

Letter from the Director

Economía Teoría y Práctica is on the razor's edge, though not necessarily in the terms of the W. Somerset Maugham novel. It is due instead to the budgetary adjustments in various scientific and technological activities resulting from the health and economic crisis triggered by the global COVID-19 pandemic. The funds earmarked for universities reflect a real cutback, associated with the low level of economic growth and the countless backlogs that have accumulated historically, to the detriment of the wellbeing of the population. This situation is so severe that it forces us to think about new scenarios; we must undertake construction of a new institutional environment that encourages social and productive innovation with theoretical and empirical underpinnings.

We are grateful to the university president, Eduardo Peñaloza Castro, and general secretary, José Antonio de los Reyes Heredia, for their willingness to ensure that this editorial project has sufficient funds to stay afloat this year. With the phrase "Think equal, build smart, innovate for change," spoken at United Nations headquarters by Phumzile Mlambo-Ngcuka on International Women's Day in March 2019, we express our desire for continued consideration of the magazine within the framework of numerous activities in higher education budgeted for expanding scientific and technological knowledge.

Several studies confirm the slow and erratic economic growth and inequitable social development in the countries of Latin America when compared with that recorded in Southeast Asian nations. The different dynamics of economic and social development in these two regions are, to a great extent, associated with differentials in technological and innovation capabilities that these countries have built up and the efforts of the various agents and institutions to create national and sectorial systems for innovation.

Evaluating certain pro-innovation initiatives in Latin America is advisable in order to identify strategies capable of increasing the forward-thinking trend. So, in this issue's first article, "Dinámica de transición y distribución de la innovación en los países de América Latina: 2006-2017", Luis Gutiérrez Flores, Alba Verónica Méndez Delgado and Jonathan Flores Pérez, researchers at the Coahuila Autonomous University Socioeconomic Research Center, investigate

how the innovation process takes place in countries in Latin America and specify whether it is convergent or divergent. Following a theoretical review and outlining the innovation experience in the region's countries, they set out to identify distribution and the dynamic of transition to innovation by means of Markov chains and Kernel density functions, non-parametric techniques suitable to studying regional inequalities. The findings of the study show major innovation heterogeneity in the region and are extremely interesting for thinking about new dynamics inclined toward a convergent tendency that produces results in terms of economic growth and wellbeing for the region's population.

Within the context of studies on science, technology and innovation, particularly those aimed at biological resources in Latin America and using countries in several regions as a reference, comes the article "Transición de América Latina hacia la bioeconomía. Una comparación con países de la OCDE, Unión Europea y BRICS", by José Ignacio Ponce Sánchez and Graciela Carrillo González, at the Metropolitana Autonomous University, Xochimilco. The pair conceives of their study among the alternatives that could support undertaking new technologies for the use of renewable solar energies through vegetable photosynthesis. The idea is to surmount dependence on fossil fuels within the framework of a knowledge-based bioeconomy focus (BBC). The authors characterize the National Innovation Systems (SNI, Spanish initials) in Latin American countries that enable identifying factors that could contribute to the construction of scientific, technological and innovation capabilities for producing, utilizing and conserving biological resources that generate energy. To prove the hypothesis that the major economies in the Latin American region would be able to adopt bioeconomy as their SNI become strengthened and as the sectorial system develops innovation with natural resources, the authors carry out a multivariate cluster analysis with 32 variables (socioeconomic, environmental and scientific-technological), using countries in the selected regions for comparison. Interesting results, especially now that discussion in Mexico centers on what technologies will persist or which ones will be renewed.

One aspect that becomes central for innovation development is the role of entrepreneurs in an institutional innovation-catalyzing environment. In the article "The Dark Side of Entrepreneurship: An Exploratory Conceptual Approach", Oscar Javier Montiel, of Ciudad Juárez Autonomous University, Mark Clark, at Houston Baptist University, and María Guadalupe Calderón, visiting professor at the National Autonomous University of Mexico, take a multidisciplinary approach to identifying the elements that comprise the dark side of entrepreneurship through a specialized literature review. The characterization of the phenomenon of interactions between entrepreneurial behavior and context lead the authors to suggest a conceptualization based on an exploration of

various analyses and studies. Why is it important to study power relations, the power of corporations and power asymmetries? What is the role of cultural processes within organizations? Why might the relationships of businesspeople with their surroundings be incomplete and information partial; what conflicts of interest are produced between individual actors and collective actions? Does the entrepreneur's personality have any relevance? How could businesspeople be classified? Can institutional public policies influence the conformation of entrepreneurs and with a social commitment? These are some of the numerous issues posed by the study, with a conceptual focus that can lead to new questions when trying to understand entrepreneurial agents in various dimensions, be it on the dark or light side.

For quality of life to improve, technological progress is essential in every economic sector. What can be said about the transportation system, the means of communication without whose improvement it would be impossible to reduce the time invested in moving around, achieve greater production efficiency and cut down on environmental pollution? América Ivonne Zamora-Torres, of San Nicolás de Hidalgo Michoacana University, addresses the topic in her article “Índice de Malmquist y cambio tecnológico del sistema de transporte carretero de carga internacional.” The concern of the author focuses on investigating whether international cargo highway transportation increased productivity during the 2010-2018 period. The research suggests that this type of transportation bound for external trade by state has increased its productivity associated with relative efficiency due to technological change. To confirm her hypothesis, the author calculates the Malmquist productivity index based on input and the DEA model, to identify relative efficiencies, global technique, technique and scale. The results of the empirical study in several Mexican states are heterogeneous. Some showed major increases in productivity, others moderate and others none. The study findings lead to intriguing reflections.

On a different, yet crucially important, topic in the realm of revenue available to the government to promote innovation and economic growth in Mexico is the article “Abordajes metodológicos y empíricos de la progresividad tributaria: una aplicación para el sistema fiscal de México”, by Linda Irene Llamas Rembaño and Luis Huesca Reynoso, of the Sonora Center for Research on Diet and Development (CIAD), and Luis Gutiérrez Flores, of the Coahuila Autonomous University Center for Socioeconomic Research. In the context of the international discussion regarding tax progressivity and its connections to inequitable income distribution, the three researchers highlight methodological aspects based on different theoretical focuses and propose a progressivity measure of the Mexican fiscal system. The empirical exercise is applied for the years 2006 and 2018. This contribution offers robust elements for designers of a fiscal

policy headed toward equity and efficiency that contributes to reducing inequality and poverty in the country.

Alfonso Mendoza Velázquez and Mónica Rubio García, of the Center for Research and Economic Intelligence, share their article “Entorno fiscal federal y eficiencia de los gobiernos locales en México: el impacto de la crisis de 2008”. Intended to contribute with second generation fiscal federalism models, the authors set out, on the one hand, to estimate financial administration productivity in the states in the context of federal fiscal reinforcement in Mexico in 2008 and the 2010 fiscal reform, and on the other, to determine the impact of the federal fiscal environment on the efficiency of local governments through conditioned and unconditioned federal transfers. To prove that an efficient and productive financial administration must be capable of reaching greater levels of economic development for its population, the Malmquist Index is calculated, including indicators of financial equilibrium and investment expenditure of state governments for consumables and, life expectancy, average level of education and per capita GDP for products. Then Arellano and Bond's dynamic panel model (1991) is used to evaluate the impact of local fiscal revenue, as well, also, as federal conditioned and unconditioned transfers on the productivity, efficiency and technical progress of local public administrations.

What happens with local governments when public spending increases much more when they are financed by intergovernmental transfers than when they come from local tax collection? Far from improving tax collection, why do state governments resort to indebtedness, and what are its effects? This is the phenomenon addressed by Alberto Damián Flores Araujo and Hada Melissa Sáenz Vela, of Coahuila Autonomous University and Isaac Sánchez-Juárez, of the Ciudad Juárez Autonomous University, in the article “El efecto *flypaper* y los determinantes del gasto público estatal en México 1993-2016”. A very interesting study for analyzing changes in public spending by states faced with variations in federal transfers, as well as to reflect on the fiscal decentralization system for governmental transfers and the federal fiscal pact in force.

In the financial realm, Roberto J. Santillán-Salgado and Luis Jacob Escobar, of the Technological Institute of Monterrey, and Francisco López-Herrera, of the UNAM School of Accounting and Administration, are interested in comparing the performance of different strategies of coverage with index futures contracts on the Mexican Stock Exchange (IPC) negotiated on the Mexican Derivatives Exchange (MexDer). The article “Optimal Hedge Ratios for the Mexican Stock Market Index Futures Contract: A Multivariate GARCH Approach” reports on the evaluation of the strategies carried out daily between 30 December 1999 and 30 December 2016, identifying which is most effective in reducing volatility. Among the analysis strategies, based on a constant correlation bivariate asymmetrical

GARCH model, are: i) no coverage; ii) “naive” reason for coverage; iii) reason for constant coverage and, iv) reason for dynamic coverage. Furthermore, given the response to volatility of the four strategies, risk measures are included: a) value at risk, b) expected deficit and c) LAQ. The empirical study provides interesting results that show the complexity of financial markets in Mexico and lead to re-thinking institutional modernization of the sector.

The article “Reflexiones e interrogantes sobre el impacto del COVID-19 en la dinámica futura de las cadenas globales de valor” is by Florencia Barletta of General Sarmiento University, Buenos Aires, Argentina; Adolfo Nemirovsky, of Latipnet, United States; Gabriel Nemirovsky, of the University of York, United Kingdom, and Gabriel Yoguel, of UNGS-CIECTI. The analysis of COVID-19 questions what is to become of the global value chains (GVC). The importance and complexity of GVC lie in the market extension they have attained, the global division of labor developed and the relative production efficiency achieved jointly and in nodes. Thus the concern is to hypothesize the changes this complex system will have in all its interrelations given the effects el COVID-19. Timely and motivating are these reflections in which changes provoked by the circumstances demand extremely profound and scientifically rigorous analyses.

A book review by Gerardo Leyva and Valentín Solís of *Modelos Económicos de las Regiones de México*, coordinated by Alejandro Dávila, wraps up issue 53 of *Economía Teoría y Práctica*. We trust that each article may contribute to increasing our understanding while stimulating further lines of questioning for new research projects.

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