitalists everywhere have the singular goal of making largest profit as quickly as possible, by whatever means. And in order to achieve this end, venture capitalists generally take operating control of the entrepreneur’s business. In essence, these Latvian entrepreneurs will effectively be owned by venture capitalists. It would be naive to believe that venture capitalists would have any empathy to build and sustain community-scale economy in rural Latvia.

What is needed for Latvia is the establishment of a Technology Development Bank (TDB) to fill the dire need to finance “higher risk” new technology-oriented community-scale enterprises. The TDB could become a new paradigm of rural development in improving the effectiveness of the existing EU program funding. The Latvian State should be exempted from the mandatory 50 % contribution to access the EU program funding for TDB capitalization. The Latvian State has always been severely stressed to allocate sufficient national budget to access matching program funds from the EU. In parallel, the prevailing EU regulation governing “State aid” should be suspended for “poorer” member states such as Latvia to afford efficient implementation of novel economic development policies.

Table 2

**Example community-scale industry development projects**

Products	Example practice	Export market	Employment potential	
			Jobs per unit	Number of unit
Agri-pulp™(a)	Printing paper and food-grade paperboard; Deployment of cereal straw and flax straw; Zero-pollution manufacturing technology.	DE and UK	100 to 200	~4 to 5
Dietary fibres	Texture and moisture improvers for processed human foods; Production from sugar beet residue and/or agri-pulp™ (b)	Northwestern EU and RU	20 to 30	~5 to 10
Fresh vegetables	Operation of greenhouses to crop organic, cool-temperature, short-cycle brassicas.	FI, LT and SE	20 to 30	~5 to 10
Nutritional therapeutics 1	Lignans and flavonoids: end uses including anti-cancer and anti-dementia in the food, beverage and cosmetic industries; Extraction of isolated conifer knots from wood residues of local woodworking industries.	East Asia, Northwestern EU and USA	20 to 30	~10 to 20
Nutritional therapeutics 2	Triterpenoids: novel formulations for blending into anti-cholesterol and anti-obesity dairy products.	East Asia, IE and UK	20 to 30	~2 to 5

(a) Agri-pulp™ is a registered trademark of Arbokem Inc., Canada.

(b) Co-production of dilute acetic acid from beet sugars by anaerobic means could be particularly advantageous for the production of calcium magnesium acetate (CMA), a specialty non-corrosive road de-icing agent for bridges and airport runways. There are significant dolomite deposits in Latvia.

Table 3

**Qualifying criteria for TDB financing**

Issues	Example qualifying criteria
Ecology	<ul style="list-style-type: none"> <li>• Preferential deployment of local and regional renewable natural resources</li> <li>• Conservation of supply source of (agriculture-based) raw materials</li> </ul>
Employment	<ul style="list-style-type: none"> <li>• Prioritization of employment of community members</li> <li>• Attractive wages for the retention of skilled workers</li> <li>• Safe working conditions</li> </ul>
Business	<ul style="list-style-type: none"> <li>• Personal commitment (and sacrifices) of project proponents</li> <li>• Indigenous local ownership</li> <li>• Manufacture of unique high-value products</li> <li>• Enduring market demand of finished products at preferably premium pricing</li> <li>• Prioritized exportation to “high-income” countries in northern EU and elsewhere</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Small carbon footprint including the involuntary low emission of greenhouse gases</li> <li>• Little or no pollutants emitting from the manufacturing operation</li> <li>• Preferably novel, to render “copying” difficult by others</li> <li>• Low-intensity energy requirements</li> <li>• Renewable energy self-sufficiency</li> </ul>

For example, the TDB could purchase fixed-term redeemable debentures from the start-up enterprise. Upon redemption of debentures, the TBD treasury is replenished continually to help other similar technology-oriented community-scale enterprises. Customary review of the proponent’s business plan continuing essential technical and business elements of the prospective start-up enterprise would of course be conducted. The relative amount of debenture financing could be set on a case-by-case basis. The effective yield of the debentures could be pegged to the average EU-wide interest rate published periodically by the European Central Bank. Table 3 shows an example list of qualifying criteria which are of little or no interest to conventional lenders. Conventional banking institutions should have absolutely no reason to complain about unfair competition as these commercial banks are reluctant to lend to start-up enterprises in virtually all cases. The proposed TDB debenture-purchase concept might be a means to allow Latvia to circumvent the EU rules for state support, for addressing the specific Latvian circumstances of national economic development.

### Concluding remarks

Continuing catastrophic emigration of Latvians during the past decade is the result of underlying poverty in Latvia relative to that in prosperous northern EU-15 states. Creating well-paying meaningful manufacturing jobs locally for Latvians of all educational qualifications would be a critical first step in reducing involuntary emigration. In turn, reduced emigration would have a beneficial effect on altering the negative natural increases in the longer term. Community-scale industry development is a practicable strategy in which capital input is minimized for maximum job creation to manufacture unique exported-oriented goods. Timely national mobilization of Latvian society for a reformulation of the economic development plan is urgently required to realize this goal of reducing emigration in real time.

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