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Tale of two cities. A comparative study of relationship Between education and economic prosperity

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A COMPARATIVE STUDY OF RELATIONSHIP BETWEEN EDUCATION AND ECONOMIC PROSPERITY

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ABSTRACT. Over the last century, the social function and the role of the universities and other higher education institutions (HEI) changed significantly. What the contemporary students expect to gain due to their university education is neither enlightenment nor insight, but rather skills and practical knowledge needed to successfully find and retain a job. In turn, the modern HEI ceased to be the entities isolated from their surroundings but became the institutions intertwined into community life. Hence, our purpose is to redefine the role of the universities in their communities with the emphasis put on the relationship between the HEI and the communities' economic performance.

The general discussion on the transition in academy's place in the society is presented in the first section of the article, whereas its second part provides an overview of the potential contributions to the reciprocal development made by the universities and communities. Against such a background two illustrative examples are analyzed, i.e. Lodz, Poland and Brownsville, Texas. Both the theoretical inquiries and these examples' analysis confirm that the relationship between the development of the universities and economic performance is bi-directional: on the one hand, the investments in HEI trigger stimuli towards economic growth, and on the other, the economic prosperity of the city commonly results in invigorating the scientific research.

The article concludes that despite the fact the interrelatedness between universities and local communities' economic performance is too complex to be boiled down to any simple rule, the communities' investments in HEI may sow seeds of future economic growth and provide a safety net protecting the economy in times of stagnations or slumps.

Keywords: Higher Education, Economic Performance, Lodz, Brownsville, Social Role of the Universities

JEL Classification Codes: I23, I25, N92, N93, N94, O33

A rising tide lifts all boats

1. ACADEMY IN TRANSITION

Historically, during their peak periods of economic prosperity, great empires and kings created institutions of formal learning. From the Egyptians and the Romans to the Ottomans and the Moors, all initiated such higher education institutions (HEI) and libraries. These entities were the forerunners of what in the Middle Ages emerged as universities. Bologna University, regarded as the first university, was initially organized as a guild of lecturers and students. Originally, these academies were for the benefit of the privileged classes. Their preliminary purpose was to provide instruction in philosophy, logic, rhetoric, ethics, and religion. Young men (and some women) that

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attended these institutions came from affluent families and, as such, these young learners were not likely to seek gainful employments at the end of their university education. These academies were, in a true sense of the term, in knowledge management business. The working classes that needed and sought jobs learned their trade or craft through the process of apprenticeship. Members of these lower classes rarely attended higher schools.

Universities saw themselves as beacons of enlightenment and insight, not suppliers of diplomas that serve as union cards for various professions. Among the numerous changes that have ensued in the process of transition from the agricultural age to the digital age, one is that of the *function and role* of the university.

As societies moved from aristocratic cultures to the more egalitarian and democratic ones, there was growing pressure on widening access to education. Such demands were additionally supported by the influential economists and economic thinkers of the time who regarded public education as an investment in human capital, and as such, one of the key determinants of the long-run economic prosperity (see: Smith, 1904 [1776]; Mill, 1909 [1870]; Marshall, 1947 [1920], 211–212, 216**,** 562–566, 229, 717–718; Marshall, 1929, 262–263). Yet, such an approach strongly claimed for closer links between the content of academic lectures and some visible benefits from putting the acquired knowledge into practice. As late as 1920, universities in the United States and Europe taught poetry not pottery, ethics not electronics, astronomy not agricultural engineering. Those that wished to learn trades such as construction, repairing automobiles, and servicing air conditioners went to trade schools and technical institutes. Our higher education institutions (HEI) have become trade schools offering a smorgasbord of college credit for auto repair, break dancing, surfing, French pastry, and managing a small business.

It is apparent that in the 21st century, the initial purpose of the academies has become faded if not been forgotten. Economic reality for most university students in 2010's is such that they are going to *need* and look for jobs in specific trades. As a result, they seem to have no use, appetite or patience for the arts, philosophy, and literature. The students come to the institutions of higher education to prepare for the trades, not for the enlightenment. Henceforward, the universities have transformed into trade schools, and the professors have assumed the roles as trainers, facilitators, and mentors. Focus is no longer Plato's *Republic* or Homer's *Iliad* but the corporate cultures of Google and Microsoft. Bill Gates, Martha Stewart, and Donald Trump have replaced the heroes of the Greek mythology. Those that can teach the "in-demand" skills retain their jobs and receive rewards

It seems unlikely that the recent trend will reverse. It is doubtful that knowledge for its own sake will regain its position as being valuable. The current thinking of a typical university student is - How does any particular set of courses help me in *obtaining and/or retaining a job*? Hence, this tail wags the institutions of higher learning. The new mission of the universities is to produce *employable* individuals. Universities are ranked in terms of their graduation rates and starting salaries of their graduates, i.e., an understanding of mega pixels is valued more than appreciating the Mona Lisa.

Although the universities do not openly admit to the aforementioned transformation in their mission statements, more and more, the institutions are run as businesses. Terms such as Total Quality Management, Lean Operations, Rightsizing, Outsourcing, and Meeting the Customers' Needs are common vocabulary among the university administrators. Students are viewed as paying customers and efforts of recruiting students are beginning to resemble the battles for larger market shares fought by the likes of soft drink makers, fast-food chains, automobile producers, cosmetic industry, insurance companies and financial institutions. Just as businesses that cease to be profitable are shut down, many of the liberal arts universities in the United States and Europe have faced or are facing closing downs.

Universities have begun to make claims that they are offering the best *value* for the investment (tuition dollars); the return on investment is promised in comparison tables and charts with starting salaries for their recent graduates, and acceptance rates of undergraduate students into professional colleges such as law, dentistry, medicine, and engineering. Faculty are hired, promoted and retained using criteria that add value to a campus - through either research and publishing potential, or a record of accomplishment of attracting grants and external funding to an institution. Faculty's priorities have shifted from teaching to publishing and seeking outside funds.

The shift is neither good nor bad. It is what the global economy dictates. Species living in water learned to swim or they died out; species living on land learned to walk and run to survive or the bigger and stronger creatures consumed them. Big business runs the global economies; the educational institutions produce the workforce for these corporations. Survival remains the name of the game.

Our intention is not to criticize the universities or indulge in academic nostalgia about the days gone by. Our purpose is to redefine the new role and place of the HEI in their respective communities. Universities are no longer the Ivory Towers isolated from their surroundings. Most universities that at one time were located away from the cities have become parts of the cities. This has occurred as the cities have grown and expanded. The physical distance that once separated the "town and gown" has all but vanished. Urban developments surround the universities in all metropolitan cities in Europe and the U.S. The communities invest in their universities and in turn, have certain expectations from the institutions of higher learning.

It has been demonstrated repeatedly that the cities that prosper also become the incubators of knowledge, research, and innovation on their university campuses. Similarly, when universities prosper, their communities prosper with them. Thus, a new role for a university is to provide citizens the opportunities to develop themselves, advance economically, and benefit their communities.

A more recent approach to the role of the universities is echoed by Hirshberg (1991), “There is a growing expectation that universities should play a greater role in the economic development of their regions and states.” Greenspan (2004) defined the role of the universities by saying that the American educational system bore the responsibility for preparing the workforce that could meet the challenges of economic change. Porter (2006, 41) suggests a linkage “between the prosperity of regional economies and the health of their colleges and universities.” The awareness of this linkage is easily

noticeable in the approach adopted by the European Union officials, who regard an increase in the tertiary education graduates as one of the key elements needed to ensure sustainable and inclusive growth (European Commission, 2010).

Countless studies have concluded that investments in higher education have resulted in prosperity in metropolitan and urban areas (Dougherty & Bakia, 1999; Anderson, 2006; Hahn, Coonerty & Peaslee, 2003; Rephann, 2009; Kress & de la Santos, 2014). Economic success correlates with education. People (and countries) with little education are mostly poor while people (and countries) with very advanced education are mostly wealthy (Leef, 2014). In his first address to the Congress, President Barack Obama warned that a failure to raise the educational levels was a prescription for economic decline. This, however, does not imply that more colleges or college education directly and automatically translate into more economic prosperity. Disproportionate investments in formal learning while the populations needed informal and non-formal education can lead to a counterproductive and dissatisfied educated class as has been shown in Pakistan, Nigeria, and Egypt, (Curle, 1966; Leef, 2014). To a certain extent, the problem is observable even in the highly developed regions. For instance, in the EU countries, it occurs among technical and associate professions, or craft workers and machine operators. In the former case, more than 20 percent of the employers completed tertiary education, which is perceived as unnecessary to do this kind of job. In turn, in the latter case, the share of overqualified workers is estimated at about 10 percent (Education, Audiovisual and Culture Executive Agency, 2012). Therefore, the question arises whether there is a saturation point, beyond which further investments in HEI are not beneficial to the city's economic performance anymore. From the point of view of the present needs of the local industry, the problem may look like a classic example of diminishing returns: the subsequent units of investments bring smaller and smaller benefits. If so, the saturation point must be reached eventually. However, the situation is much more complicated, as the investments in HEI may and in many cases do lead not only to the deep changes in the production processes but also to the creation of some new products and even new branches of production. The pace and paths of technological development, which constitute a significant component of the overall picture, are difficult (if possible) to predict and to model in a formalized manner. Considering the above, the authors' aim is to analyze two examples of the relationship between HEI and economic performance of the communities. Those two cities being the illustrative examples of the investigated relationship are Lodz, the third biggest city in Poland and Brownsville, a town in the south most part of Texas. To provide the necessary background to the further analysis, the next section of the article presents an overview of the potential contributions to the reciprocal development made by universities and communities. The detailed discussion of the examples is presented in the article's third and fourth parts. The article concludes that despite the alleged simplicity, the interrelatedness between universities and local communities' economic performance is far too complex to be boiled down to any simple rule. Nevertheless, the analyzed examples show that communities' investments in HEI should be acknowledged as the seeds of future economic growth and a safety net protecting the economic performance in times of recessions or slumps.

2. Partnerships between Communities and Universities

2.1. Communities' Contribution

Cities and communities not only host the universities but also invest in them heavily, both financially and in resources. Nearly all communities in the U.S. impose an annual property tax on its homeowners and commercial property owners in the form of a school tax. A large portion of the school tax is allocated to the colleges and universities.

In turn, all the types of financial facilities for students and/or students' families may be regarded as an indirect support of the higher education sector. They may take the form of "no tuition fee" systems, typical of the Nordic countries and recently introduced in all the German lands, wherein the financial burden of covering the costs of studies is taken over by the state. Such a support can also take the form of tax reliefs, grants, loans with governments guaranteeing interest rates and repayment conditions, or even students' parents family allowances, as it happens in Portugal and France (European Commission/EACEA/Eurydice, 2015).

Furthermore, states pour large sums of money directly into the state-supported universities. In turn, local industries and businesses support the institutions of higher education by sending their workforce for training and retraining. In such arrangements, the businesses pay a large portion (if not all) of the tuition fees. Universities come to depend on large corporations for a constant supply of students and tuition revenue.

Universities also benefit from the expertise of the business leaders and other professionals who serve as guest lecturers and visiting faculty. Businesses and industries open their doors to students to acquire real-life work experience, observation, and hands-on training.

Many large and small businesses hire students as part-time or full-time workers enabling the students to pursue their academic careers.

Universities rely on local workforce whenever new construction or renovation work is to be done on a college campus.

2.2. Universities' Contribution

There is no great city without a great university
John Keiser, President, Boise State University

Universities help the regional/local economic development in six ways (Dougherty & Bakia 1999; Rephann, 2009; Kress & de la Santos 2014).

2.2.1. Universities as employers. As of December 2012, 21 million students were attending universities and colleges in the U.S. in 4726 universities. In the same year similar number of students, i.e. 20.2 million, were educated by the 1.4 million of academics in the HEI of the 28 countries of the European Union, whereas global tertiary education enrollment was 196 million (Eurostat, 2015).

Of the U.S. universities, 1700 were community colleges and 3026 4-year colleges. Nearly 920 universities offer graduate programs. In any given HEI, faculty fills only 33 percent of the jobs; the remaining 66 percent are administrative and support staff positions. Local people fill a majority of these positions. Among the one-third faculty, a sizable portion may also consist of local people that may have acquired their graduate degrees away from home but have returned to their roots and work locally. In many mid-size and small towns, the universities are the largest employers next to the local government agencies and civil services. Universities and colleges in the U.S. employ more than 3 million people and add nearly 300,000 new jobs annually.

2.2.2. Universities as buyers. The U.S. Universities spend 50 percent of their budgets ($256 billion in 2000-2001) on buying goods and services (Porter, 2006). A major portion of the university purchases are from local business and vendors. In a "Buy West Philadelphia" drive, The University of Pennsylvania spent $55 million in local purchases in 2000. According to one estimate, the 1900 urban universities in the U.S. spent $136 billion on salaries, purchases of goods and services in the year 1996 (Hahn et al., 2003).

2.2.3. Universities as workforce developers. It is a common acknowledge that one of the main tasks of the universities and colleges is to prepare the students to take on entry-level jobs in various sectors of an economy. In the last three decades, the universities and colleges have gone beyond providing the entry-level training. Working closely with the local industries, the universities develop special courses and training programs to upgrade the knowledge and skills of the existing workforce. Often times, such programs are delivered at locations and times that are convenient to the students. Universities develop instructions that may be needed by a cohort within a specific industry or specialization. Lamar University in Beaumont, Texas, developed a course in Statistics for the Medical Profession and delivered it at a local hospital to a group of nursing students and other medical professionals.

In the majority of the geographic region, there are specialized resources, skills, infrastructures, specialized technologies, and service providers. Such concentrations have facilitated the creation of clusters. For instance, the existence of fertile lands in Iowa made possible to develop agriculture. Yet, it not only created a farming cluster, it also created the industry that processed wheat and corn, baking products, other products associated with corn such as corn oil, corn syrup. Agriculture in California created a cluster of the wine industry. Other regions have seen growth in clusters of meatpacking, food processing, textile industry, and production of spirits such as Vodka and whiskey – by-products of potato, barley, and rye. Clusters increase the productivity of a region enabling it to compete with other regions or countries. Local and state governments for the purpose of bringing and retaining businesses and industries to their areas support clusters. Not only are such clusters supported in Poland, they are, in some cases, created by the government, in a sense like in China, by the establishment of the so-called Special Economic Zones, to encourage foreign investments.

Some clusters are local; others are traded. Local clusters or industries serve the local needs and sell locally. Local clusters exist in all geographic locations. Traded clusters

produce goods and services that sell in other regions and areas. Local clusters generate nearly 70 percent of jobs in the local and regional economies in the U.S. Only 30 percent of employment stems from traded clusters (Porter, 2006). Traded clusters are the engines of wealth and prosperity in a region. These clusters also pay higher wages.

What is more, the existing education and research centers may work as an incentive for the companies looking for highly qualified, specialized labor force, which may even lead to development or establishment of the industrial clusters.

2.2.4. Universities as real estate developers. Universities and colleges may start out in existing buildings, but soon, with growth and need for expansion, are bound to undertake the construction of classroom buildings, lecture halls, laboratories, offices for faculty, staff, and administration, dormitories, student cafeterias, sports complexes and libraries. The architects for designing a new campus may be from a different city, but the all the actual construction and supply of materials for the construction goes to the local businesses. So do the landscaping of a campus and the custodial/maintenance services for a campus. Spending on renovations and new construction by school districts and higher-education institutions increased to $43.3 billion in 2008 from $32.9 billion the year before (35th Annual Official Education Construction Report). During the year 2012, University of California system had more than 200 construction projects under way valued at $8.9 billion (Marcus, 2012).

2.2.5. Universities as consultants and advisers. Local businesses and industry rely on the university faculty to serve as advisors and consultants for their research and development as well as on-going operations. Government agencies and local business call upon the university faculty to conduct feasibility studies, quality control planning, and marketing strategies. Almost all universities run Small Business programs that not only provide training in starting new businesses but also assist the local small businesses in their needs for inventory management, personnel training, and sales and advertising.

2.2.6. Universities as incubators and technology transformers. Universities create physical space and training for start-up companies in areas such as business planning, promotion, and customer service. Incubators also house new and small companies that engage in research and innovation. Without the support of the universities, these small companies would not be able to engage in innovative research that may lead to new discoveries and developments in technology. There are nearly 150 incubators in the U.S. Nearly 75 percent of the small businesses housed in the university incubators are technology companies. Incubators along Route 128 in Boston, the Silicon Valley in California, and the Research Triangle in North Carolina have made significant contributions to technology related knowledge in the last three decades.

Creation of a technology and research incubator, *Ideon* (Idea City) by Lund University in Sweden some 20 years ago attracted large corporations such as Sony and Erikson to the city. The city has seen unprecedented growth in population and in retail sales. The university itself has grown to become the largest in Sweden.

Economic prosperity associated with the development and growth of colleges is not limited to large metropolitan cities or capitals around the world. Nor is this correlation limited to affluent areas. Such a relationship also holds true for small towns with relatively depressed economies. Two cities included in the present analysis are neither big metropolises nor thriving economies. The two cities are Lodz, in the central part of Poland, and Brownsville, a small town in the south most part of Texas. What follows is a brief description of the interrelatedness between those cities higher learning sectors and their economic performance.

3. LODZ ECONOMIC PROSPERITY AND HIGHER EDUCATION: FROM PROSPEROUS INDUSTRY TO ACADEME AND BACK AGAIN

Lodz is the third biggest city in Poland with a population of about 700 thousand. Among the biggest Polish towns, it is the poorest, with the highest unemployment. According to the newest data, in February 2016 the rate of unemployment fell to 9.9 percent, which is somewhat below the Polish average (10.3 percent), but significantly higher than the level of this indicator in the other most populated Polish cities, wherein its range extends from 2.5 to 4.6 percent (Central Statistical Office of Poland, 2016). In the Lodz region, the level of GDP per capita equals about 60 percent of the European Union average (Central Statistical Office of Poland, 2015).

Considering the standards of the Old Continent, Lodz should be acknowledged as a very young European city, as its development started merely two centuries ago, however, formally the town was established as early as 1423 AD. For the next four centuries the fact that this place had the town charter must have seemed surprising to anybody traveling through it. At the end of the 18th century, after the partitions of Poland, there were talks to withdraw its municipal rights, because in 1793 the city population was less than 200 inhabitants - mostly farmers.

The starting point of the city's noteworthy growth was marked by two factors: industrial revolution and the shifts of boundaries between European countries being a consequence of the end of the Napoleonic wars. As the outcome of the Congress of Vienna, Lodz became a part of the Congress Poland, a semi-autonomous client state associated with the Russian Empire. With the subsequent Polish uprisings, the level of autonomy, which, got smaller and smaller, however, at the very beginning of that period, was large enough to let the Polish authorities to take the independent decision of establishing industry settlements in the so-called government cities and villages. Lodz was one of them. The decision triggered a growing influx of weavers, spinners, clothiers from all over the Europe, as the authorities guaranteed all the settlers not only an allotment of land but also material needed to build a house and an access to the low-interest loans. The outcome was far beyond expectations since in the mid-19th century the city population increased to nearly 16 thousand. In the 1830s the formerly handicraft textile production began to be mechanized opening access to the economies of scale. The abolition of customs duties between the Congress Poland and Russia in 1850 gave an

additional, strong stimulus to the city's economic growth by providing an unlimited entrance to the huge and receptive Russian market. At the beginning of the WWI, Lodz population reached half a million.

In spite of such an extraordinary pace of the population growth, incomparable with any other European city at that time, the town remained underdeveloped in overall social and technical infrastructure, education in particular. The pace of growth of both primary and secondary schools was insufficient to satisfy the growing needs. As to the higher education, the first attempts to establish in Lodz a technical university that might have supported the local industry were made in the 1860s, yet, all the trials made before the WWI were cut off because of the political reasons. In that very decade, the remnants of Poland's partial independence were lost and the country incorporated to the Tsarist Russia. The Russian governors regarded the city with such a huge concentration of labor force, the majority of which was Polish, as a serious threat. As a result, they effectively curbed of all the grassroots movements that might have led towards a social or economic development of Lodz, with the elevation of the education level of its citizens at the forefront.

The first world war left the city population diminished by 25 percent, and its industry devastated by the commandeering of all the equipment that could possibly be reused for the military purposes. However, despite those challenges and pitfalls, Poland regained independence in 1918 and the previously suppressed energy to improve the city's social institutions burst at last. Lodz was the first Polish town whose local government decided to establish the general education system with a net of the newly built school buildings financed by the municipality. Moreover, in the interwar period, the first institutions of higher education were set up. Three more opened in the 1920s. These were the Education Institute (1921), Higher School of Economic and Social Sciences (1924) and the branch of the Polish Free University (1928). However, the direct impact of those institutions on the city's development is difficult to assess, as all Polish high schools were delegalized in the times of the WWII.

Again, the war triggered depopulation of Lodz – the population fell from 670,000 to about 490,000, but soon after the end of the fighting, the city started to regenerate. One of the most remarkable growth was the academic life. Two weeks after the end of the hostilities in Europe, the University of Lodz and the Lodz University of Technology were founded. Around the same time, the Music Academy, the Academy of Fine Art and two institutions closely linked with the fledging movie industry, i.e. the film and the acting public academies were initiated. In the late 1950s, those two were bound together to the National Higher School of Film, Television and Theatre. To complement the picture of thriving academe, two medical high schools were added: the Medical Academy (founded in 1949) and the Military Medical Academy (set up in 1958). Lodz became the fifth academic center of Poland, and the University of Lodz became the fourth largest institution of higher education in term of student's enrollment.

Yet, during the Polish People's Republic, (1945-1989) the potential of the Lodz's academe to contribute to economic development of the city was not fully realized. Several attempts were made to forge the links between the universities and industry, e.g., the foundation of the Textile Faculty of the Lodz University of Technology, the Faculty of

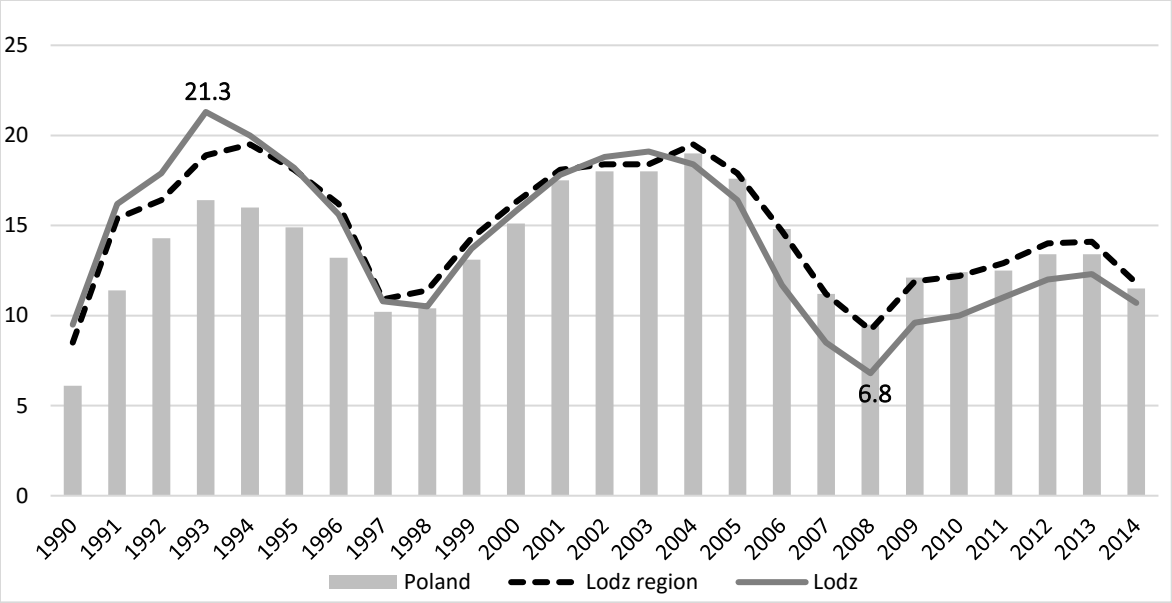
Textile Art and Fashion Design of the Academy of Fine Art with the Chair of Scenography and the establishment of the Film School. Nonetheless, the nature of the socialistic economic order significantly diminished the benefits that may have stemmed from such collaborations. Whereas some successes may be easily pointed with regard to the cinematic arts with three Academy Award's winners alumni of the Lodz Film School, ranked second by the *Hollywood Reporter* ranking of the Film Academe outside the U.S. (Appelo, 2014), there were hardly any positive outcomes when it came to the production and economic performance. One possible reason was that many of the new technological solutions created by the theorists and academicians remained in their cabinets not implemented or put into practice by the bureaucratic machine of the centrally planned economy.

During the times of the so-called "real socialism", the main direct product of the growing tertiary education system was to produce better-educated employees. It should have resulted in the increase in the labor productivity at least; yet, the vestigial interrelatedness between the level of salary and the quality and efficiency of work considerably enfeebled such an influence.

Undeniably, the turning point in the relationship between the academe and the industry in Lodz was the collapse of the Polish socioeconomic system at the turn of the 1980s and 1990s. In all the socialist countries, the beginning of the process of transition was hard-fought by the bigger or smaller transitional recession. In Poland, the recession was the shortest and the slump in the level of production was the smallest in comparison to the other ex-Eastern Block members. It spanned only two years and the decline in GDP was about 7 percent (The World Bank, 2002). However, some regions of Poland were touched more severely; unfortunately, Lodz belonged in this group. Trade liberalization, which exerted an overall positive effect on the county's general economic performance, resulted in the almost complete destruction of the textile industry in the Lodz region that had been the engine of the city development for more than one and a half of a century. Too big and ineffective textile factories failed in the face of the global competition, mostly by the Chinese and other Far-Eastern states. Therefore, in Lodz, the outcome of the transition was the steep recession with an increase in the rate of unemployment from 0.3 percent at the beginning of 1990 to 21.3 percent in December 1993 (see: **Fig. 1** below).

The sharp deterioration of the standard of living triggered an outflow of the city inhabitants. The population, which started to decline in the mid-1980s, shrank from 850,000 to 700,000 over the next three decades. The lack of mineral resources and rather poor arable lands in the Lodz region made the socioeconomic conditions of the city significantly worse than the other heavily populated Polish towns; the only asset, that remained was cheap, yet relatively unskilled, human capital.

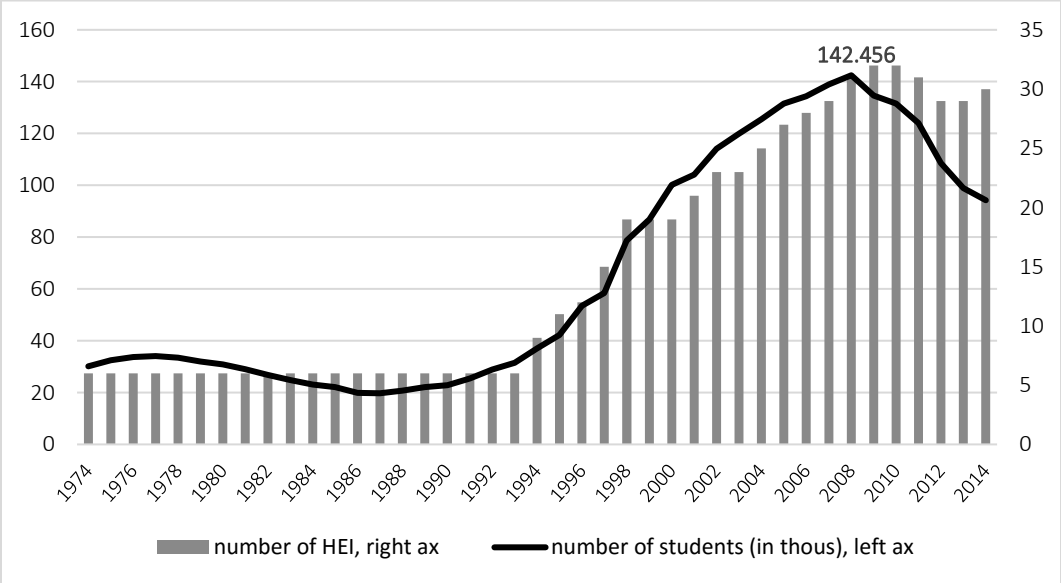
Fig. 1. The Rate of Unemployment in Poland, Lodz region, and Lodz, 1990-2014.



Source: Central Statistical Office of Poland Yearbooks of Regions of Poland 1991-2015.

Such a critical situation for many worked as a strong stimulus for improving their skills and abilities. As a result, the one sector that not only remained untouched by the recession but also started to flourish in its consequence was education, with the HEI in particular. The growing demand from the people of all ages wanting to improve their qualifications and by so doing to increase their chances to find a job brought about the increasing number of students. This tendency was accompanied by the growth in the number of HEI. The data showing those phenomena are presented in the **Fig. 2** below.

Fig. 2. Number of students (in thousands) and Number of HEI in Lodz region, 1974-2014.



Source: Central Statistical Office of Poland Yearbooks 1975-2015.

The processes resulted in a considerable growth in the net enrollment ratio in tertiary education, which rose from 9.8 in 1990 to 40.8 in 2010 (Central Statistical Office of Poland, 2011).

In spite of the little short-run effect of those tendencies on the Lodz economic performance, its long-run consequence is easily noticeable. Over the two decades the structure of the city economy was profoundly changed, and the slow recovery occurred mainly because of the three new branches: Business Process Outsourcing (BPO), IT and domestic electrical appliances (the biggest investors operating in the city are: Dell, Bosch/Siemens, Merloni Indesit, Gillette, ABB, Samsung Electronics, Infosys BPO, Accenture and CityBank). It is remarkable all of these businesses drew their highly skilled labor force from the Lodz academic center.

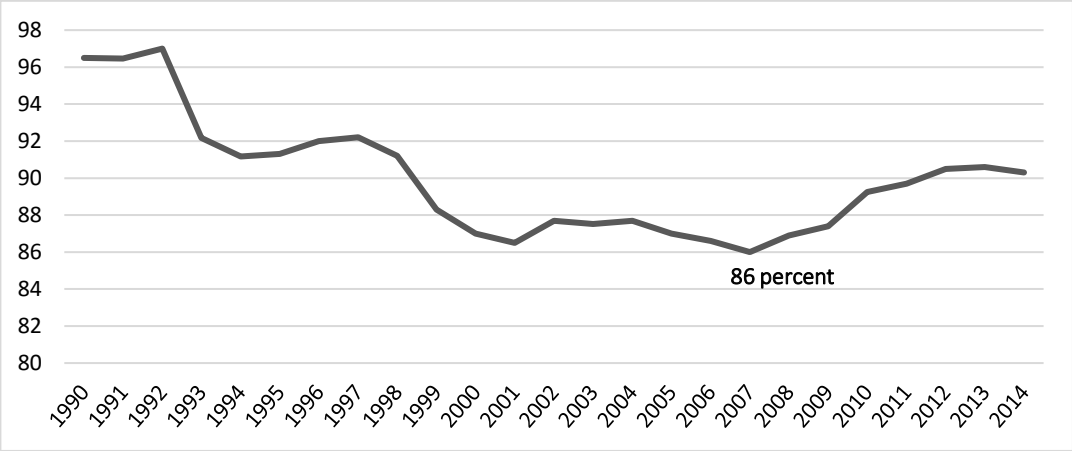
The attempts to revitalize the city led to the establishment of the Lodz Special Economic Zone (LSEZ) created in the Lodz region in 1997. Similar to the practices of the 19th century, business entities that are willing to invest in the LSEZ receive public support and tax exemptions.

Among the region's main advantages are its well-educated, relatively inexpensive employees, and the cooperation from HEI and vocational schools (Polish Information and Foreign Investment Agency, 2016). The last steps made in this direction was the foundation of the Lifelong Learning Centre of New Technologies (2013) offering a variety of courses for the adult population at the post-secondary level, and the co-foundation by the LSEZ of the Lodz Educational Cluster (2015) aiming at the further adjustment of curricula of the Lodz HEI to the business needs. According to the newest data (Jan 15, 2016) the LSEZ functioning resulted in the creation of about 33 thousand jobs and investments reaching USD 3.4 billion (Lodz Special Economic Zone portal, March 2016).

As seen in **Fig. 1**, the economy of the city began to improve at the beginning of the new millennium. The rate of unemployment, which in the first half of the 1990s was not only above the Polish but also above the Lodz region average, started to fall since 2004. The changes in the ratio of the average monthly gross wages and salaries in Lodz region in comparison to the rest of Poland illustrate the same, positive tendency (see: **Fig. 3** below).

At the beginning of the transition, the level of the average monthly gross wages and salaries in Lodz was comparable to the Polish average. Yet, the transitional recession, which affected the region's economy with a greater force, caused significant worsening of the city economic performance. The ratio reached its bottom in 2007 and the slow improvement is observable till the present day. Considering the dramatic situation of Lodz's economy in the 1990s, the role of academe in the city's economic recovery would be difficult to contest. Those valuable experiences have borne a worth mentioning fruit, i.e. launching of the new interdisciplinary program of master studies on the revitalization of the cities established as a joint venture of the municipality and the two biggest Lodz HEIs, namely the University of Lodz and the Lodz University of Technology. Such a program, being unique in the Central Eastern European Counties, let draw on the theoretical and practical experience gained over the last decades of the Lodz region's uneasy economic history.

Fig. 3. The ratio of average monthly gross wages and salaries in Lodz region in comparison to their level in Poland



Source: Central Statistical Office of Poland Yearbooks 1991-2015.

4. College and economic prosperity in Brownsville, Texas

4.1. Cameron County

Along with four other counties, Cameron County is among the five poorest counties in the state of Texas. All five of these counties are located in the lower Rio Grande Valley. The two Rio Grande Valley metropolitan areas have finished no. 1 (McAllen-Edinburg-Mission) and 2 (Brownsville-Harlingen) on a list of "America's Poorest Cities" – or, 365th and 366th on a list of "America's Richest Cities" (Cohen, 2013). Hispanic-Americans account for nearly 95 percent of the population in the county. Unemployment in the region is close to 11.7 percent. In 2014, the per capita income for the U.S. was $30,176. For Cameron County, the per capita income was $25,211. However, the per capita figures for the Hispanic-American population are much lower at $17,699. These data are presented in **Fig. 4**.

According to 2014 figures (U.S. Census Bureau), 35 percent of the county's population lived in poverty. Since 2006, the retail trend has remained unchanged in Cameron County. It was $3.29 billion for the year 2006, and $3.24 billion for the year 2010.

In 1926, The Junior College of Rio Grande Valley was established. In 1931, it changed its name to Brownsville Junior College, and in 1950 to Texas Southmost College. In the mid-1970s, it joined with a regional university and began offering coursework leading to a baccalaureate degree. Enrollment figures and city's population growth are presented in **Fig. 5**.

Fig. 4. Average Per Capita Income (in thousand US$) in the U.S. and Brownsville

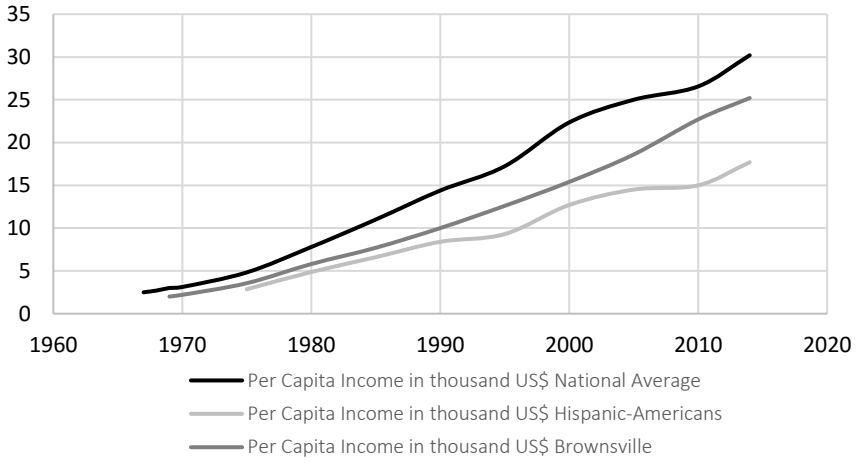
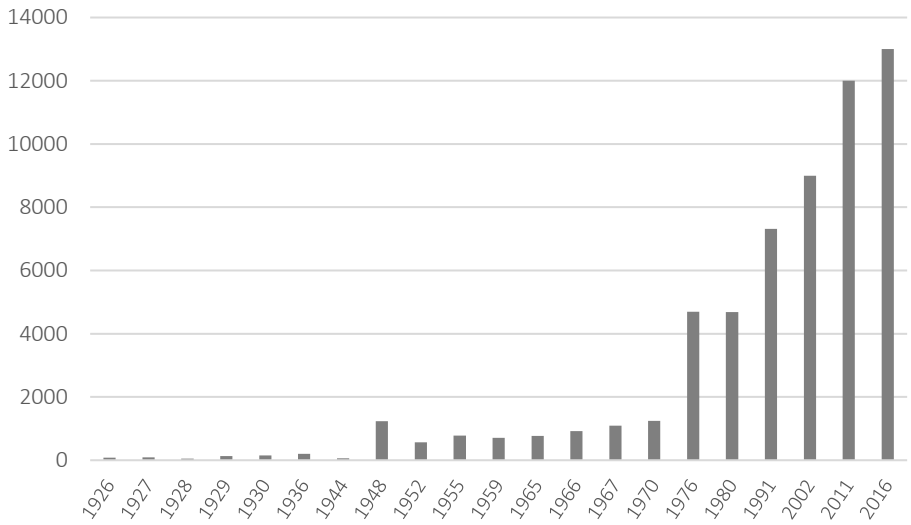


Fig. 5. The growth in students' enrollment to the Brownsville HEI

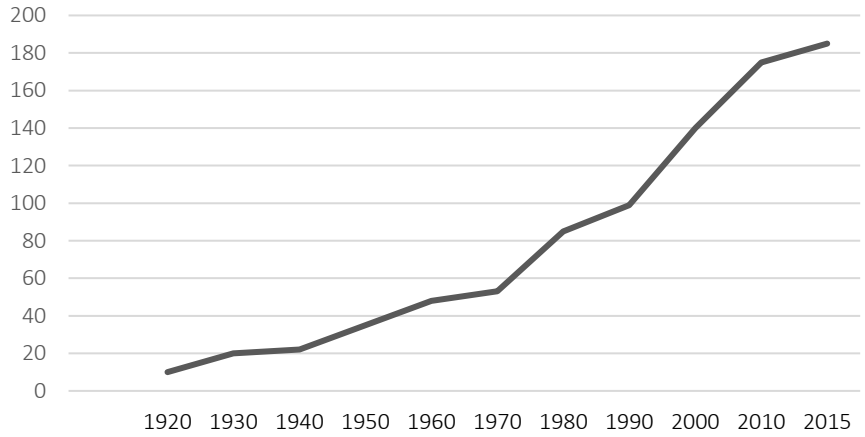


Student enrollment rose steadily until the beginning of the WWII. During the war years, the college lost half of its students. However, by 1948, the enrollment reached 1250 students. In the college joined with Pan American University, a university located in Edinburg, a city about 65 miles northeast of Brownsville. As a result of this partnership, the students in Brownsville were able to earn a 4-year degree. In 1991, The Texas University System established a university in Brownsville and the college merged with The University of Texas-Brownsville. For the next 20 years, it remained in the partnership as UTB-TSC. By 1991, the enrollment reached 10,000. In the year 2010, the enrollment exceeded 17000. Since 2011, the college has cut its ties with the university and operates as a 2-year college. The university in Brownsville is merged with Pan American

University under a new name – The University of Texas – Rio Grande valley. At the time of this writing (2016), the junior college has an enrollment of nearly 3000 students and UTRGV in Brownsville has slightly over 8000 students.

In 1920, the population of Brownsville was 11,791. In 2015, it reached 185,000. Population growth is presented in **Fig. 6**.

Fig. 6. Population of Brownsville, 1920-2015 (in thousands)



As the college grew, so did the city and the need for transportation and infrastructure. The port of Brownsville opened in 1936. In 1929, Pan American World Airlines (Pan Am) began its service from Brownsville to Mexico City. Soon, Braniff International Airways and Eastern Air Lines joined in and connected Brownsville to the rest of the U.S. cities through Houston and Dallas. Although Pan Am, Braniff, and Eastern are extinct, American Airlines and United Airlines continue to service Brownsville. The two airlines carried more than 183,000 passengers in 2014.

Because of the university, the city of Brownsville was able to attract Space Exploration Technologies Corporation (SpaceX), an American aerospace manufacturer and space transport services company with its headquarters in, Hawthorne, California, to develop a new launch facility in Brownsville. The launch facility will bring $85 million to the city. SpaceX will generate 500 jobs by the year 2024. These jobs will translate into $51 million in annual salaries. The city and the university have agreed to build a radio frequency lab (STARGATE) to provide the students and faculty access to RF technologies used in spaceflight operations and spacecraft tracking. The lab has received several startup grants, among these, a $1.2 million from the US Economic Development Administration.

As of December 2015, the combined workforce for the community college and the university in Brownsville exceeds 1750. For the academic year 2016-2017, the annual budget for the college (TSC) is $42.5 million. In its last year of operation (2012), the University of Texas-Brownsville had a budget of $171 million.

When one looks at the other cities along the river Rio Grande and in the southern part of the valley it became evident that the cities that took the initiatives to launch community colleges (Brownsville, Harlingen, McAllen, and Edinburg) have fared much better than

the ones that neglected higher education. The colleges and universities that have responded to the needs of their communities and build bridges between the community and the academe have received stronger support from the city officials and local businesses and industries.

5. Closing Remarks

Both the theoretical investigations and the analysis of the two examples suggest that for an economically challenged city, a community college may be a sound investment. A skilled workforce attracts new industries and jobs; an increase in employment brings more tax revenue. People with jobs buy more, i.e. an increase in sales tax revenue. An area where existing businesses thrive attracts new businesses - leading to more jobs, a higher demand for housing, and more construction. A growing city requires training, retraining, and upgrading of skills of the workforce, which in turn leads to the development of new courses, vocational training programs, and consulting for the college faculty. As one of the discussed cases shows, the developed higher education sector my work as a safety precaution soothing the tension of economic slumps. The relationship between communities and their colleges is bi-directional. When one does well, the other prospers. The situation is a true reminder of the old saying: *A rising tide lifts all boats.*

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