

Higher Education, Higher Salaries? A Case Applied to Graduates in Economics

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Abstract

This document aims to contribute to the understanding of the determinants for choosing the Economics career in Bolivia, as well as the impact that postgraduate education has on the salary levels of graduates in this field. Regarding the latter aspect, it seeks to test whether the number of years of study following the undergraduate degree of an economist determines a higher salary level and whether postgraduate studies serve as a signal of differentiation in the labour market. To achieve the objectives outlined in this document, various linear probability econometric models are employed, constructed from the results of a survey conducted in 2024 with 79 graduates and 45 students from the Economics program at the Universidad Católica Boliviana “San Pablo.” The results suggest that the choice of the Economics career is more likely influenced by close individuals rather than by the information provided by the University about the content of the program. Furthermore, a greater number of years of study after obtaining an undergraduate degree decreases the likelihood of achieving higher salary returns, indicating signs of adverse selection within the labour market for economists in Bolivia.

Keywords: Returns To Education, Economic Education, Adverse Selection, Differentiation.

JEL Classification: A22, A23, I26.

Introduction

The academic training of economists and their performance in the labour market have been subjects of study for several decades. Research has ranged from evaluating the line of thought that should guide the training of economists (Cue Mancera, 2003) to testing the impact that postgraduate studies have on salary levels (Nuñez, 2005).

Considering that the work of economists impacts resource allocation and, consequently, decisions regarding the production and distribution of goods and services, it becomes relevant to evaluate what analytical, technical, and critical skills are provided during their initial (undergraduate) training as well as in postgraduate education.

Accompanying this idea is the fact that in recent decades there has been a decline in the enrolment of new students choosing to pursue a degree in Economics, raising questions about the incentives and determinants that lead individuals to choose this field at both undergraduate and postgraduate levels.

Based on these considerations, this document aims to identify the variables that explain the choice of the Economics career at the undergraduate level and to determine whether the years of education obtained during postgraduate training constitute a differentiating element in the labour market, such that they can be considered a signal of skill when being selected for specific positions.

To this end, based on the results of a survey conducted in 2024 with 79 graduates and 45 students from the Economics program at the Universidad Católica Boliviana “San Pablo”, several linear probability econometric models are constructed. The primary goal is to determine which variables define the choice of the Economics career and, on the other hand, to assess the returns obtained based on the number of years of postgraduate study, differentiating by diploma, speciality, master's degree, and doctorate.

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The document is structured as follows: in addition to this introduction, the second section presents a theoretical review supporting the development of this document; in the third section, results regarding the variables that determine the choice of an Economics career are presented; in the fourth section, results concerning the returns for those who pursue postgraduate courses based on whether they completed a diploma, specialty, master's degree, or doctorate are presented. Finally, the last section presents conclusions drawn from this study.

Related Literature

The academic training of economists, as well as the outcomes these professionals achieve in the labour market, has been the subject of extensive scientific research. This research addresses not only the analysis of the curriculum in their training but also the results regarding salary levels that can be obtained as a result of a greater number of years of postgraduate study once they enter the labour market. Studies such as those by Colander and Klamer (1987) highlight the importance of investigating the training process of economists and understanding students' perceptions of their education. This study focuses on identifying the motivations students have while pursuing their undergraduate studies. To develop their document, the authors conducted a survey to gather information from first to fifth-year students in six prestigious graduate programs in the United States, including the University of Chicago. They found that students mentioned a lack of examples of applied policy in their early years of training, which diverts their interest toward a more technical approach.

Similarly, Lora and Ñopo (2009) present a comparative analysis of economist training across five Latin American countries (Argentina, Bolivia, Chile, Colombia, and Mexico), considering aspects such as curriculum, textbooks, faculty dedication, teaching methods, and the use of technologies and computational tools. This study is based on surveys of Economics students, which design a socioeconomic profile and investigate their attitudes and opinions. A key finding from this study is the lack of connection between students' expectations regarding their demands in the labour market and the actual demand for economists across employment sectors. Additionally, Espinoza, Machicado, and Makhoul (2009) provide an analysis of undergraduate economist training in Bolivia and Chile while considering some aspects related to postgraduate education. Regarding postgraduate studies, the document shows that the Chilean labour market views postgraduate education as a signal of skill, whereas in Bolivia, studies conducted after completing an undergraduate degree are more likely seen as a requirement for entering the labour market rather than as a signal of skill.

In Cue Mancera (2003), a reflection is presented on the use of original materials covered in basic economic theory courses, highlighting Samuelson's contributions in this regard, with a clear inclination to evaluate what is taught or what should be taught to economists. This document warns about the trade-off between using original articles and/or essays that require students to "decipher" scenarios without necessarily relying on didactic examples, versus the use of textbooks that make seminal works more accessible but risk omitting or misinterpreting fundamental ideas from an original work.

Beyond the training of economists at the undergraduate level, the public debate also includes whether postgraduate studies can serve as a signal that allows those undertaking such courses to be differentiated in the market. In this line, Akerlof (1970) uses the used car market as an example to illustrate how information asymmetry, manifested as adverse selection, can lead to inefficient outcomes in the market. To mitigate the presence of adverse selection, the formation of good signals is crucial for the efficient functioning of any market, in this case, education, as they enable informed decision-making and help prevent low-quality products from dominating the market. Akerlof's contribution emphasizes that when adequate mechanisms (signals) to convey information about quality are lacking, markets can collapse and suffer significant adverse effects that may lead to a reduction in the quality of traded goods.

Reinforcing Akerlof's idea (1970), Spence (1973) specifically introduces the concept of signalling in the labour market, where individuals use their years of education as signals to differentiate themselves in an environment characterized by asymmetric information and specifically adverse selection. In this context,

employers, lacking complete information about the skills or productivity of potential hires, seek signals that provide insight into their abilities. If the signal is strong, a separating equilibrium is achieved, allowing employers to distinguish between different types of candidates based on their education levels. In this equilibrium, highly skilled workers choose to obtain more education to signal their capability, while those with lower skills opt not to.

Linked to the concept of additional years of study as a signal of skill and the salary that should accompany it is Mincer's work (1974), which is fundamental for understanding the relationship between education, work experience, and income. In his study, Mincer focuses on how education influences individuals' earnings. This model, known as Mincer's Income Function, shows that each additional year of education translates into a significant increase in income. This return varies by educational level, generally being higher for tertiary education compared to primary or secondary education. The model also indicates that experience positively affects earnings but with diminishing returns as time in the labour market increases. This means that earnings for each additional year of experience tend to decrease over time.

The contributions of previous research, applied to the field of Economics education, can be found in works such as those by Nuñez & Otero (2005), who seek to determine whether the choice of a specialization between economics or business constitutes a signal of skill in the labour market that results in different salary levels. To this end, they consider a signalling model with incomplete information, using the average grade of the joint curriculum as a measure of graduates' skill. The model also considers students' preferences for a specific mention, the costs in study hours, and the effort required when choosing a particular mention, as well as the expected salary level. Regarding signalling, it is shown that graduates in Economics earn more on average in the business labour field, demonstrating that choosing this specialization is indeed considered a signal of greater skill. However, once skill is revealed through experience, business graduates earn more on average in this field. In Colander (2005), data from seven high-level graduate programs in the United States are obtained through a survey conducted between 2001 and 2003, aimed at analysing the evolution and observing the effect of changes in graduate programs on students' perceptions of their training. Depending on student responses, the characteristics of professionals trained at the postgraduate level can be reflected in students' opinions on aspects involving areas they consider related to economics, preferred fields of study within economics, skills necessary for success in the profession, the relevance of using different economic policies, and the validity of assumptions made in the profession. This study highlights a shift in students' interest from solely understanding technical and theoretical aspects to moving towards a more creative and empirical field. The literature review confirms that an important topic to consider is the analysis of current economist training due to the impact this profession has within societies, as well as identifying the factors that lead to choosing this career. Accompanying this is the importance of evaluating whether education after undergraduate studies can serve as a signal that differentiates economists' skills in the labour market and results in different salary returns. To address these themes, a brief diagnosis of enrolment trends in the Bolivian University System (SUB) is presented in the following section, with special emphasis on both undergraduate and postgraduate levels in the field of Economic Sciences, including the Economics career.

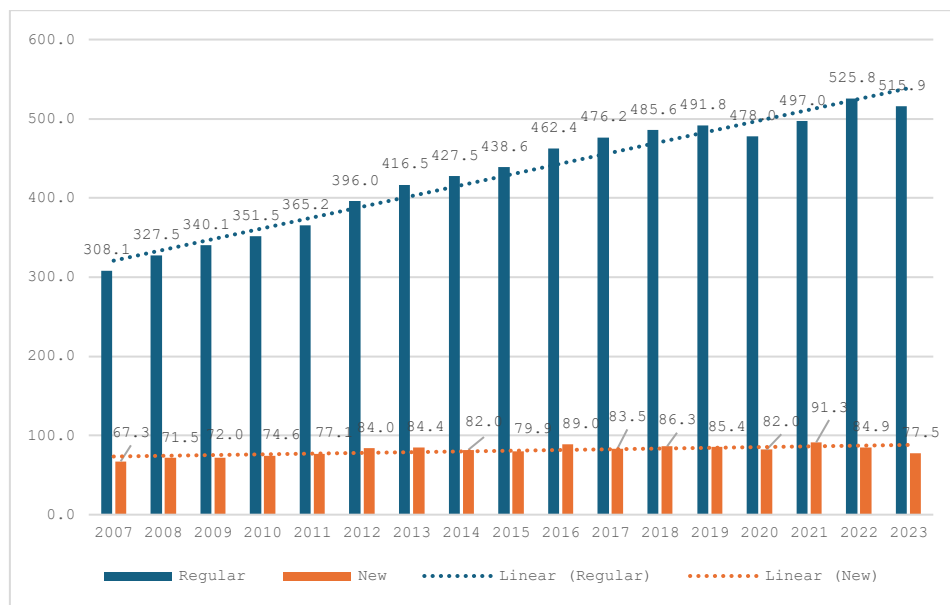
Evolution of General and New Enrolment in the Bolivian University System

The Bolivian University System (SUB) is the higher education system in Bolivia, consisting of eleven autonomous public universities and four universities with special regimes, among which is the Universidad Católica Boliviana “San Pablo”. The autonomous public universities include the following: Universidad Mayor, Real y Pontificia de San Francisco Xavier de Chuquisaca (UMRPSFXCH), Universidad Mayor de San Andrés (UMSA), Universidad Mayor de San Simón (UMSS), Universidad Autónoma Gabriel René Moreno (UAGRM), Universidad Autónoma Tomás Frías (UATF), Universidad Técnica de Oruro (UTO), Universidad Autónoma Juan Misael Saracho (UAJMS), Universidad Autónoma del Beni (UAB), Universidad Nacional Siglo XX (UNSXX), and Universidad Amazónica de Pando (UAP). The universities with special regimes include the Universidad Católica Boliviana “San Pablo” (UCB), Escuela Militar de Ingeniería (EMI), Universidad Andina Simón Bolívar (UASB), and Universidad Policial Mariscal Antonio José de Sucre (UNIPOL).

According to data from the Executive Committee of the Bolivian University (CEUB), during the period from 2007 to 2023, there has been an increase in overall enrolment in the Bolivian University System, rising from a total of 308,141 students in 2007 to 515,888 in 2023 (see Graph 1).

While new enrolment also experienced growth from 2007 to 2023, increasing from 67,324 students to 77,487 in 2023, a downward trend has been observed starting in 2021 (see Graph 1).

Graph 1. Evolution Of General and New Enrolment – SUB (In Thousands Of Students)



Source: Own elaboration based on data from CEUB

The composition of total enrolment, as well as the growth rates during the period from 2007 to 2023, by university, can be seen in Table 1. During the considered period, a decline is observed in the participation of general enrolment from universities in the central axis, which includes the universities of La Paz (UMSA), Cochabamba (UMSS), and Santa Cruz (UAGRM). In contrast to what is happening with the central axis universities of the country, one of the universities that stands out for its growth is the Universidad Pública de El Alto, whose accumulated growth rate is 10.81%, the highest within the entire SUB.

Table 1. Growth Rates of General Enrolment in the SUB

2007-2023

University	Growth rate 2007-2023	Average annual growth rate 2007-2023	Participation in General Registration in 2007	Participation in General Registration in 2023	Change in Participation in General registration 2007-2023	Accumulated participation in General Registration 2023
UMRPSFXCH	60,13%	2,81%	10,07%	9,63%	↓	9,63%
UMSA	9,96%	0,56%	23,25%	15,27%	↓	24,90%
UMSS	50,52%	2,43%	17,87%	16,07%	↓	40,97%
UAGRM	62,09%	2,88%	17,63%	17,06%	↓	58,03%
UATF	76,10%	3,38%	4,64%	4,88%	↑	62,91%
UTO	47,87%	2,33%	6,37%	5,63%	↓	68,54%
UAJMS	53,31%	2,55%	4,99%	4,57%	↓	73,11%
UABJB	107,52%	4,39%	3,89%	4,82%	↑	77,93%
UNSXX	19,82%	1,07%	2,02%	1,44%	↓	79,37%
UAP	367,34%	9,49%	0,58%	1,61%	↑	80,98%
UPEA	472,38%	10,81%	3,97%	13,59%	↑	94,57%
UCB	35,51%	1,80%	4,07%	3,29%	↓	97,87%
EMI	311,80%	8,68%	0,66%	1,62%	↑	99,48%
UNIPOL	132,58%	7,29%	0,00%	0,52%	↑	100,00%
TOTAL	67,42%	3,08%	100,00%	100,00%		

Source: Own elaboration based on data from CEUB

The composition and growth of new enrolment are presented in Table 2. In this case, the downward trend in the participation of universities in the central axis (La Paz, Cochabamba, and Santa Cruz), including the city of Sucre, is very clear. Similar to the previous case, there is a notable growth in new enrolment at the Universidad Pública de El Alto, with a total growth rate of 353% and the highest participation of new enrolment in the SUB during the year 2023 (14.9%).

Table 2: Growth Rates of New Enrolment in the SUB

2007-2023

University	Growth rate 2007-2023	Average annual growth rate 2007-2023	Participation in new enrollment in 2007	Participation in new enrollment in 2023	Change in Participation in new enrollment 2007-2023	Cumulative rate Participation in New Registration 2023
UMRPSFXCH	6,19%	0,35%	12,19%	11,24%	↓	11,24%
UMSA	1,18%	0,07%	12,05%	10,59%	↓	21,84%
UMSS	-14,00%	-0,88%	17,10%	12,78%	↓	34,62%
UAGRM	-59,55%	-5,18%	26,26%	9,23%	↓	43,85%
UATF	68,07%	3,10%	3,73%	5,44%	↑	49,29%
UTO	28,87%	1,50%	5,89%	6,60%	↑	55,88%
UAJMS	23,38%	1,24%	5,22%	5,59%	↑	61,47%
UABJB	58,44%	2,74%	3,66%	5,04%	↑	66,51%
UNSXX	33,86%	1,73%	2,98%	3,47%	↑	69,98%
UAP	209,34%	6,87%	1,19%	3,21%	↑	73,19%
UPEA	353,03%	9,29%	3,80%	14,94%	↑	88,13%
UCB	39,01%	1,96%	4,70%	5,67%	↑	93,80%
EMI	258,44%	7,80%	1,24%	3,86%	↑	97,66%
UNIPOL	58,17%	3,89%	0,00%	2,34%	↑	100,00%
TOTAL	15,10%	0,83%	100,00%	100,00%		

Source: Own elaboration based on data from CEUB

Regarding the composition of enrolment by area of knowledge, it is noteworthy that during the period from 2007 to 2023, there is a decline in the demand for the areas of Pure and Natural Sciences, as well as Social Sciences and Humanities. In contrast, the field of Economics shows an increase, positioning itself in 2023 as the third area with the highest participation in overall enrolment, accounting for a total of 22.10%.

Table 3: Growth Rates of General Enrolment in the SUB by Areas of Knowledge

2007-2023

Knowledge area	Growth rate 2007-2023	Average annual growth rate 2007-2023	Participation in General Registration in 2007	Participation in General Registration in 2023	Change in Participation in General registration 2007-2023	Accumulated participation in General Registration 2023
Pure and Natural Sciences	3,68%	0,21%	2,74%	1,69%	↓	1,69%
Engineering and Technology	76,08%	3,38%	25,16%	26,46%	↑	28,16%
Agricultural Sciences	81,44%	3,57%	5,61%	6,08%	↑	34,24%
Health Sciences	80,97%	3,55%	14,53%	15,71%	↑	49,94%
Social Sciences and Humanities	48,94%	2,37%	31,42%	27,95%	↓	77,90%
Economic Sciences	80,15%	3,52%	20,54%	22,10%	↑	100,00%
TOTAL	67,42%	3,08%	100,00%	100,00%		

Source: Own elaboration based on data from CEUB

Regarding new enrolment, a similar situation is observed as with general enrolment, showing that the area of Economic Sciences has experienced growth during the period from 2007 to 2023. It ranks third in terms of participation in new enrolment during the year 2023, with a share of 20.59%.

Table 4: Growth Rates of New Enrolment in the SUB by Areas of Knowledge

2007-2023

Área	Growth rate 2007-2023	Average annual growth rate 2007-2023	Participation in new Registration in 2007	Participation in New Registration in 2023	Change in Participation in new registration 2007-2023	Accumulated participation in new Registration 2023
Pure and Natural Sciences	-6,48%	-0,39%	1,79%	1,45%	↓	1,45%
Engineering and Technology	-1,96%	-0,12%	28,17%	23,99%	↓	25,44%
Agricultural Sciences	19,95%	1,08%	7,18%	7,49%	↑	32,93%
Health Sciences	40,26%	2,01%	15,49%	18,88%	↑	51,80%
Social Sciences and Humanities	16,05%	0,88%	27,38%	27,60%	↑	79,41%
Economic Sciences	18,51%	1,00%	20,00%	20,59%	↑	100,00%
TOTAL	15,10%	0,83%	100,00%	100,00%		

Source: Own elaboration based on data from CEUB

An important aspect to consider within the SUB is the composition of general and new enrolment by the degree pursued. In this regard, both in general enrolment and new enrolment, there is a predominance of programs that lead to a bachelor's degree, with a noticeable downward trend in the demand for degrees related to higher technical training (see Table 5 and Table 6).

Table 5: Growth Rates of General Enrolment in the SUB by Degree

2007-2023

Grade	Growth rate 2007-2023	Average annual growth rate 2007-2023	Participation in General Registration in 2007	Participation in General Registration in 2023	Change in Participation in General registration 2007-2023	Accumulated participation in General Registration 2023
Bachelor	70,07%	3,17%	94,53%	96,02%	↑	96,02%
Higher University Technician	32,29%	1,66%	4,63%	3,66%	↓	99,68%
Middle University Technician	133,90%	5,13%	0,23%	0,32%	↑	100,00%
Assistant*	-92,14%	-14,70%	0,61%	0,03%	↓	
University Bachelor's Degree in Sciences or Arts*	410,53%	10,73%	0,01%	0,02%	↑	
Skilled Labor**	-65,91%	-6,13%	0,00%	0,00%	→	
TOTAL	67,42%	3,08%	100,00%	100,00%		

Source: Own elaboration based on data from CEUB

*: For the growth rates of this degree, the period 2007-2022 is considered.

**: For the growth rates of this degree, the period 2007-2018 is considered.

Table 6: Growth Rates of New Enrolment in the SUB by Degree

2007-2023

Grade	Growth rate 2007-2023	Average annual growth rate 2007-2023	Participation in new Registration in 2007	Participation in New Registration in 2023	Change in Participation in new registration 2007-2023	Accumulated participation in new Registration 2023
Bachelor	16,54%	0,90%	91,41%	92,55%	↑	92,55%
Higher University Technician	8,49%	0,48%	7,13%	6,72%	↓	99,28%
Middle University Technician	210,00%	6,88%	0,27%	0,72%	↑	100,00%
Assistant*	-71,17%	-7,48%	1,14%	0,26%	↓	
University Bachelor's Degree in Sciences or Arts*	285,71%	8,80%	0,02%	0,06%	↑	
Skilled Labor**	61,11%	4,05%	0,03%	0,00%	↓	
TOTAL	15,10%	0,83%	100,00%	100,00%		

Source: Own elaboration based on data from CEUB

*: For the growth rates of this degree, the period from 2007 to 2022 is considered.

**: For the growth rates of this degree, the period from 2007 to 2018 is considered.

Evolution of enrolment in the economics degree

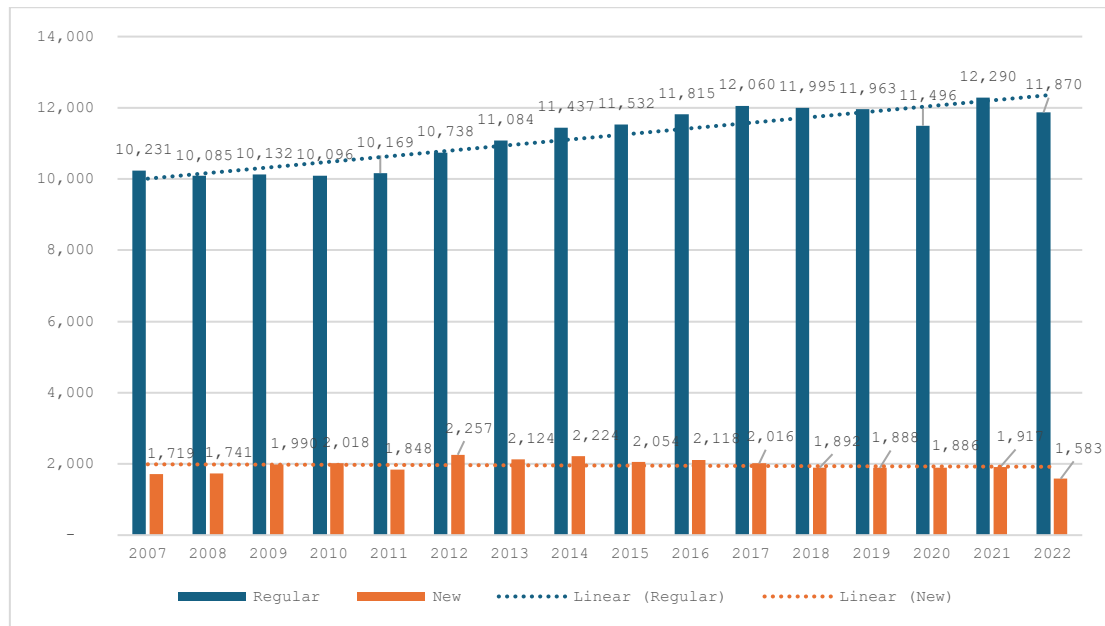
Once the evolution of general and new enrolment within the Bolivian University System is known, this section presents the trends recorded specifically for the Economics Degree for the period from 2007 to 2022.

According to data obtained from CEUB, it is observed that for the specific case of the Economics Degree, there is a moderate increase in general enrolment, rising from 10,231 students in 2007 to 11,870 in 2022. Considering the years 2007 and 2022, there is a decline in new enrolment in this Degree, decreasing from a total of 1,719 students to 1,583, respectively.

Graph 2: Evolution of General and New Enrolment – Economics Degree

Bolivian University System

(In Number of Students)

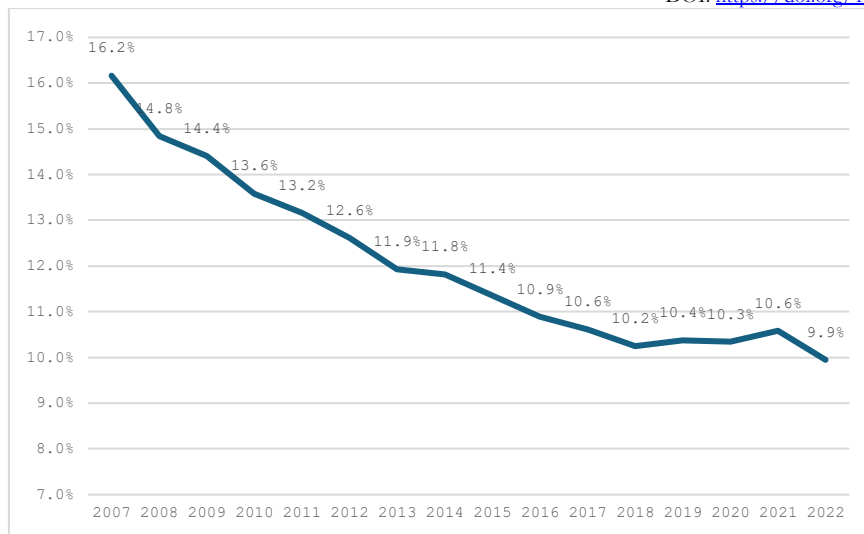


Source: Own elaboration based on data from CEUB

As presented in the previous section, within the field of Economic Sciences, where the Economics Degree is recorded, both general and new enrolment showed an increasing trend during the period from 2007 to 2023. However, within the Economics Degree, this trend reverses, especially concerning new enrolment. Additionally, it is noted that the participation of the Economics Degree, in relation to all those that make up the field of economic sciences, is not only small but also shows a significant decline, dropping from 16.9% in 2007 to 9.9% in 2022 (see Graph 3).

Graph 3: Participation of the Economics Degree in Relation to the Field of Economic Sciences - SUB

2007-2022



Source: Own elaboration based on data from CEUB

From a review of the growth rates in general enrolment for the Economics Degree, it is observed that in most universities, there are negative rates, with the highest being at Gabriel René Moreno University in Santa Cruz and the University of Pando.

Regarding the few universities that show an increase in their general enrolment for the Economics Degree, the Public University of El Alto (UPEA) stands out again, achieving a growth rate of 762.2% during the considered period. This university particularly presents high rates not only in general enrolment but also in new enrolment. Similarly, the market participation exhibited by this university is significant, reaching 13.07% in general enrolment and 17.75% in new enrolment (see Table 7 and Table 8).

Table 7: Growth Rates of General Enrolment – Economics Degree

2007-2022

University	Course	Growth rate 2007-2022	Average annual growth rate 2007-2022	Participation in general Registration 2007	Participation in general Registration 2022	Change in Participation in general registration 2007-2022	Accumulated participation in general registration 2022
UMRPSFXCH	ECONOMICS	37,17%	2,28%	5,94%	7,03%	↑	7,03%
UMSA	ECONOMICS	18,62%	1,23%	28,81%	29,46%	↑	36,49%
UMSS	ECONOMICS	-22,42%	-1,80%	14,30%	9,56%	↓	46,05%
UAGRM	ECONOMICS	-28,20%	-2,34%	12,31%	7,62%	↓	53,66%
UAGRM	ECONOMICS	-100,00%	-100,00%	0,49%	0,00%	↓	53,66%
UATF	ECONOMICS	3,80%	0,27%	7,20%	6,44%	↓	60,11%
UATF	ECONOMICS	321,80%	10,83%	1,30%	4,73%	↑	64,84%
UTO	ECONOMICS AND COMMERCIAL ENGINEERING	15,37%	1,03%	15,51%	15,43%	↓	80,26%
UTO (decentralized)*	ECONOMICS AND COMMERCIAL ENGINEERING	307,41%	10,55%	0,00%	0,93%	↑	81,19%
UAJMS	ECONOMICS	-19,06%	-1,50%	3,54%	2,47%	↓	83,66%
UABJB	ECONOMICS	-62,50%	-6,77%	6,26%	2,02%	↓	85,68%
UAP	ECONOMICS	-100,00%	-100,00%	0,05%	0,00%	↓	85,68%
UPEA	ECONOMICS	762,22%	16,64%	1,76%	13,07%	↑	98,75%
UCB	ECONOMICS	-50,19%	-4,86%	2,53%	1,09%	↓	99,84%
UCB**	ECONOMICS AND BUSINESS INTELLIGENCE	26,67%	1,70%	0,00%	0,16%	↑	100,00%
TOTAL		16,02%	1,07%	100,00%	100,00%		

Source: Own elaboration based on data from CEUB

*: For the growth rates, the period from 2015 to 2022 is considered.

** : For the growth rates, the period from 2020 to 2022 is considered, as this Degree began its activity in 2020.

Table 8: Growth Rates of New Enrolment – Economics Degree

2007-2022

University	Course	Growth rate 2007-2022	Average annual growth rate 2007-2022	Participation in new Registration 2007	Participation in New Registration 2022	Change in Participation in new registration 2007-2022	Accumulated participation in new Registration 2022
UMRPSFXCH	ECONOMICS	-17,31%	-1,35%	9,08%	8,15%	↓	8,15%
UMSA	ECONOMICS	-4,23%	-0,31%	15,13%	15,73%	↑	23,88%
UMSS	ECONOMICS	-60,47%	-6,41%	17,22%	7,39%	↓	31,27%
UAGRM	ECONOMICS	17,77%	1,17%	11,46%	14,66%	↑	45,93%
UAGRM	ECONOMICS	-100,00%	-100,00%	1,22%	0,00%	↓	45,93%
UATF	ECONOMICS	30,88%	1,94%	3,96%	5,62%	↑	51,55%
UATF	ECONOMICS	233,33%	8,98%	2,09%	7,58%	↑	59,13%
UTO	ECONOMICS AND COMMERCIAL ENGINEERING	-28,48%	-2,37%	19,20%	14,91%	↓	74,04%
UTO*	ECONOMICS AND COMMERCIAL ENGINEERING	-58,33%	-6,06%	0,00%	0,63%	↑	74,67%
UAJMS	ECONOMICS	-47,14%	-4,45%	4,07%	2,34%	↓	77,01%
UABJB	ECONOMICS	-63,46%	-6,94%	6,05%	2,40%	↓	79,41%
UAP	ECONOMICS	-100,00%	-100,00%	5,58%	0,00%	↓	79,41%
UPEA	ECONOMICS	602,50%	14,94%	2,33%	17,75%	↑	97,16%
UCB	ECONOMICS	-42,22%	-3,84%	2,62%	1,64%	↓	98,80%
UCB**	ECONOMICS AND BUSINESS INTELLIGENCE	46,15%	2,75%	0,00%	1,20%	↑	100,00%
TOTAL		-7,91%	-0,59%	100,00%	100,00%		

Source: Own elaboration based on data from CEUB

*: For the growth rates, the period from 2015 to 2022 is considered.

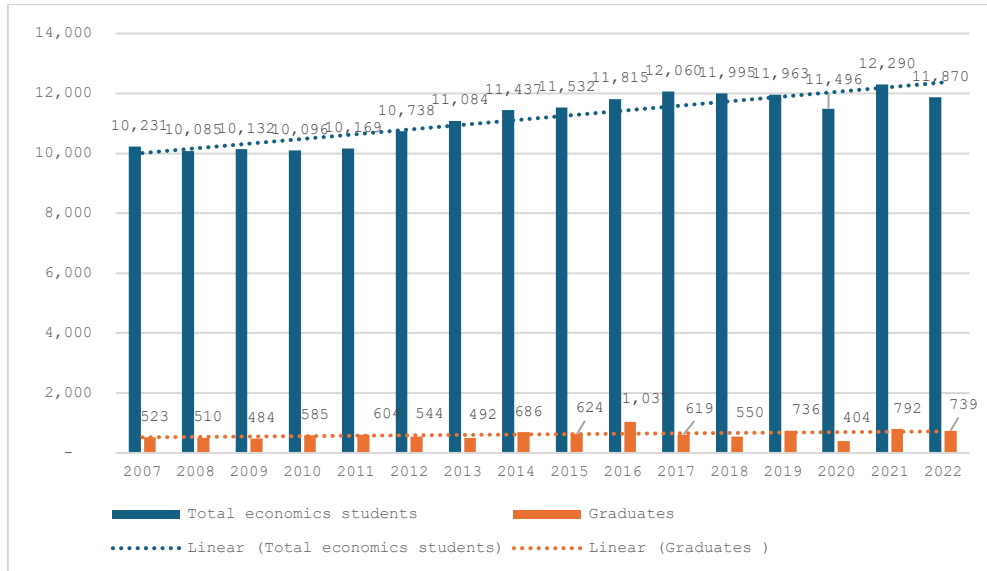
** : For the growth rates, the period from 2020 to 2022 is considered, as this Degree began its activity in 2020.

Another indicator that is undoubtedly important to consider when evaluating trends within the Economics Degree is the evolution of the number of graduates. As shown in Graph 4, there is a significant increase between 2007 and 2016, reaching the highest number of graduates (1,037), with a total of 739 in 2022.

Graph 4: Evolution of Enrolment and Graduates – Economics Degree

Bolivian University System

(In number of students)



Source: Own elaboration based on data from CEUB

From Table 9, it can be seen that the highest participation of graduates in 2022 was held by the universities in the central axis of the country, namely UMSA, UMSS, and UAGRM.

Table 9: Growth Rates of Graduates – Economics Degree

2007-2022

UNIVERSIDAD	CARRERA	Sede	Tasa de crecimiento 2007-2022	Tasa de crecimiento promedio anual 2007-2022	Participación de titulados 2007	Participación de Titulados 2022	Cambio en Participación en Titulados 2007-2022	Acumulación Participación titulados 2022
UMRPSFXCH	ECONOMÍA	Capital	-17,74%	-1,39%	11,85%	6,90%	↓	6,90%
UMSA	ECONOMÍA	Capital	9,29%	0,64%	26,77%	20,70%	↓	27,60%
UMSS	ECONOMÍA	Capital	204,88%	8,29%	7,84%	16,91%	↑	44,52%
UAGRM	ECONOMÍA	Capital	-12,09%	-0,92%	17,40%	10,83%	↓	55,35%
UAGRM	ECONOMÍA	Desconcentrada	0,00%	0,00%	0,00%	0,00%	→	55,35%
UATF	ECONOMÍA	Capital	195,00%	8,03%	3,82%	7,98%	↑	63,33%
UATF*	ECONOMÍA	Desconcentrada	3400,00%	28,91%	0,00%	9,47%	↑	72,80%
UTO**	ECONOMÍA E INGENIERÍA COMERCIAL	Capital y desconce	50,79%	2,98%	12,05%	12,86%	↑	85,66%
UAJMS	ECONOMÍA	Capital	-40,54%	-3,65%	7,07%	2,98%	↓	88,63%
UABJB	ECONOMÍA	Capital	27,78%	1,77%	3,44%	3,11%	↓	91,75%
UAP	ECONOMÍA	Capital	-100,00%	-100,00%	0,19%	0,00%	↓	91,75%
UPEA***	ECONOMÍA	Capital	2400,00%	25,85%	0,00%	3,38%	↑	95,13%
UCB	ECONOMÍA	Capital	-28,00%	-2,32%	9,56%	4,87%	↓	100,00%
UCB	ECONOMÍA E INTELIGENCIA DE NEGOCIOS	Capital	0,00%	0,00%	0,00%	0,00%	→	100,00%
TOTAL			41,30%	2,50%	100,00%	100,00%		

Source: Own elaboration based on data from CEUB

*For the growth rates of this degree, the period from 2008 to 2022 is considered.

**The 2 graduates from the decentralized campus of this university in 2022 are added to the main campus.

***For the growth rates of this degree, the period from 2011 to 2022 is considered.

The review of the evolution of general and new enrolment, as well as the information on the number of graduates in the Economics Degree, raises important questions about the causes that may be determining a lower demand for this degree. It also highlights the incentives within the labour market for economists that may be affecting the demand for more specialized training once the undergraduate stage has been completed.

Modelling

With the help of a survey conducted in 2024 among both students and graduates of the Economics Degree at the Universidad Católica Boliviana “San Pablo,” econometric models were run to capture, on one hand, the determinants that lead to choosing the Economics Degree and, on the other hand, to test the salary returns obtained after completing postgraduate studies.

For this purpose, the Linear Probability Model (LPM) technique was employed, which allows us to model binary dependent variables (Wooldridge 2010). In the specific case of this work, the LPM is based on the idea that the probability of choosing the Economics Degree or obtaining a certain level of returns from postgraduate studies can be modelled as a linear combination of explanatory variables.

The general form of the model is as follows:

$$P(Y = 1 | X) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

Where:

- $P(Y = 1 | X)$ is the probability that the dependent variable equals 1 given a set of explanatory variables.
- β_0 is the intercept of the model.
- $\beta_1, \beta_2, \dots, \beta_k$ are the coefficients that represent the change in probability associated with a one-unit change in the explanatory variables X_1, X_2, \dots, X_k .

It was decided to use this model because of its advantages, such as simplicity in interpretation and calculation, as it employs a linear relationship between the variables, as well as the fact that the model parameters can be estimated using ordinary least squares (OLS) methods.

One disadvantage of the LPM is that predictions can fall outside the range [0, 1]. Nevertheless, it highlights the usefulness of this tool for modelling binary decisions. Although out-of-range values may be encountered, a proper interpretation of these results allows us to conduct appropriate exploratory analyses, as is the case in this document.

Determinants of the Choice of Economics as A Career

Given the declining trends observed in recent years in the enrolment of the Economics program, it is considered important to identify which variables determine the choice of this field. To approach the determinants that lead to the choice of the Economics program, responses provided in 2024 by 79 graduates and 45 students from the Universidad Católica Boliviana “San Pablo” have been considered.

In order to adequately capture the determinants of choice, two models were specified: one for students and another for graduates, following the LPM technique, which approximates the probabilities that the Economics program will be chosen based on the identified determinants.

The motivation for asking current students and graduates of Economics about the reasons that led them to choose this program is to test how these determinants might change regarding a situation without

information about the program (students currently enrolled) and to explore the possibility of including other criteria that could make this program more appealing (graduates of the program).

In both cases, for students and graduates, the dependent variable is defined as the choice of the Economics program. Among the common determinants for both groups, the following variables are noted:

Reasons that influenced the choice of the Economics program.

The programs that were considered as study options once high school was completed.

The specification of the model in the case of students is as follows:

$$\begin{aligned} & \textit{StudyEconomics} \\ & = \beta_0 + (\beta_{1,1} \cdots \beta_{1,7}) \cdot (\textit{reason}_{1,1} \cdots \textit{reason}_{1,7}) + (\beta_{2,1} \cdots \beta_{2,13}) \\ & \cdot (\textit{option}_{2,1} \cdots \textit{option}_{2,13}) + (\beta_{3,1} \cdots \beta_{3,8}) \cdot (\textit{item}_{3,1} \cdots \textit{item}_{3,8}) + \mu \end{aligned}$$

Where the dependent variable is the probability of studying economics, and the parameters are specified as follows:

β_0 is the intercept, $(\beta_{1,1} \cdots \beta_{1,7})$ are the parameters that capture the reasons that influenced the decision to study Economics, $(\beta_{2,1} \cdots \beta_{2,13})$ are the parameters that capture the options available for studying Economics upon graduating from high school, $(\beta_{3,1} \cdots \beta_{3,8})$ are the parameters that capture opinions on items associated with the University or Degree and μ is the error term.

In the case of graduates from the program, the dependent variable remains as the probability of studying Economics, considering the following specification:

$$\begin{aligned} & \textit{StudyEconomics} \\ & = \beta_0 + (\beta_{1,1} \cdots \beta_{1,6}) \cdot (\textit{reason}_{1,1} \cdots \textit{reason}_{1,6}) + (\beta_{2,1} \cdots \beta_{2,15}) \\ & \cdot (\textit{option}_{2,1} \cdots \textit{option}_{2,15}) + (\beta_{3,1} \cdots \beta_{3,3}) \cdot (\textit{develop}_{3,1} \cdots \textit{develop}_{3,3}) \\ & + (\beta_{4,1} \cdots \beta_{4,3}) \cdot (\textit{useful}_{4,1} \cdots \textit{useful}_{4,3}) + (\beta_{5,1} \beta_{5,2}) \\ & \cdot (\textit{specialization}_{5,1} \textit{specialization}_{5,2}) + (\beta_{6,1} \beta_{6,2}) \cdot (\textit{math}_{6,1} \textit{math}_{6,2}) \\ & + (\beta_{7,1}) \textit{Solve problems} + (\beta_{8,1} \beta_{8,2}) \\ & \cdot (\textit{Applied Research}_{8,1} \textit{Applied Research}_{8,2}) + (\beta_{9,1} \beta_{9,2}) \\ & \cdot (\textit{Literature}_{9,1} \textit{Literature}_{9,2}) + (\beta_{10,1}) \textit{Graduate in Economics} + \mu \end{aligned}$$

Where β_0 is the intercept, $(\beta_{1,1} \cdots \beta_{1,6})$ are the parameters that capture the reasons that influenced the decision to study Economics, $(\beta_{2,1} \cdots \beta_{2,15})$ are the parameters that capture the options available for studying Economics upon graduating from high school, $(\beta_{3,1} \cdots \beta_{3,3})$ are the parameters that capture the contribution of the program to reflective and critical development in the professional field, $(\beta_{4,1} \cdots \beta_{4,3})$ is the usefulness of the knowledge acquired, $(\beta_{5,1} \beta_{5,2})$ is having in-depth and specialized knowledge in a particular area, $(\beta_{6,1} \beta_{6,2})$ is the being excellent in mathematics, $(\beta_{7,1})$ is the ability of problem-solving, $(\beta_{8,1} \beta_{8,2})$ is the interest at applied research, $(\beta_{9,1} \beta_{9,2})$ is the extensive knowledge of economic literature, $(\beta_{10,1})$ if it obtained a degree in Economics and μ is the error term.

Based on these specifications, Table 10 presents the outputs of the model estimated from surveys of Economics students. From this model, it is observed that among the most significant variables for choosing the degree are 'influence of close family members who studied Economics,' with a coefficient of 0.53, as well as 'influence from peers,' with a coefficient of 2.4. This is interpreted as a strong certainty in choosing the Economics degree when the influence comes from family members, friends or schoolmates.

On the other hand, a weakness identified is the influence exerted by a non-close family member who studied Economics (-1.2), which in this case reduces the probability of choosing the Economics degree.

Considering other variables taken into account for model estimation, it is noteworthy that the results from a vocational test—information that students can obtain from the university itself, social networks, and even prior knowledge of the field—are not significant.

The above raises the question of how effective the university's efforts are in providing information about the professional profile, as well as the importance that high school students place on the results of a vocational test for choosing their professional career (see Table 10).

Table 10: Determinants of the Choice of Economics Degree

Survey of Students

VARIABLES	Study Economics
WHAT IS THE MAIN REASON THAT INFLUENCED YOU TO STUDY THE CAREER OF ECONOMICS?	
Due to the influence of a close relative who studied Economics	0.534* (0.265)
Due to the influence of a distant relative who studied Economics	-1.274* (0.651)
Due to the influence of his peers (friends, schoolmates)	2.459* (1.180)
Due to the influence of a vocational test	0.439 (0.516)
Due to the information received in admissions about Economics	0.616 (0.378)
Due to the influence of social networks that spread information about Economics	-0.422 (0.323)
Due to the influence of some prior knowledge about Economics (books, notable professionals in Economics, courses in the school or outside of school)	0.703 (0.383)
WHICH CAREERS, INCLUDING ECONOMICS, WERE HIS OPTIONS FOR STUDYING AFTER LEAVING SCHOOL?	
Mathematics	-0.634

	(0.359)
Statistics	-0.972*** (0.267)
Physics	0.263 (0.396)
Biology	-1.013** (0.346)
Economy	-0.690 (0.385)
Business Administration	-0.787*** (0.223)
Commercial Engineering	0.227 (0.349)
Public Accounting	0.762 (0.601)
Political Science	-0.602* (0.262)
Sociology	-0.387 (0.630)
History	-0.507 (0.543)
Industrial Engineering	-0.0325 (0.316)
Another	-
FROM YOUR OPINION AND EXPERIENCE, HOW YOU CLASSIFY THE FOLLOWING ITEMS ASSOCIATED WITH YOUR UNIVERSITY/DEGREE?	
The teaching staff	-0.874* (0.442)
The infrastructure (library, study rooms, laboratories)	-0.414 (0.556)
The teaching method	1.560* (0.669)
Job opportunities upon graduation	0.249 (0.287)

The curriculum of the career	-0.199 (0.384)
Agreements with other universities	-0.640* (0.330)
Updated and sufficient collection of books	0.623 (0.406)
Proper preparation to face a postgraduate program	-0.494** (0.188)
Constant	2.791** (0.945)
Observations	35
R-squared	0.923

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

From the model presented in Table 10, it is also noteworthy that variables that could be considered important when choosing this degree do not constitute strengths; rather, they are perceived as weaknesses. Among these variables is the teaching staff, which is seen as a weakness, reducing the probability of choosing this degree by 87.4%. Although this parameter is not significant for probabilities below 5%, it is important to consider this aspect when evaluating choice criteria. Similarly, the presence of agreements with other universities is perceived as a weakness, as it reduces the probability by 64%.

Regarding whether the first choice for undergraduate studies was the Economics degree, it is observed that students who had Business Administration, Statistics, or Biology as their first option are practically certain not to study Economics. This relationship does not appear when considering the Commercial Engineering degree, which shows no significance concerning the choice of an Economics education.

Additionally, it stands out that students perceive undergraduate training as very basic, as the probability of being adequately prepared for a graduate program decreases by 49.4%.

Table 11 presents the estimated probability model based on the responses from graduates of this degree.

A common element with the previous model is that the variable 'influence of close family members who studied Economics' is significant, with a coefficient of 0.617. In this case, 'influence from a non-close family member who studied Economics' also increases the probability by 51.2%.

Unlike previous results, in this case, the variable 'vocational test' becomes significant, as does 'the influence of any prior knowledge about the degree'. In these last two cases, it can be noted that these are indeed criteria that determine the choice of the Economics degree.

Regarding study options available upon graduating from high school, there is a shift in direction compared to the previous model. In this case, considering disciplines such as Mathematics, Biology, Medicine, Business Administration, and Political Science determines a positive probability of continuing studies in Economics by at least 78.7%, which is not true for Physics and Commercial Engineering.

Table 11: Determinants of the Choice of Economics Degree

Survey of Graduates

VARIABLES	Study Economics
WHAT IS THE MAIN REASON THAT INFLUENCED YOU TO STUDY ECONOMICS?	
Due to the influence of a close relative who studied Economics	0.617*
	(0.328)
Due to the influence of a distant relative who studied Economics	0.512*
	(0.233)
Due to the influence of peers (friends, schoolmates)	-0.0257
	(0.288)
Due to the influence of a vocational test	2.008**
	(0.858)
Regarding the information received in admissions about Economics	0.132
	(0.159)
Due to the influence of some prior knowledge about Economics	1.084**
	(0.476)
YES, IS WORKING	-0.677**
	(0.276)
WHICH CAREERS, INCLUDING ECONOMICS, WERE HIS OPTIONS FOR STUDYING AFTER LEAVING SCHOOL?	
Mathematics	0.401*
	(0.205)
Statistics	-0.567
	(0.326)
Physics	-0.760*
	(0.407)
Biology	0.263*

	(0.140)
Economy	-0.549 (0.300)
Business Administration	0.745** (0.309)
Commercial Engineering	-0.688 (0.428)
Public Accounting	-0.353 (0.243)
Political Science	0.286* (0.137)
Sociology	-0.0187 (0.149)
History	-0.0981 (0.110)
Industrial Engineering	-0.199 (0.239)
Medicine	0.800** (0.263)
Law	0.278 (0.176)
Other_Option_1	0.0605 (0.0937)
Other_Option_2	0.0752 (0.127)
THE TRAINING ACQUIRED IN THE ECONOMICS DEGREE CONTRIBUTED TO THE DEVELOPMENT OF MY REFLECTIVE AND CRITICAL SENSE IN MY PROFESSIONAL FIELD.	
Neither in disagreement nor in agreement	-0.288 (0.380)
Agreed	0.787** (0.289)
Totally agree	0.666** (0.237)
THE KNOWLEDGE ACQUIRED IN THE ECONOMICS DEGREE HAS BEEN USEFUL AND RELEVANT IN MY PROFESSIONAL ACTIVITY.	

Neither in disagreement nor in agreement	0.680** (0.226)
Agreed	0.932*** (0.160)
Totally agree	1.072*** (0.220)
TO HAVE A DEEP AND SPECIALIZED KNOWLEDGE IN A PARTICULAR AREA	
Moderately important	-1.667*** (0.450)
Very important	-1.638*** (0.457)
TO BE EXCELLENT IN MATHEMATICS	
Moderately important	0.267* (0.121)
Very important	-0.0717 (0.159)
TO HAVE THE ABILITY TO SOLVE PROBLEMS	
Very important	0.226* (0.113)
TO BE INTERESTED AND BE GOOD AT APPLIED RESEARCH	
Moderately important	1.061*** (0.283)
Very important	0.879*** (0.201)
TO HAVE A BROAD KNOWLEDGE OF ECONOMIC LITERATURE	
Moderately important	-0.234* (0.114)
Very important	-1.005*** (0.297)
YES, HE OR SHE WAS GRADUATED WITH A DEGREE IN ECONOMICS.	
	-0.448* (0.201)
Constant	1.281 (0.710)
Observations	49
R-squared	0.967

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

From the perspective of graduates, it is noteworthy that the training in the Economics degree contributed to the development of a reflective and critical mindset, as well as a recognition of the usefulness of the

knowledge acquired during their studies at the university. These aspects should be known to individuals interested in studying Economics so that they can consider this as a benefit gained from pursuing this discipline.

Additionally, it is observed that being interested in and skilled at applied research is considered an aspect that definitely contributes to the choice of a career such as Economics.

Model of Returns from Years of Graduate Study

Following the line established by Spence (1973), this study aims to verify whether years of education could serve as a signal to differentiate the abilities of graduates in Economics within the labour market, thereby allowing for higher salary returns as the number of years of graduate study increases. Essentially, it seeks to determine if more years of graduate education can act as a signal that prevents the emergence of a mixing equilibrium.

For estimating the returns on education, the relationship between educational level and future income is considered. The most well-known formulation for estimating these returns is based on Mincer's equation (1974), which is commonly used to quantify how an additional year of education affects a person's salary and is expressed in the following specification:

$$W = \beta_0 + \beta_1 E + \beta_2 X + \mu$$

Where W is the average salary or wage, E represents the years of education. X are other variables that may influence income, such as work experience, gender, and geographic location, β_0 is the intercept of the equation, β_1 is the coefficient that measures the return on education, indicating how much income is expected to increase for each additional year of education. In the case of this research, this coefficient will vary according to the level of education—bachelor's degree, diploma, specialty, master's degree, or doctorate—as well as considering other contextual factors and μ is the error term.

Following the line proposed by Mincer (1974) and based on the responses obtained from a survey of 79 graduates from the Economics program at the Universidad Católica Boliviana "San Pablo", the following linear models were specified.

Average Wage

$$\begin{aligned} &= \beta_0 + \beta_1 \text{Diploma} + \beta_2 \text{Specialty} + \beta_3 \text{Master} + \beta_4 \text{Doctorade} \\ &+ \beta_5 \text{MonthsWorking} + \beta_6 \text{FirstJob} + \beta_7 \text{PartTime} + \beta_8 \text{Age} + (\beta_{9,1} \cdots \beta_{9,7}) \\ &\cdot (\text{Place}_{9,1} \cdots \text{Place}_{9,7}) + \mu \end{aligned}$$

Where β_0 is the intercept, β_1 is the return from studying a diploma, β_2 is the return from studying a specialty, β_3 is the return from studying a master's degree, β_4 is the return from studying a doctorate, β_5 are the months of work, β_6 if it is his/her first job, β_7 if he/she works a part-time job, β_8 is the age, $(\beta_{9,1} \cdots \beta_{9,7})$ are the place of work and μ is the error term.

On the other hand, in order to jointly test work experience along with the academic training obtained, another model was proposed that interacts months of work with the level of education attained. The specification of this model is as follows:

Average Wage

$$\begin{aligned} &= \beta_0 + \beta_1 \text{Diploma} + \beta_2 \text{Specialty} + \beta_3 \text{Master} + \beta_4 \text{Doctorade} + \beta_5 \text{Bachelor} \\ &* \text{MonthsWorking} + \beta_6 \text{Diploma} * \text{MonthsWorking} + \beta_7 \text{Specialty} \\ &* \text{MonthsWorking} + \beta_8 \text{Master} * \text{MonthsWorking} + \beta_9 \text{Doctorade} \\ &* \text{MonthsWorking} + \beta_{10} \text{MonthsWorking} + \beta_{11} \text{FirstJob} + \beta_{12} \text{PartTime} \\ &+ \beta_{13} \text{Age} + (\beta_{14,1} \cdots \beta_{14,7}) \cdot (\text{Place}_{14,1} \cdots \text{Place}_{14,7}) + \mu \end{aligned}$$

Where β_0 is the intercept, β_1 is the return from studying a diploma without any experience, β_2 is the return from studying a specialty without any experience, β_3 is the return from studying a master's degree without any experience, β_4 is the return from studying a doctorate without any experience, β_5 is the bachelor's degree per months of work, β_6 is the diploma per months of work, β_7 is the Specialty per months of work, β_8 is the master's degree per months of work, β_9 is the doctorate per months of work, β_{10} are the months of work, β_{11} if it is his/her first job, β_{12} if he/she works a part-time job, β_{13} is the age, ($\beta_{14,1} \dots \beta_{14,7}$) are the place of work and μ is the error term.

In constructing the dependent variable, it is important to note that the salaries were obtained from different salary ranges; that is, each individual indicated their corresponding range. The salaries used correspond to the average of each range, which could introduce some biases; however, despite this, a good approximation was achieved.

The results obtained from both models are shown in Table 12. In model (1), it can be observed that returns vary depending on the level of education. Notably, having a doctorate reduces income by 6,416 Bs, and working part-time also reduces income by 4,459 Bs. Similarly, working in regional integration organizations, institutions dedicated to research, public administration entities (national, departmental, or municipal), private companies, non-profit organizations, foundations, and banks and financial institutions has a negative impact ranging from 3,063 Bs to 8,692 Bs. It is important to note that the impact of age is positive at 983.5 Bs.

Table 12: Returns to Education by Graduate Studies

VARIABLES	(1) average_salary	(2) average_salary
Diploma	-1,201 (1,041)	-6,216*** (2,141)
Specialty	1,933 (3,465)	-3,239 (7,915)
Master's degree	2,159 (1,572)	-1,429 (2,148)
Doctorate	-6,416** (2,449)	-6,524*** (2,299)
Bachelor's degree * months of work		0 (0)
Diploma*months of work		350.3** (136.8)
Specialty*months of work		309.4 (237.5)
Mastery*months of work		248.4** (109.1)
Doctorate*months of work (Omitted due to perfect collinearity)		0 (0)
Months of work	36.22 (24.35)	-214.9* (108.0)
If it is your First Job	-1,197 (1,075)	-853.9 (1,040)
If it's part-time work	-4,459*** (1,290)	-5,110*** (1,189)
Age	983.5*** (293.3)	1,019*** (255.7)

WORKPLACES		
Regional integration organism	-8,692*** (1,540)	-7,236*** (2,177)
Institutions dedicated to research	-6,842*** (1,643)	-7,198*** (1,803)
Public Administration Entities (National, departmental or municipality)	-3,063* (1,689)	-3,760* (1,874)
Private Companies, Non-Profit Organizations, Foundations	-4,402** (1,826)	-4,708** (1,938)
Banks and Financial Institutions	-5,541*** (1,986)	-5,624** (2,182)
Consulting	-2,888 (2,251)	-2,085 (2,037)
Another	-7,073** (2,926)	-7,145** (2,894)
Constant	-14,244* (7,948)	-11,409 (7,158)
Observations	64	64
R-squared	0.752	0.786

Based on the results of model (1), it can be concluded that years of study in graduate programs do not contribute to the returns obtained by graduates of the Economics program. More critically, it is observed that having a doctorate not only does not contribute but actually decreases the return that could be achieved, suggesting that there may be an issue of adverse selection in the labour market for economists, where obtaining a higher academic qualification is perceived more as a requirement to enter the job market rather than as a means to increase education returns.

To complement model (1), model (2) was run, where the academic degree is interacted with months of work as a proxy for experience added to years of study. The results indicate that if someone has at least 24 months of experience, holding a diploma contributes an additional 2,191.2 Bs. Conversely, for an individual who has only worked for 12 months, the contribution decreases by 2,012.4 Bs.

In the case of a master's degree, it has a positive impact; specifically, if at least 12 months of experience are held, the impact is positive with an approximate return of 1,551.8 Bs. It is worth noting that even with shorter periods of experience, the degree makes a difference. In the case of a doctorate, it is difficult to validate because the interacted variable was omitted due to perfect collinearity. Nevertheless, if we focus solely on the value observed with doctoral studies, we can see that income decreases by 6,524 Bs. Even if we had a tentative value for twelve months of work as the optimal threshold from which the doctorate would positively contribute to income, this optimal value for months of work would be 543.6 Bs. .

While both models yield similar results regarding the impact of years of graduate study and returns, the second model highlights the importance of work experience as a central element in the impact on returns. This suggests that the labour market, in addition to the degree obtained by economists, places significant

value on the work experience they acquire. This is even more evident when considering that in both models, the impact of age is significant, although it has a greater impact in the second model.

Conclusions

Based on the results found, we can conclude that the choice of the Economics program is influenced by factors unrelated to the knowledge of its content. It is evident that, significantly, the influence of the environment, particularly close family members or peers, determines students' decisions to pursue a degree in Economics.

Once the Economics program is chosen, it is noted that most respondents would choose to study it again after becoming accurately aware of its content. This suggests that if effective information mechanisms about the program's content were available, it could reverse the declining trend in demand for this professional field.

Regarding the signalling effect of years of study beyond the undergraduate level, it is observed that in the Bolivian market, completing various postgraduate courses is not considered a strong differentiation signal but rather a requirement to enter the job market. This indicates some signs of adverse selection within this market.

On the other hand, it is noted that the labour market values not only the knowledge acquired during postgraduate studies but fundamentally the work experience that accompanies this advanced education.

All of this suggests a need to develop more agreements that allow for professional internships, fostering a closer connection between theory and empirical application. Additionally, more rigorous postgraduate programs are required to serve as a strong signal within the labour market for economists, enabling a separating equilibrium where a greater number of years of study are recognized for achieving higher returns in the market.

At a theoretical level and for future work, it is important to recognize and mitigate the fact that all three regressions may present endogeneity issues; nevertheless, it is possible that any existing bias is low and does not significantly alter the results presented

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