



**MEASURING EFFICIENCY OF PHARMACEUTICAL COMPANIES OF THE
REPUBLIC OF UZBEKISTAN**

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Annotation: This paper presents a Data Envelopment analysis (DEA) for measuring efficiency of pharmaceutical companies. Letting each of fifteen companies in each year be a separate decision-making unit, and utilizing three inputs and one output, we measure annual efficiency values, slacks and target units of Uzbek local pharmaceutical companies for decade 2010-2019 as defined by the period of variables.

Keywords: technical efficiency, Data envelopment analysis, slacks, target values, Uzbek pharmaceutical companies.

INTRODUCTION

Since the first years of independence, a strategy to reduce the state's share of the economy and privatize state property has been implemented in Uzbekistan. Such systems are largely intended to create a competitive market for small businesses and private investors and to build companies producing export goods. One of the ways to achieve these goals is to attract experience, investment and innovations from overseas, helping to establish new product manufacturing and becoming the foundation for developing domestic manufacturing capacity. This was the foundation for the financial industry in Uzbekistan to be developed. Developing the country's own medications with full use of local plant, organic, mineral and synthetic raw materials is an essential part of the national pharmaceutical development plan. The industry has therefore formed close relations with the Academy of Sciences and associated research institutions [2].

MATERIALS AND METHODS

Uzbekistan is a promising market with tremendous growth potential for pharmaceutical companies, with its geographic location at the heart of Central Asia, rapidly growing economy and population. The pharmaceutical industry in Uzbekistan is growing and is expected to continue to increase due to rapid economic development and increasing population demand (Figure 1). According to the "Uzinfoinvest" state agency, market potential is currently projected at USD



650-700 million with annual per capita consumption rate of just USD 22.5 in 2015. Other reports forecast the drug industry in Uzbekistan at USD 0.9-1 billion and expect a compound annual growth rate of 20-25% in the coming 3 years. Regional experts have more ambitious projections that industry potential will double by 2020 and hit USD 1.5 billion. Some of this development would stem from continued expenditure and expanded healthcare spending by the government. In 2015, 4% of GDP and 14% of Uzbekistan's budget went to the healthcare industry. In addition, 2016 has been proclaimed "Year of Safe Mother and Child" in Uzbekistan with the implementation of USD 2.6 billion State program to bring out wide-scale social activities and boost the national health care system [2].

RESULTS AND DISCUSSION

According to the Ministry of Healthcare's Licensing Commission, as of December 2015, Uzbekistan has more than 7,500 dispensaries. They vary in size, efficiency, turnover and service quality. Some of them are truly modern and a large retail chain has been created. High-quality drugstores with a variety of products are mostly concentrated in the capital-Tashkent with 3.5 million residents and local administrative centers. Many national modern drugstore chains are based in Tashkent and provinces. Regional trading companies who purchase pharmaceuticals either from overseas and regional suppliers have their own retail chains in some instances. JSC "DoriDarmon" operates the largest pool of 1300 drugstores in Uzbekistan. Tashkent's main drugstore chains include "Asklepiy," "Medicare," "Propharma," "Technopharm," "Oximed," "Grand Pharm," "Novo Pharma," "Jurabek" [5].

Over the past few years, Uzbekistan's government has taken measures to grow national pharmaceutical industry and incremental replacement of imports. About USD 600 million was invested in the national pharmaceutical sector between 2010 and 2015. Uzbek government is trying to improve local manufacturing by granting manufacturing firms tax incentives and low interest loans. Actually, around 1800 varieties of medicines are manufactured by 121 local companies. In 2015, their overall production cost is reported at USD 230 million. That's the Uzbek market's approximately 20-22 percent price share⁵. Local companies initiated the development of 65 new medicines in 2015. Currently 26 joint ventures are active in Uzbekistan's drug industry with shareholders from Great Britain, Turkey, India, Germany, Japan, Poland, France, Russia, the UAE. Among them the most popular are "Novopharma Plus," "Nika





Pharm," "DentaFill Plus," "Nobel Pharmsanoat," "Remedy group," "Jurabek Laboratories."

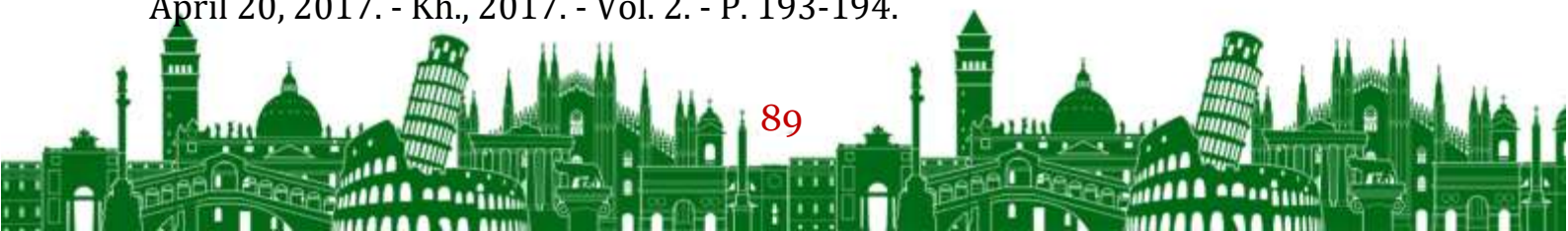
Over the past few years, Uzbekistan's government has taken radical action to combat counterfeiting, smuggling, and illicit pharmaceutical trade. A major action in this path was the acceptance of amendments to current legislation in August 2009, which since then offers for up to 15 years of imprisonment for producers, smugglers and sellers of counterfeit pharmaceutical products. Falsified drug sales, though, remain a problem that needs long-standing and continuing initiatives and improvements in new methods and facilities to identify fake products.

CONCLUSION

Uzbekistan is one of the Commonwealth of Independent States (CIS)'s most promising pharmaceutical markets. Currently, more than 130 firms are involved in the pharmaceutical industry, selling more than one-third of all prescription drugs on the market, compared to the early 1990s when there were only three such businesses. Twenty years is a long time to build your own company or corporation. This time, though, is very limited when you build an industry with a diversified shipping, interaction and service network that was built using logistics. The new Republic had to establish a pharmaceutical industry practically from scratch over the years of independence, as well as lay the foundation for the production of highly skilled human capital. On the fast-growing market, a number of key Western drug companies are still missing, obviously there is tremendous opportunity to launch new products, significant investment reach, and a demand for nearly every product. Uzbek market's main advantages are generally low labor costs compared to neighboring Kazakhstan, equivalent or even less informal trade rates, relatively good infrastructure, fast-growing economy, diverse and professional young people. National drug use is marked by similar patterns in many CIS drug businesses: relatively low average cost per medication pack; the market is controlled by international producers in terms of value, with a rather small proportion of domestic producers; the INN and trade names Top lists are still defined by goods with a long record of use..

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