

Financing of education and technical and vocational education and training (TVET) in Latin America and the Caribbean

Michael Hanni



UNITED NATIONS

ECLAC



Norwegian Ministry of
Foreign Affairs

Thank you for your interest in this ECLAC publication



Please register if you would like to receive information on our editorial products and activities. When you register, you may specify your particular areas of interest and you will gain access to our products in other formats.



www.cepal.org/en/publications



www.cepal.org/apps

SERIES

MACROECONOMICS OF DEVELOPMENT

200

Financing of education and technical and vocational education and training (TVET) in Latin America and the Caribbean

Michael Hanni



UNITED NATIONS

ECLAC



Norwegian Ministry of
Foreign Affairs

This document has been prepared by Michael Hanni, Economic Affairs Officer in the Economic Development Division of the Economic Commission for Latin America and the Caribbean (ECLAC), in the framework of the cooperation programme between ECLAC and the Government of Norway and the project entitled "Vocational education and training for equality in Latin America and the Caribbean".

The views expressed in this document, which has been reproduced without formal editing, are those of the author and do not necessarily reflect the views of the Organization.

United Nations publication
ISSN: 1680-8851 (electronic version)
ISSN: 1680-8843 (print version)
LC/TS.2019/29/Rev.1
Distribution: L
Copyright © United Nations, 2019
All rights reserved
Printed at United Nations, Santiago
S.19-00376

This publication should be cited as: M. Hanni, "Financing of education and technical and vocational education and training (TVET) in Latin America and the Caribbean", *Macroeconomics of Development series*, No. 200 (LC/TS.2019/29/Rev.1), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2019.

Applications for authorization to reproduce this work in whole or in part should be sent to the Economic Commission for Latin America and the Caribbean (ECLAC), Publications and Web Services Division, publicaciones.cepal@un.org. Member States and their governmental institutions may reproduce this work without prior authorization, but are requested to mention the source and to inform ECLAC of such reproduction.

Contents

Abstract.....	7
Introduction.....	9
I. Technical and vocational education and training (TVET): definitions and rationales for investment.....	11
A. What is TVET?.....	11
B. Rationales for investment in TVET.....	12
II. Theoretical framework for TVET finance.....	15
A. Models for the provision of education and TVET services.....	15
B. Justifications for public sector intervention in education and TVET financing in a mixed market.....	16
C. Education and TVET financing modalities.....	18
III. Education and TVET financing in Latin America and the Caribbean.....	25
A. Scope of analysis.....	25
B. Public sector.....	26
1. Resource mobilization.....	26
2. Education initial financing.....	37
3. TVET initial financing.....	43
C. Private sector.....	45
1. Households.....	45
2. Firms.....	52
D. Rest of the world.....	56
1. Bilateral ODA.....	56

2.	ODA by multilateral institutions	61
3.	Private sector financing	63
IV.	Conclusions and policy issues	65
	Bibliography	69
	Macroeconomics of Development Series: issues published	72

Tables

Table 1	Latin America (selected countries): specific tax instruments to finance education	31
Table 2	Selected countries: Formal TVET financing measures	32
Table 3	Latin America and the Caribbean: TVET related payroll taxes	33
Table 4	Latin America (18 countries): Education expenditure targets established in national legislation, latest year	39
Table 5	Latin America and the Caribbean (selected countries): Preferential treatment of educational expenses for the value-added tax (VAT)	47
Table 6	Latin America and the Caribbean (11 countries): personal income tax benefits for educational expenses	48
Table 7	Selected countries: firms' sources of financing for training	53
Table 8	Latin America (5 countries): tax benefits for education and training expenditures by firms	54

Figures

Figure 1	Latin America and the Caribbean: total tax revenues, 2017	27
Figure 2	Latin America and the Caribbean and OECD: structure of tax revenues, 2017	28
Figure 3	Latin America and the Caribbean and OECD: subnational tax revenues, 2016	29
Figure 4	Latin America and the Caribbean and OECD: subnational tax revenues from immovable property, 2016	30
Figure 5	Latin America and the Caribbean (selected countries): TVET related payroll tax revenues, 2017	34
Figure 6	Selected national training institutions: revenues by source, 2016 or latest	35
Figure 7	World Bank: IBRD and IDA new commitments for education in Latin America and the Caribbean, FY1990-FY2015	36
Figure 8	Latin America and the Caribbean: public expenditure on education, 2016	38
Figure 9	Latin America and the Caribbean: share of public expenditure on education in total public expenditure, 2016	38
Figure 10	Latin America and the Caribbean: initial government spending per student (primary and secondary), 2016 or latest	40
Figure 11	Latin America and the Caribbean: initial government spending per student at the secondary level and GDP per-capita, 2016 or latest	41

Figure 12	Latin America and the Caribbean: initial government spending per student as a percentage of GDP per-capita, 2016 or latest.....	42
Figure 13	TVET expenditures at the secondary level, 2017 or latest.....	43
Figure 14	Secondary level TVET expenditures relative to all secondary expenditures and to all education expenditures, 2017 or latest.....	44
Figure 15	TVET initial financing by national training institutions, 2017 or latest.....	44
Figure 16	Selected countries: initial funding of education by sector, 2015.....	45
Figure 17	Selected countries: initial funding of education as a share of GDP per-capita, by households, 2015.....	46
Figure 18	Selected countries: size of tax expenditures associated with educational expenditures for the valued-added tax (VAT) and the personal income tax (PIT), latest year.....	50
Figure 19	Percentage of firms offering formal training and firms identifying an inadequately educated workforce as a major constraint, 2017 or latest.....	52
Figure 20	Latin America and the Caribbean: percentage of firms offering formal training, by country, 2017 or latest.....	53
Figure 21	Latin America and the Caribbean: bilateral official development aid (commitments) flows for education and secondary vocational education, 2008-2017.....	57
Figure 22	Selected countries: bilateral donors providing official development aid (commitments) for education to Latin America and the Caribbean, 2008-2017.....	58
Figure 23	Latin America and the Caribbean (selected countries): principal recipients of bilateral official development aid (commitments) for education, 2008-2017.....	58
Figure 24	Selected countries: top 20 bilateral donors providing official development aid (commitments) for secondary vocational education in Latin America and the Caribbean, 2008-2017.....	59
Figure 25	Latin America and the Caribbean: top 20 bilateral recipients of official development aid (commitments) for secondary vocational education, 2008-2017.....	60
Figure 26	Selected multilateral organizations: ODA commitments for education in Latin America and the Caribbean, 2008-2017.....	61
Figure 27	ODA commitments by multilateral organizations for secondary vocational education in Latin America and the Caribbean, 2008-2017.....	62
Figure 28	Selected philanthropic organizations: cumulative commitments for education in Latin America and the Caribbean, by educational level, 2013-2017.....	63

Boxes

Box 1	Social impact bonds and human capital performance bonds	20
Box 2	Enterprise training funds.....	21
Box 3	The German dual system model	22
Box 4	Transformation of the Tertiary Technical and Technological Institutes Project in Ecuador	37
Box 5	Implicit household educational expenses based on VAT data	51
Box 6	Recent secondary vocational education projects in Latin America and the Caribbean	60
Box 7	Skills Development and Employability Project in Guyana	62

Diagramas

Diagram 1	TVET modalities as a life-long learning continuum	12
Diagram 2	Schematic of education and TVET funding and expenditure.....	19
Diagram 3	Stylized representation of resource mobilization and initial financing by actor.....	20

Abstract

A key pre-requisite for achieving the Sustainable Development Goals is accessible and inclusive quality education (SDG 4). Research has shown that investments in human capital —by the public sector, by firms and by households— have a significant impact on economic performance as well as individual and social wellbeing.

The role of technical and vocation education and training (TVET) in this process is key, especially as the global and regional economy undergoes significant changes. The world of work is evolving rapidly, as productive structures adapt to the shifts induced by the emergence of new technologies and new business models. Skills in this environment tend to depreciate quickly and therefore must be continually updated.

TVET provides opportunities to transition students into this new world of work as well as keeping existing workers employed. TVET programmes targeted at women, youth, senior citizens and other vulnerable populations also provides governments with significant leverage to reduce inequality and poverty.

To realize these benefits, however, will require a substantial commitment by governments, households and firms to finance TVET. Unfortunately, this task is made more difficult by the exceptionally high level of fragmentation that characterizes TVET, both inside and outside the formal education system. The potential for market failures that lead to a suboptimal level of investment is therefore substantial. This situation argues for the State to play a key role in providing the necessary governance of the market as well as in mobilizing the financing required to overcome these market failures.

The focus of this paper is therefore to review initial financing for education and TVET in Latin America and the Caribbean, which is defined as those resources that derive directly from governments, households and firms, with the aim to support the formulation of a TVET financing framework for the region.

Introduction

The 2030 Agenda for Sustainable Development offers countries in the region the opportunity to substantially remake their development policies, in line with the Sustainable Development Goals. New public policies are needed not only to address existing socio-economic gaps, but to place countries on a sustainable and inclusive growth trajectory. In this context, a key pre-requisite for achieving these goals is accessible and inclusive quality education (SDG 4). Research has shown that investments in human capital —by the public sector, by firms and by households— have a significant impact on economic performance as well as individual and social wellbeing.

The role of technical and vocation education and training (TVET) in this process is key, especially as the global and regional economy undergoes significant changes. The world of work is evolving rapidly, as productive structures adapt to the shifts induced by the emergence of new technologies and new business models. Skills in this environment tend to depreciate quickly and therefore must be continually updated. In this sense, TVET provides opportunities to transition students into this new world of work as well as keeping existing workers employed. TVET targeted to women, youth, senior citizens and other vulnerable populations also provides governments with significant leverage to reduce inequality and poverty.

To realize these benefits, however, will require a substantial commitment by governments, households and firms to finance TVET. Unfortunately, this task is made more difficult by the exceptionally high level of fragmentation that characterizes TVET, both inside and outside the formal education system. The potential for market failures that lead to a suboptimal level of investment is therefore substantial. This situation argues for the State to play a key role in providing the necessary governance of the market as well as in mobilizing the financing necessary to overcome these market failures.

Addressing this funding commitment in Latin America and the Caribbean will be a considerable challenge. The adoption of the 2030 Agenda for Sustainable Development has

coincided with a deterioration of the region's macroeconomic fundamentals. Slowing growth, even outright recession in some countries, as well as considerable fiscal imbalances have limited policy space. In response, many countries in the region have adopted fiscal consolidation measures that have served to cut government spending, initially in public investment but now increasingly in other areas, including social spending.

In this context, the aim of this paper is to provide an overview of the current state of financing for education and TVET in the region. Given the wide scope of this topic, it is necessary to apply a specific lens to the analysis. The focus of this paper is therefore to review initial financing for education and TVET, which is defined as those resources that derive directly from governments, households and firms. Transfers of resources—for example, scholarships, vouchers, other subsidies—and the final expenditures on education and TVET are therefore excluded from the present analysis.

The paper is structured in the following manner. Section I provides the context for the analysis by examining the definition of TVET and the rationales for investment. Section II reviews the theoretical framework for education and TVET finance as well as an examination of the principal financing modalities. Section III analyses the initial financing for education and TVET in Latin America and the Caribbean of the principal actors in the TVET market: government, households, firms, and other international partners and investors. Finally, section IV concludes with identifying some key topics for consideration in the evaluation and formulation of new education and TVET financing policies.

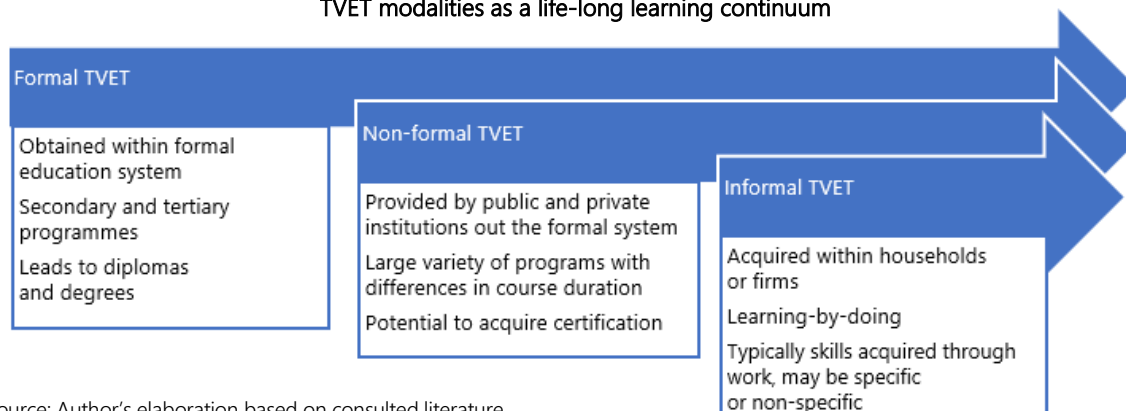
I. Technical and vocational education and training (TVET): definitions and rationales for investment

A. What is TVET?

Technical and vocational education and training (TVET) is defined by UNESCO (1984) as “those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life.” As diagram 1 highlights, this definition is sufficiently broad that it covers a spectrum of education and training from formal (TVET offered within the formal educational system) to non-formal (TVET provided to those outside the formal educational system) and ending at in-formal (TVET associated with learning by doing and personal skills acquisition). TVET is therefore a process of life-long learning that undergirds the social and economic well-being of the economy, in as much as it is a key force for human capital formation.

Formal TVET refers to technical and professional programmes offered within the formal education system, which lead to degrees or other types of certifications. At the secondary level TVET specific tracks are typically offered to upper-secondary students, although in some countries programmes exist at the lower-secondary level as well. Beyond formal TVET at the secondary level, students can enter post-secondary non-tertiary TVET programmes that offer access to certifications in specific occupations and or skills. Finally, tertiary TVET programmes offer degrees that are equivalent to a bachelor’s degree.

Diagram 1
TVET modalities as a life-long learning continuum



Source: Author's elaboration based on consulted literature.

Non-formal TVET refers to training and education offered outside the formal educational system. Entry into these programmes does not necessarily depend on the completion of formal education. Non-formal TVET is provided by a wide variety of actors, including national training institutes—the historical hubs of the Latin American model—, private institutes and training within firms. Unlike formal TVET, which often leads to a diploma or a certification at the completion of studies, non-formal programmes may increase skills and employability, but do not necessarily certify the education received.

Informal TVET is principally the domain of learning-by-doing skills acquisition. Experience derived from practicing a trade or by working with others can lead to the acquisition of skills that increase the productivity of the person learning and therefore, presumably, their well-being. This form of learning is common in the world of work, especially in entry level jobs and low-skilled work, where the necessary knowledge to carry out tasks is not complex. This form of TVET is extremely difficult to evaluate and nearly impossible to quantify.

B. Rationales for investment in TVET

From the perspective of society TVET represents not only a key investment in human capital, but also a means by which individuals can transition to decent work. In that context, there are strong rationales for greater investment in TVET both in terms of achieving key societal goals as well as generating positive economic benefits.

The **social rationale** for TVET is grounded in the key principals that are enshrined in the Sustainable Development Goals, such as promoting decent and productive employment, reducing inequality and tackling poverty. Education and TVET equip individuals with the skills necessary to navigate the rapidly evolving world of work. This is especially important for unemployed workers displaced from traditional industries and for populations that are less likely to be attached to the labour market. In a similar way investment in education and TVET can also provide significant leverage on reducing inequality, not only in terms of income but of opportunity, and poverty by targeting TVET programmes to improve access for women, senior citizens, youth and other vulnerable populations.

There is also a strong case for the **economic rationale** for TVET as well, as it generates benefits that accrue to individuals, firms and the economy as a whole (Blundell et al., 2005). An extensive economic literature exists that is devoted to the measurement of the private individual returns to education. Much of this literature is based on the seminal work of Jacob Mincer (1958), who developed an earnings function that in its most basic formulation models hourly wages as a function of education and labour market experience.

A recent comprehensive study based on a Mincerian model found that at the global level an additional year of education results on average results in a 9.7% increase in hourly earnings (Montenegro and Patrinos, 2014). The authors of this study find that there is significant variation across regions, with some regions registering results lower than the global average: Middle East and North Africa (6.5%) and South Asia (7.2%). Additionally, there is a difference in the returns to education based on gender. At the global level, women see their average wages rise 11.5% for each year of additional education, whereas the equivalent increase for men is 9.1%.

Private returns to TVET are consistent with the rates of return for education as a whole, though they can vary depending on the type and length of a given programme. An analysis of European countries found that the rate of return for an additional year of TVET—in an aggregate sense as the study could not differentiate by programme—was comparable to that of tertiary education at roughly 7% for both men and women (Cedefop—European Centre for the Development of Vocational Training, 2011). Taking into account the shorter duration of TVET courses the adjusted rate of return rose to 10% for men and 7% for women.

However, private returns to TVET are strongly conditioned on the occupational field, the length of the programme and the type of certification or degree received upon completion. Stevens, et al., (2015) find that the average rate of return for career technical education programmes at community colleges in the California Community College system span a range that runs from 14% for short-term certification programmes to 45% for associate degrees. This result is largely driven by returns to training in healthcare related occupations, where estimated returns ranged from 12% to 99%, depending on the certification or degree received. In contrast, private returns to additional education in non-healthcare related TVET programs were calculated to be between 15% and 23%.

Studies on the returns on investment for training by firms vary significantly, depending on type of firm undertaking the investment and the kind of training provided. A study by Mincer (1989) found that returns to employers were significant (with an upper limit of 23.6%), but that they were sensitive to the length of time the trainee stays with the firm and how fast their training becomes obsolete (depreciates). A recent study based on detailed microdata for Portuguese firms that included specific information on training expenses found that the internal rate of return for investments in human capital by firms providing training was between 17% and 24% (Almeida and Carneiro, 2006). Despite these high rates of return the authors found that on average firms in the sample dedicated less than 1% of total work hours to training.

At the macroeconomic level the importance of education as a determinant of economic growth is firmly established in the endogenous growth models, which posit that investment in human capital is the key contributor to long-term economic growth (Romer, 1986; Lucas, 1988; Becker, Murphy and Tamura, 1990). While econometric analysis of this relationship have shown mixed results, recent work that incorporate more appropriate proxies of human capital more firmly establish the positive contribution of education and cognitive ability to economic growth (Hanushek and Woessmann, 2012).

II. Theoretical framework for TVET finance

A. Models for the provision of education and TVET services

Models for the provision of education and TVET services can vary widely, although in theoretical terms, it is potentially useful to envision three main types: first, a completely centralized model where the State both finances and provides TVET; second, a completely market based model, where State intervention is minimal and individuals and firms establish the supply and demand for formal and non-formal TVET in the marketplace; and third, a mixed model where both the State and the private sector are involved in the financing and the supply of TVET. At its most fundamental level, these differences in models are based on what is the perceived role of the State in the provision of education and TVET: should the State increase supply or create demand, or both or neither?

In a centralized model, the State determines the supply of TVET and its financing. This model is most strongly associated with the provision of TVET through the formal education system, where public institutions play a predominant role, and in non-formal TVET through national training institutions. Decisions about the funding of TVET are largely determined at the aggregate level. This model is largely focussed on outputs, rather than outcomes, which is reflected in indicators in countries' results-based budgeting reports that often highlight the absolute number of participants in programmes, regardless of the result of that education on labour market outcomes.

At the other extreme, a purely market-based model leaves the supply and demand for TVET to be determined by market forces. Individuals and other private entities —firms or non-governmental organizations, for example— enter the market making use of their own resources, and perhaps with minimal support of the public sector, to purchase educational services from private —or potentially public— providers. Private TVET providers in turn can be for-profit or non-profit entities, whose training offer responds to the overall demand for their services. In this model,

the market for TVET may potentially be more dynamic than in a centralized model, responding with greater ease to changes in economic and labour market conditions.

A mixed model of TVET incorporates aspects of the previous two approaches, creating a market that encompasses both public and private actors. While Ministries of Education or special TVET councils—which can include participants from the public and private sectors— provide governance of the TVET market, the market can suffer from significant coordination problems arising from the large variety of programmes on offer and the various actors that participate in the market. This notwithstanding, the public sector in this model plays an important role in mobilizing resources and offering formal and non-formal educational services—especially in countries where free public education is a constitutionally guaranteed right. In turn, private providers respond to the demand for their services, which are purchased by households or firms, in some cases making use of financing obtained from the public sector.

A key aspect of a mixed model of TVET provision is that households and firms can make their own decisions related to the consumption of educational services. These decisions include the most basic, such as to participate or not in the TVET market, whether to follow formal secondary and tertiary TVET programmes or to enrol in a non-formal institute, and if they should attend public or private institutions, among others. To that end, the funding mechanisms adopted by the State within this approach can have a strong impact on the eventual shape of the market, its dynamics and the expectations of participants and providers.

B. Justifications for public sector intervention in education and TVET financing in a mixed market

As described above, the prevailing mixed model market is characterized by a high level of complexity, which leaves it susceptible to numerous market failures. These market failures can inhibit investment in education and TVET by households and firms. Given the strong rationales for TVET, there is a strong case for the public sector to take a key role in providing initial financing—which can subsequently be deployed—to ensure that the market clears at an optimal equilibrium.

In the literature, one of the principal justifications for the intervention of the State in the economy is to correct market failures—such as the existence of externalities, asymmetries of information and economies of scale, among others—to ensure that resources are allocated efficiently. Under this supposition the adoption of a specific public policy can result in a Pareto improvement that moves the economy closer to its optimal allocation of resources and thereby achieve the greatest social benefit.

Perhaps the principal cause of TVET market failure is the existence of **externalities**. Key among these is that the social returns to higher TVET investment is greater than those accruing to individuals or firms. The social returns to the positive externalities of TVET—stronger economic growth, higher productivity, increased tax revenues, more productive employment, among others—are significant. As a result, TVET markets are frequently characterized by underinvestment, leading to a socially suboptimal equilibrium.

Imperfect information about the returns on TVET investment can reinforce underinvestment in the market. To the extent that individuals or firms do not have the needed information to judge the potential benefit of an investment in TVET—in terms of gaining employment, obtaining higher

wages, improving productivity— their appraisal of the returns on that investment may be significantly biased. In the case of households, the lack of labour market information, especially related to skills demand and wage information, also diminishes the perceived benefits of investing in a particular TVET programme.

TVET investment can also be affected by **asymmetric information**, which can give rise to potential **capital market imperfections** that reduce the willingness of the financial sector to provide financing to households and firms. Lending institutions may be unable to adequately quantify the potential return to the TVET investment, leading to the use of higher interest rates than normal in order to protect themselves from potential **adverse selection**. In turn, higher interest rates on loans further reduces the potential returns, at least in the short-term, for those making a TVET investment.

Significantly tied to the preceding factors is the inherent **risk aversion** of market participants. Individuals' and firms' uncertainty about the outcomes of their investment, especially as related to its size in monetary terms, is a significant limitation to TVET investment. This is especially true for individuals and households, where a TVET investment that does not result in employment with higher wages and benefits can undermine their financial wellbeing, potentially with long-term negative effects.

In a similar way, suboptimal TVET market equilibriums can also occur when firms seek to hire high skill workers that were trained by their previous employer. This form of **poaching** leads firms to underinvest in TVET as they fear that they may not be able to realize the benefits of their investment before the individual potentially leaves the company. While this phenomenon has serious microeconomic implications —lower productivity and competitiveness of firms— it also limits the ability of individuals to leverage their training to advance in their careers in the labour market. If workers are only trained in firm-specific or very general skills there is little opportunity to make use of them in another setting, especially if this training does not result in a certification that is recognized by other employers or educational institutions.

Education and TVET markets are also not immune to negative impacts on **equality** and **fairness**. Potential students may face large barriers to entry into TVET markets, not only in terms of mobilizing the necessary financing, but also due to other factors such as gender, race or ethnicity. Limited access therefore serves to reinforce the socio-economic conditions that TVET seeks to reverse. Government intervention can play a key role in lowering these barriers, incentivizing further investment.

While the intervention of the State may attenuate these market failures and move the TVET market to a more optimal equilibrium, it can also create its own distortions. Public policies are not neutral, and they can both positively and negatively impact the incentives of the different actors in the TVET market. For example, while a strong push to provide TVET through public institutions may encourage households to participate in the market, it can also lead to a potential **free-rider** problem as firms benefit from the provision of this public good without themselves providing additional financing.

The intervention of State in capital markets, by guaranteeing loans for example, can lower interest rates and allow households greater access to needed financing, but it may also lead to **moral hazard** problems as financial institutions may engage in risky lending knowing that the public sector will cover their losses.

Public financing policies can also give rise to an inefficient allocation of resources if they flow to actors who would have made the TVET investment in the absence of a transfer payment or a tax benefit. Direct public spending programs must target their population carefully to make sure that the transfers of resources from initial financing result in the largest potential participation in the TVET market, especially from women, youth and other vulnerable populations. Preferential tax treatments, essentially public spending through the tax system, is especially difficult to target and often benefits households that are least in need of additional financing (IMF, 2011).

A **lack of coordination** between education and TVET financing policies can also lead to a suboptimal allocation of resources. Many public spending and tax policies share policy objectives but may not necessarily be fully integrated within a single framework in such a way as to maximize their impact (Office of Management and Budget, 2012). Cost-benefit analysis, infrequently used in policy consideration in Latin America and the Caribbean, may find that a different combination of policies would result in a more effective allocation of resources (ECLAC, 2019). In the case of TVET this kind of analysis is hampered by the lack of systematic statistic and financial information of the market.

Funding mechanisms that provide the resources for initial funding policies can also generate **economic distortions** that have important social and macroeconomic consequences. In the economic literature, payroll taxes—which are often employed to finance non-formal TVET—can have a negative effect on employment and wages (Kugler and Kugler, 2008; Antón, 2014). To the extent that general taxation finances TVET, a tax structure based heavily on consumption taxes can hurt lower-income households, leaving them with few resources to invest.

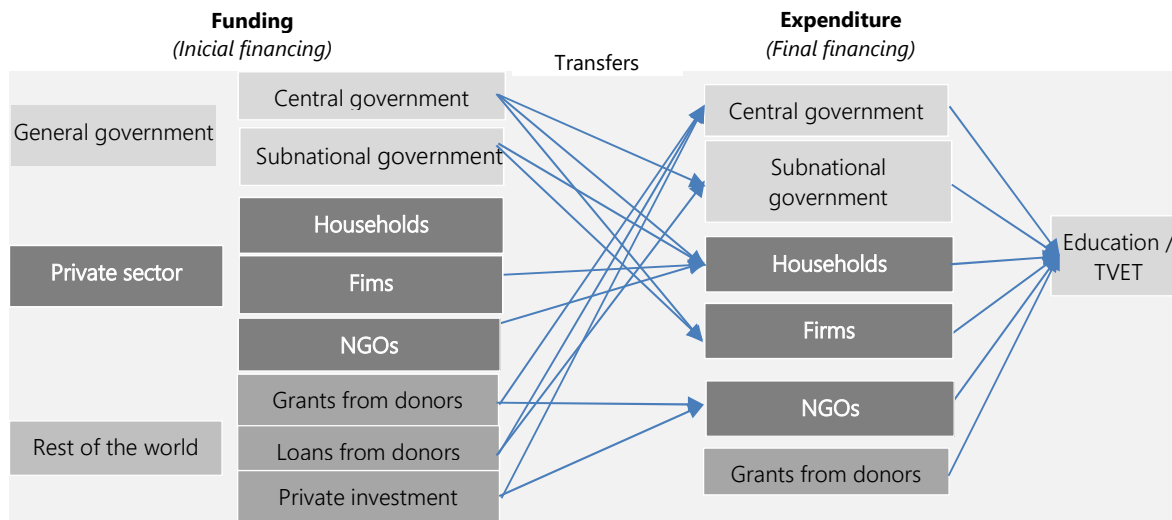
From a public economics standpoint the **budgetary efficiency** of education and TVET financing policies must also be considered. Many governments employ spending targets or earmark tax revenues to mobilize resources for education initial financing. These measures can serve as practical tools to ensure a high level of resources are channelled toward the creation of public goods and services in the area of education. However, they also create significant budgetary rigidities that limit the policy space of countries, especially in times of fiscal consolidation (Marcel et. al, 2014; Cetrángolo y Jimenez, 2009).

C. Education and TVET financing modalities

Developing TVET financing policies is necessarily a multidimensional exercise, reflecting the varied nature of the educational ambits involved—formal and non-formal—as well as the multiple actors who interact in the TVET market. To appreciate this complexity, it is useful to separate the initial financing for TVET (who pays) from final financing (who spends). This distinction is important as initial financing is defined as the education financing that each actor allocates based on their own resources (that is net of transfers received by others). Final financing, in contrast, refers to the final expenditure by each actor including the transfers that they receive from other entities.

As Diagram 2 shows, there is a dense web of potential interactions between those actors who provide the funding for TVET and those who finally spend those resources. While in some cases the actors involved may be the same—for example, the central government both provides initial financing as well as makes final expenditures—a mixed model for TVET provision makes extensive use of transfers to channel initial finance to the final expenditure by other actors.

Diagram 2
Schematic of education and TVET funding and expenditure



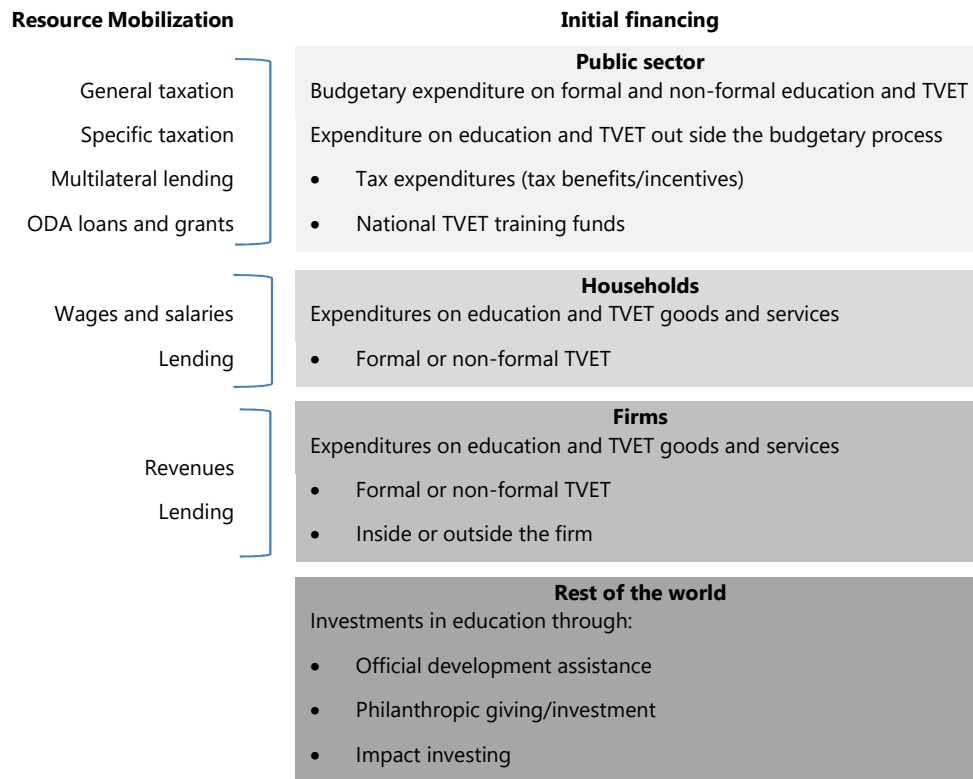
Source: Author's elaboration, adapted from UNESCO Institute for Statistics (2016).

The analysis of these interactions is often hampered by a lack of data. Government budgets can provide some insights into the magnitude of overall spending for more aggregate categories of education but lack sufficient detail to identify TVET specific financing. Few budgets relate the original funding source that gave rise to the government's financing for education or TVET. Some countries do publish data through online budget transparency portals that can link financing with expenditures, but at a very aggregated level (UNESCO Institute for Statistics, 2016).

Data on TVET investments by households and firms are even less available for analysis. Available information generally comes from nonrecurrent surveys of firms or is inferred from household consumption surveys. The reliability of these statistics as a gauge of TVET financing is often compromised by the fact that they do not take into account the transfers received from other stakeholders in the TVET market, thus essentially confusing final expenditure for initial expenditure leading to double-counting.

These statistical shortcomings notwithstanding, it is useful to contextualize the specific modalities of initial education and TVET finance for each of the actors in the market. Arguably the most importance of these is the public sector, given not only its predominant role in funding formal education, but also its role as coordinator and regulator of the education and TVET markets. However, households and firms also play an important role in providing initial finance, especially for non-formal TVET. At the risk of oversimplifying, diagram 3 provides a stylized representation of the principal resource flows and initial financing provided by the public sector, households, firms and external financiers.

Diagram 3
Stylized representation of resource mobilization and initial financing by actor



Source: Author's elaboration.

From the perspective of the **public sector**, **resource mobilization** efforts largely rest on domestic resources or lending from foreign or domestic financial institutions. General tax revenues provide the principal source of domestic resources, although some countries levy specific taxes whose revenues are ear-marked for education and or TVET. Lending, especially from multilateral institutions such as the World Bank can also a source of resources, especially for financing key investments. There is also some scope for tapping private investors to complement the provision of education services, but this modality is still in its infancy (see box 1).

Box 1

Social impact bonds and human capital performance bonds

In recent years there has been increasing interest in leveraging private finance to channel resources to the provision of social services. Two of the modalities that have emerged in recent years are social impact bonds (SIBs) and human capital performance bonds. These instruments allow governments to shift the risk associated with certain investments to other entities, while allowing private investors to create a measurable social impact while realizing a financial return (Rothschild, 2013).

A SIB is a funding mechanism by which governments enter into agreements with social service providers — such as social enterprises or non-governmental organizations— and investors to pay for the delivery of pre-defined social outcomes (OECD, 2015). Conceptually, a financial institution issues a bond to private investors, the proceeds of which fund the operation expenses of the service provider. If the measurable outcomes are achieved the government pays back the bond.

The use of social impact bonds has grown in recent years, and is under consideration in countries such as Australia, Canada, Colombia, India, Ireland, and Israel (Azemati et al., 2013).

Source: Author's elaboration.

The proceeds of resource mobilization efforts may not necessarily equate to public sector initial financing for education and TVET. Within the ambit of non-formal TVET, payroll taxes are a common resource mobilization instrument. Some countries have implemented national training funds where revenues from payroll taxes, among others, are deposited and used to finance TVET expenditures outside the regular government budgetary process (Johanson, 2009). Financing provided by the funds can provide core funding to largely public institutions to provide pre-employment training or to incentivize enterprise-based training (box 2).

Box 2
Enterprise training funds

Enterprise training funds can be used to bolster training within firms. The bulk of financing for these funds derives from payroll taxes (levies) paid by firms, although these funds can also benefit from government transfers and donations from third-parties. The use of these funds depends on the kind of model adopted by the fund. Three common modalities are:

- Cost reimbursement model: qualified training expenses can be reimbursed from the payroll tax paid by the enterprise. These reimbursements are usually limited to ensure that the fund maintains sufficient liquidity to cover administrative costs.
- Levy-grant model: revenues generated by payroll taxes are deposited in the fund and grants are extended to enterprises on a case-by-case basis. The level of the grant is not necessarily limited by the levy contributions by the enterprise to the fund, creating an incentive to make larger investments in training.
- Levy-exemption model: enterprises are exempted from the payment of the payroll tax to the extent that they provided approved training to their employees. Typically, the government fixes the percentage of the payroll that must be dedicated to training or transferred to the training fund.

Source: Johanson (2009).

Additionally, tax expenditures —tax benefits and preferential tax treatments— should also be considered as public sector initial education and TVET financing to the extent that they represent government spending through the tax system outside the normal budgetary process. These foregone revenues can increase the rate of return on TVET investments by households and firms. For households these measures typically take the form of personal income tax deductions or credits for education expenditures. Tax incentives for firms largely seek to promote training within firms or in qualified TVET institutions.

Initial financing of the formal education system —and in some countries the public providers of non-formal TVET— by the public sector is largely the domain of Ministries of Education, who receive their resources through the regular budgetary process, which in turn determines the

allocation of revenues mobilized from general taxes and other sources. While education funding must compete with other interests within the budget process, an increasing number of countries have adopted spending targets for education outlays, including that of 6% of GDP enshrined in various intergovernmental agreements.

Public non-formal TVET providers—typically national training institutions— can also seek to bolster their initial financing by diversifying their revenue sources with the aim to achieve long-term sustainability (Antón, 2014). These options can include: the sale of goods and services generated through the training process; renting equipment and facilities to private enterprises; and, delivering services outside of the institute’s premise, among others (Uher, 2017). There is also significant scope for mobilizing initial financing through partnerships with the private sector (box 3).

Box 3

The German dual system model

The combination of vocational education and work experience has been the hallmark of the German dual system. Students exiting compulsory education can opt to enter the dual system of education and training, where they work as apprentices as well as attend courses in a formal setting. Roughly 70% of the training occurs within firms, while the remainder occurs in formal vocational institutions which provide training courses and general education. There are currently more than 300 recognized training occupations that are qualified for the dual system approach. Students in these programs participate for two to three and a half years, after which they are highly skilled and ready to immediately enter the labour force.

Financing for dual systems is provided by the State and by firms. The public sector provides the initial financing to cover the TVET expenses related to the coursework completed within the formal education system. In turn, the firms provide initial financing for the training provided to students, which is compensated in part by the payment of lower wages—a training allowance that increase over time—as well as the work carried out by the student.

In 2016 public and private spending on dual TVET in Germany reached 12.5 billion euros, equivalent to 0.39% of GDP. Of this amount, public sector expenditure was 4.75 billion euros (0.15% of GDP). The employers share—measured in net terms— was 7.7 billion euros (0.24% of GDP), equivalent to 62% of the total expenditure of dual TVET.

Source: Author’s elaboration, based on BIBB (2017).

Within the **private sector**—spanning households, firms and NGOs— **initial financing**, beyond their general tax obligations, is closely associated with the income generation capabilities of each actor. An important distinction is that initial financing for private entities is net of transfers. Households generate their resources through wage and salary work or through self-employment. Firms provide initial financing for TVET, both inside and outside the enterprise, out of their own revenues. NGOs, likewise generate resources through their operations, mainly by fund raising.

Resources for education and TVET can also be mobilized from the **rest of the world**. One common modality has been through official development aid (ODA),¹ although its relatively small size and high volatility limits its ability to play a sustained role in education finance. It can, however,

¹ Official development assistance (ODA) is defined as resource flows to countries and territories and multinational organizations that are provided by official government agencies and are concessional (grants and soft loans) and administrated with the promotion of the economic development and welfare of developing countries as the main objective (OECD, 2018).

play a catalytic role by financing key projects that unlock further investment within the education sector. However, the effectiveness of ODA remains a topic of ongoing debate in international circles (Heynemann and Lee, 2016).

International private sector investment in education is a topic of growing interest, though not without its detractors. One of these channels is private philanthropic flows for development which the OECD (2018) defines as transactions from the private sector that promote economic development and welfare in developing countries as their main objective, and which originate from the foundations' own resources (endowments, donations, etc). While these transactions are relatively modest in size, compared to official development assistance, in some sectors they are important, especially in health. Financing for education is not insignificant, but it is far exceeded by flows targeting healthcare.

Another form of private sector financing that has grown in prominence in recent years is impact investing. Private investors who engage in impact investing seek to generate a measurable development impact as well as a financial return (OECD, 2019). The Global Impact Investing Network (2018) estimates that surveyed investors were managing US\$ 228 billion in impact investing assets in 2017. Of this amount, roughly US\$ 9 billion was allocated to education. To some extent this result represents the difficulties that impact investors face when approaching potential projects in developing countries. Beyond identifying appropriate interventions there are many other factors outside the control of any given investment that can determine the success or failure of an investment.²

Private providers of education and TVET services can also mobilize resources in support of their initial financing by leveraging the financial services provided by the International Finance Corporation (IFC). While the IFC is a member of the World Bank Group of organizations, it is effectively independent and functions as an international financial services provider. The IFC focusses on financing private sector investment, mobilizing capital in international financial markets, providing advisory services and risk-mitigation services to governments and private sector entities, and managing assets for third-party entities. Education makes a relatively small share of the organization's portfolio, but of that amount 75% are in TVET and tertiary education.

² These can include such varied factors such as from menstrual hygiene and nutrition to cultural resistance to school attendance and difficulties in recruiting teachers. See: <https://www.ft.com/content/4f9ad318-786d-11e8-af48-190d103e32a4>.

III. Education and TVET financing in Latin America and the Caribbean

A. Scope of analysis

Given the complexities of education and TVET financing it is necessary to limit the analysis in this report to resource mobilization and initial financing. Transfers and final expenditure are therefore not examined, although they play an important role in shaping the education and TVET markets, especially in mixed models where individuals can choose where to obtain their training, both in the formal system as well as in the non-formal market. Because of the focus on initial financing much of the statistical and financial information available is related to the public sector. However, initial financing provided by households and firms, as well as actors beyond the frontiers of an individual country will be explored. To that end, the following definitions based on international standards guide the presentation of data that follows.

Public expenditure —initial financing— refers to spending of public authorities at all levels of government, including by ministries and institutions whose mandate is not related education (Health, Agriculture, Military). It includes financing for purposes such as the direct expenditure on educational institutions, intergovernmental transfers for education, and transfers or other payments to households and other private entities. Educational statistics provided by UNESCO and the OECD are limited in scope to the formal sector and do not consider public expenditure through tax benefits. The analysis presented in this report will include both of these items.

Initial financing of household expenditures refers to the use of their own resources —excluding transfers from the public sector, households or other private entities— on costs such as the purchase on educational goods and services, fees for ancillary services —lodging, meals,

health services or other welfare services— furnished by educational institutions and transfers to other households.

Initial financing by other private entities —firms, NGOs, charities, religious organizations— include direct payments to educational institutions and subsidies to students or households that originate from their own resources (excluding any subsidies or other transfers that they may receive). From the perspective of formal TVET, international education statistical guidelines state that these expenditures include contributions or subsidies to vocational and technical schools by business or labour organisations; and, expenditure by private employers on the training of apprentices and other participants in mixed school —and work— based educational programmes. Financing for training within the firm is not included in international statistics but will be examined in this report.

In terms of initial financing provided by the rest of the world —official development assistance, philanthropic investing and impact investment— are essentially analysed from the standpoint of investments in individual projects. Resources provided to governments to support their budgets by external actors are considered to be part of the initial financing of the domestic public sector.

B. Public sector

1. Resource mobilization

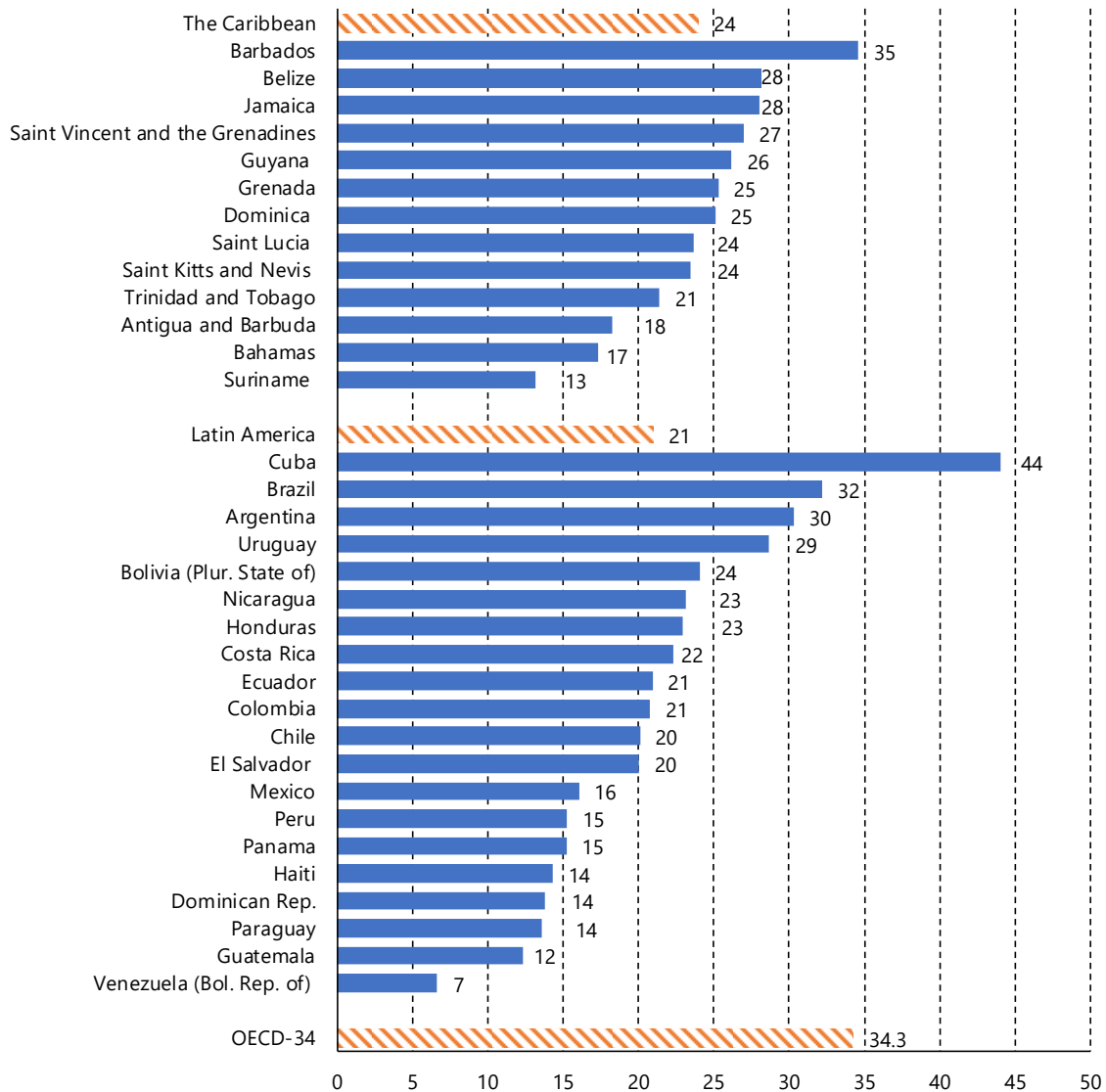
Financing of formal sector education and TVET is largely the province of central and, to a lesser extent, subnational governments in the region. Public sector education expenditures —including for TVET in the formal system— are financed nearly entirely out of the general budget of the government, channelled typically through Ministries of Education. The resources at the disposal of the region's governments in turn stems principally from tax revenues. Thus, it is useful to consider governments as facilitating the movement of resources from households and private sector entities —in the form of tax revenues— toward specific ends, in this case education and TVET.

This section reviews the composition of funds available to finance education and TVET expenditures from the perspective of the public sector in the region. The first section provides an overview of general tax revenues in Latin America and the Caribbean. The second section examines specific education and TVET tax instruments and revenues they generate. The third section reviews the possibility of own financing by TVET institutions through the sale of goods and services. Finally, the fourth section reviews multilateral lending for education and TVET in the region.

(a) General government taxation

General government tax revenues in Latin America and the Caribbean are significantly heterogenous, exhibiting a wide range of levels by country (figure 1). In aggregate terms the subregional average tax pressure for Latin America (21% of GDP) and the Caribbean (24% of GDP) are significantly below the average for the countries of the OECD (34% of GDP). However, within each group there are a number of countries with tax takes that approach the OECD average: namely Argentina, Bolivia, Brazil, Cuba and Uruguay in Latin America; and, Barbados, Belize and Jamaica in the Caribbean. There are also a large number of countries where the tax take is well below the level of 20% of GDP that was considered to be necessary to finance the Millennium Development Goals (UNDP, 2010).

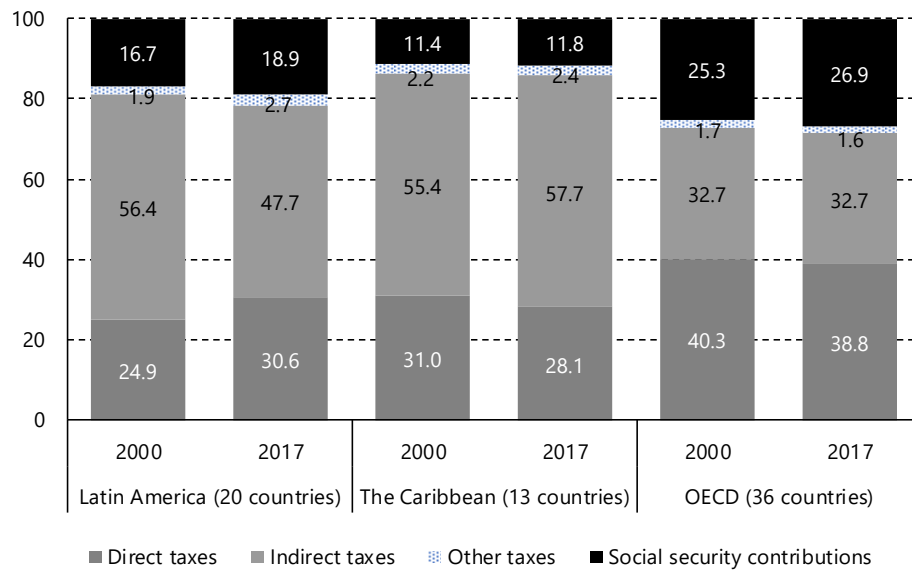
Figure 1
Latin America and the Caribbean: total tax revenues, 2017
(Percentages of GDP)



Source: Author's elaboration, on the basis of data from CEPALSTAT.

The structure of tax revenues also has important implications on the stability of revenues sources and their impact on the economy at large. As figure 2 shows, tax revenues in Latin America and the Caribbean are highly weighted to indirect taxes (48% and 58%, respectively), such as those on the consumption of goods and services. These taxes tend to be regressive in nature, as their incidence as a share of the taxpayer's income is greater for lower income individuals than that for those with higher incomes. However, indirect taxes are also relatively easier to administrate and generate significant revenues. For that reason, tax reforms aimed at closing budgetary shortfalls often resort to increases in indirect taxes: often in the form of an increase in the value-added tax rate.

Figure 2
Latin America and the Caribbean and OECD: structure of tax revenues, 2017
(Percentages)



Source: Author’s elaboration, on the basis of data from CEPALSTAT (Latin America and the Caribbean) and OECD.stat (OECD).
 Note: Data for the OECD refer to 2016.

Direct taxation, in turn, plays a lesser role (31% and 28%, respectively). Personal income taxation in the region is particularly weak, accounting for just 31% of income tax revenues and just 8% of region’s total tax take on average. Social security contributions in the region are also relatively low in comparison with OECD members, reflecting underdeveloped social protection floors and pension and health systems, as well as the existence of privately financed pension systems in some countries.

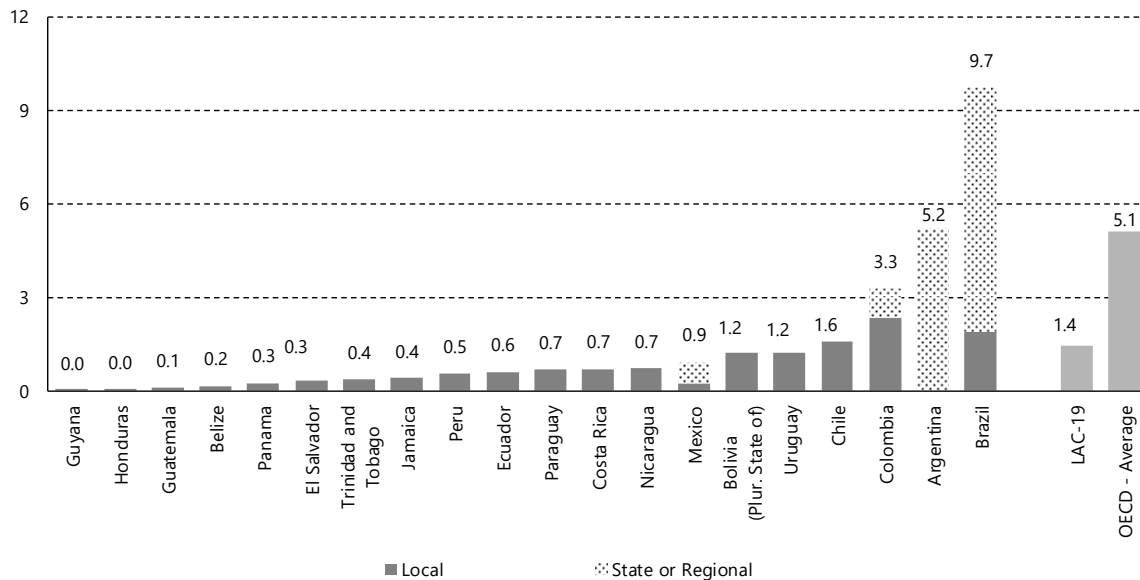
Tax revenues in OECD member countries are much more balanced. Direct taxes account for the great share of overall tax revenues (39%). The personal income tax plays a predominant role, accounting for, on average, 67% of total income tax receipts and 28% of total tax revenues for the average of OECD members. Robust revenues from social security contributions highlight the important role of social security and welfare programmes within this group of industrialized high-income countries.

The large difference in the role of the personal income tax are reflected in the ability of the tax system to reduce income inequality in both groups of economies. Although countries in Latin America and in the OECD have similar levels of market income inequality, the impact of fiscal policy creates largely different outcomes. Among OECD countries the personal income tax reduces income inequality 36% (as measured by the Gini coefficient), compared to just 6% in Latin American countries (Hanni, Martner Fanta and Podestá, 2015).

Mobilization of tax revenues by the region’s subnational governments is limited. This comes somewhat at odds with the high level of decentralization in the provision of public goods and services that has occurred in the region (Gómez Sabaini and Jiménez, 2017). As figure 3 shows, on average subnational governments in Latin American and the Caribbean collected 1.4%

of GDP in 2016, compared to an average of 5.1% of GDP for OECD countries. Federal countries in the region —namely Argentina and Brazil— generated tax revenues in line with the OECD average. In contrast, the majority of the remain countries had tax revenues that were below the regional average, reflecting the skew induced by the Argentina and Brazil.

Figure 3
Latin America and the Caribbean and OECD: subnational tax revenues, 2016
(Percentages of GDP)

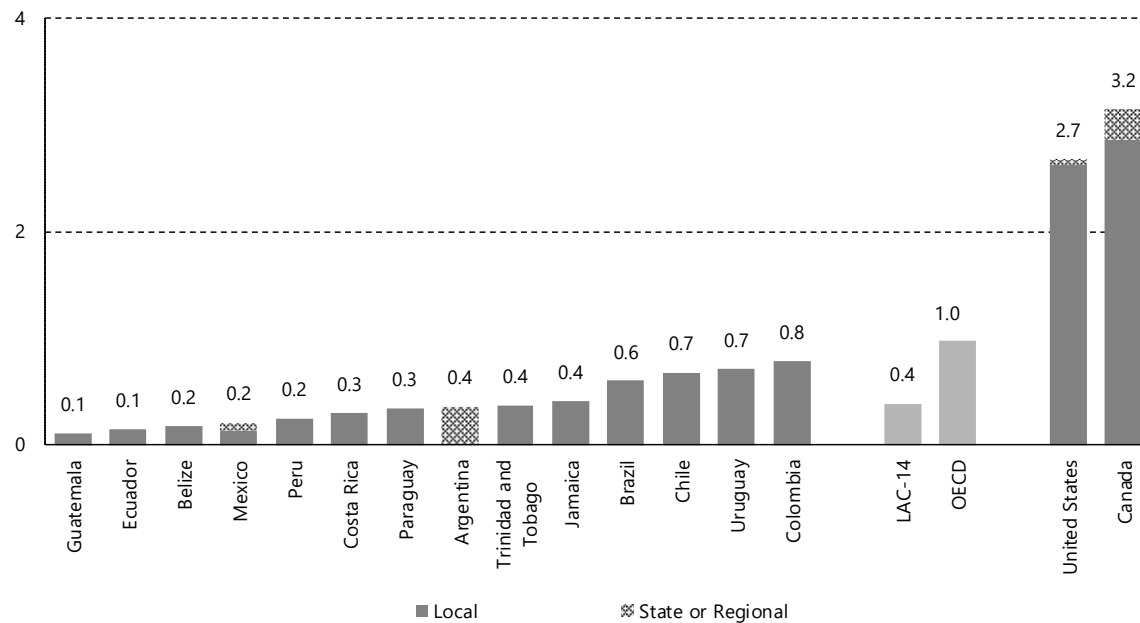


Source: Author's elaboration based on data from OECD.stat.

Taxation of property is particularly weak in the region, which may arise from inadequate revenue autonomy (incomplete fiscal decentralization) and to insufficiently developed administrative and technical capacities (Sepulveda and Martinez-Vazquez, 2012). As seen in figure 4, subnational government revenues from recurrent taxes on immovable property average 0.4% of GDP (equivalent to 57% of total tax revenues of this level of government). Only 4 of the 14 countries under consideration had revenues above the regional average.

In contrast, among OECD countries these taxes average 1.0% of GDP (25% of local government tax revenues). However, some countries within the OECD produce much larger revenues from these taxes, the most prominent of these being Canada (3.2% of GDP) and the United States (2.7% of GDP). It is important to note that in the case of the United States roughly half of property tax receipts are channelled to public education, which represent more than 80% of financing for public primary and secondary education (Kenyon and Reschovsky, 2014).

Figure 4
Latin America and the Caribbean and OECD: subnational tax revenues from immovable property, 2016
(Percentages of GDP)



Source: Author's elaboration based on data from OECD.stat.

(b) Education and TVET specific taxation

While general taxation is the dominant form of financing the general budget of a government, and thus for formal education systems in general, in some countries these revenues are complemented by tax receipts from education and TVET specific tax instruments. The resources derived from these revenues are either entirely or in part ear-marked for use to finance public educational expenditures. In the region these specific taxes largely fall into two categories: those that finance education in general and those that fund TVET programmes (largely those outside the formal education system).

A survey of taxes in the region finds few specific taxes that fund general education.³ Table 1 provides a few examples of these taxes from which some general observations can be drawn. First, they are significantly heterogenous, with different tax bases and forms of calculation. In Costa Rica and Uruguay these specific levies can be broadly be classified as property taxes, although with different types of tax payers (corporations versus individuals) and tax bases (net capital versus immovable property). In contrast, the tax instrument employed in Brazil and Panama is a payroll tax applied to employers, and in the case of Panama also employees.

³ Jamaica has an Education Tax, levied on gross earnings of workers and on payroll of employers, but the funds from this instrument are not ear-marked for education, rather they are deposited in the government's general fund.

Table 1
Latin America (selected countries): specific tax instruments to finance education

Country	Tax name	Kind of tax	Use	Revenues (2017)
Brazil	Salário-Educação (Education wage tax)	Payroll (employers: 2.5% of payroll)	Financing of primary education	0.3% of GDP
Costa Rica	Timbre para la Educación y Cultura	Asset tax (Companies are subject to an annual tax, with progressive rates, on their net capital)	The distribution of revenues is the following: <ul style="list-style-type: none"> - 60% for the Universidad de Costa Rica. - 30% for the Universidad Estatal a Distancia. - 10% to the Board of Trustees of the National Museum to finance historical and cultural conservation projects. 	0.002% of GDP
Panama	Seguro Educativo	Payroll (employers: 1.50% on payroll; employees: 1.25% of salaries and wages)	<ul style="list-style-type: none"> - 27% for the Ministry of Education to cover costs of public schools at the primary and secondary levels. - Remaining 73% is allocated to scholarships and student loans, financing for INADEH, resources for other training programmes) 	0.06% of GDP (refers to 27% of revenues for public schools)
Uruguay	Impuesto Anual de Enseñanza Primaria	Property tax (on real estate)	Provide financing for primary education, in particular food, educational supplies, transportation of children and maintenance and repair of schools.	0.15% of GDP

Source: Author's elaboration, on the basis of national legislation.

Second, the distribution of the revenues generated by these taxes also varies substantially. Revenues from the Education Salary tax in Brazil targets primary education. In Costa Rica the majority of revenues from the Timbre para la Educación y Cultura are directed to tertiary education institutions. In contrast, the specific tax in Panama finances a wide array of educational programmes, formal education as well as including the national TVET institution as will be analysed below. In Uruguay, the revenues from the Impuesto Anual de Enseñanza are earmarked for elementary education, principally to finance school meals and transportation.

Third, the contribution of the revenues generated by these instruments to overall education funding is case specific, fundamentally reflecting the construction of the tax. The most important of these is the Education Salary tax in Brazil, whose receipts were equivalent to 0.3% of GDP in 2017. In Uruguay, the impuesto anual de enseñanza primaria generated 0.15% of GDP in the same year. In Panama, the revenues of the education insurance tax that corresponds to the Ministry of Education's provision of formal education is relatively limited, at 0.06% of GDP in 2017. Finally, the Costa Rican Timbre para la Educación y Cultura generated very little revenue, 0.002% of GDP in 2017. However, in the case of Costa Rica there are other ear-marked taxes for education, although the revenues that they generate are not identifiable.

Specific tax and other revenue generating instruments for formal TVET appear to be limited in the region. A review of national legislation identified examples in three countries (table 2). In

Argentina, the Technical Professional Education law provides for a funding mechanism that transfers a set share of total current revenues of the government to a fund to finance TVET at the secondary and post-secondary non-tertiary levels. In Costa Rica the legal framework for the country's National Training Institute (Instituto Nacional de Aprendizaje), provides that the institute will transfer a specified share of its resources to finance formal TVET each year. Finally, in Guatemala a share of the revenues generated by the value-added tax are allocated to specific ends, including financing primary and technical education.

Table 2
Selected countries: Formal TVET financing measures

Country	Law/measure	Resource allocation	Revenue percent of GDP (2017)
Argentina	Ley de Educacion Tecnico Profesional (Ley 26.058)	0.2% of all current revenues of the consolidated annual budget of the national public sector will be transferred to the National Fund for Technical and Occupational Education.	0.4
Costa Rica	Reglamento a Ley para el Financiamiento y Desarrollo de la Educación Técnica Profesional (N° 23258-MEP)	5% of the ordinary yearly budget of the National Training Institute (INA), which will be taken from the accumulated surplus, or in the case of no surplus, from the annual revenues.	0.02
Guatemala	Ley del Impuesto al Valor Agregado (Decree number 27-92)	Value-added tax, 0.5 percentage points of the 12% general rate is earmarked for programmes and projects for primary and technical education.	0.2

Source: Author's elaboration on the basis of national legislation.

With regards to the financing of non-formal TVET, the region has a long history with the use of payroll taxes to support national training institutions (the so-called Latin American model). The tax base for this type of instrument is typically the overall wage bill of an employer or the gross wages and salaries of an employee. As table 3 shows, the use of payroll tax instruments for TVET is widespread in the region. Although employers are generally the entity that pays the tax—at rates between 0.5% and 3.0%—it's true burden rests nearly entirely on workers in the form of lower wages. In some cases, employees also contribute a share of their own wages and salaries, although this is rare for TVET financing in the region.

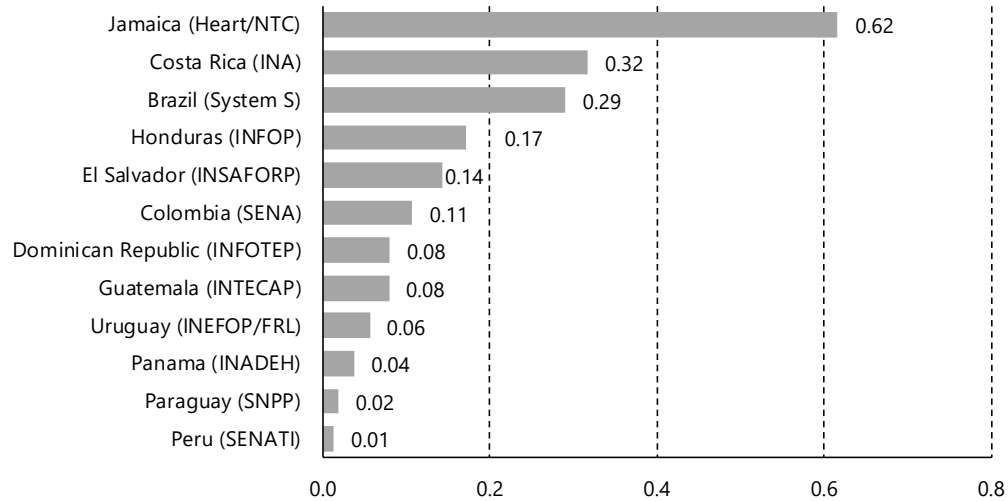
At the country level the revenues mobilized by these instruments varies significantly, reflecting various factors, such as the size of the formal sector, the size of the tax base (specific to a sector or economy wide) and the tax rate, among others. As figure 5 highlights, revenues for payroll taxes that specifically target TVET range from relatively small to economically significant. In Peru, the low level of revenues from this instrument (0.01% of GDP in 2017), is the largely the result of a reduced tax based (limited to manufacturing firms with more than 20 employees) and a low tax rate of 0.75%. In a similar vein, in Uruguay the low tax rate of this instrument results in lower revenue flows.

Table 3
Latin America and the Caribbean: TVET related payroll taxes

Country	TVET provider(s)	Contribution rates	
		Employee	Employer
Argentina	n.a.	None	None
Barbados	TVET Council/NTF	0.5%	0.5%
Bolivia (Plurinational State of)	INFOCAL	None	1.0%
Brazil	System S	None	Sesi/Sesc/Sis: 1.5% Senai/Senac/Senate: 1% Sebrae: 0.6%
Chile	n.a.	None	None
Colombia	SENA	None	2.0%
Costa Rica	INA	None	1.5%
Dominican Republic	INFOTEP	0.05% (gross wages)	1.0%
Ecuador	SECAP	None	0.5%
El Salvador	INSAFORP	None	1.0% (on companies with more than 10 employees)
Guatemala	INTECAP	None	1.0%
Honduras	INFOP	None	1.0%
Jamaica	HEART	None	3.0% (payroll threshold applies)
Mexico	n.a.	None	None
Nicaragua	INATEC	None	2.0%
Panama	INADEH		18.5% of education insurance tax (paid by employees 1.25% of gross wages and employers 1.5% of payroll)
Paraguay	SNPP	None	1.0%
Peru	SENATI	None	0.75% (firms classified in category D of the industrial classification system CIUU)
Trinidad and Tobago	n.a.	None	None
Uruguay		FRL (0.125% of gross wages excluding annual bonus)	FRL (0.125% of payroll)
Venezuela (Bolivarian Republic of)	INCES	0.5% of salaries and wages	2.0% of payroll

Source: Author's elaboration based on national legislation.

Figure 5
Latin America and the Caribbean (selected countries): TVET related payroll tax revenues, 2017
(Percentages of GDP)



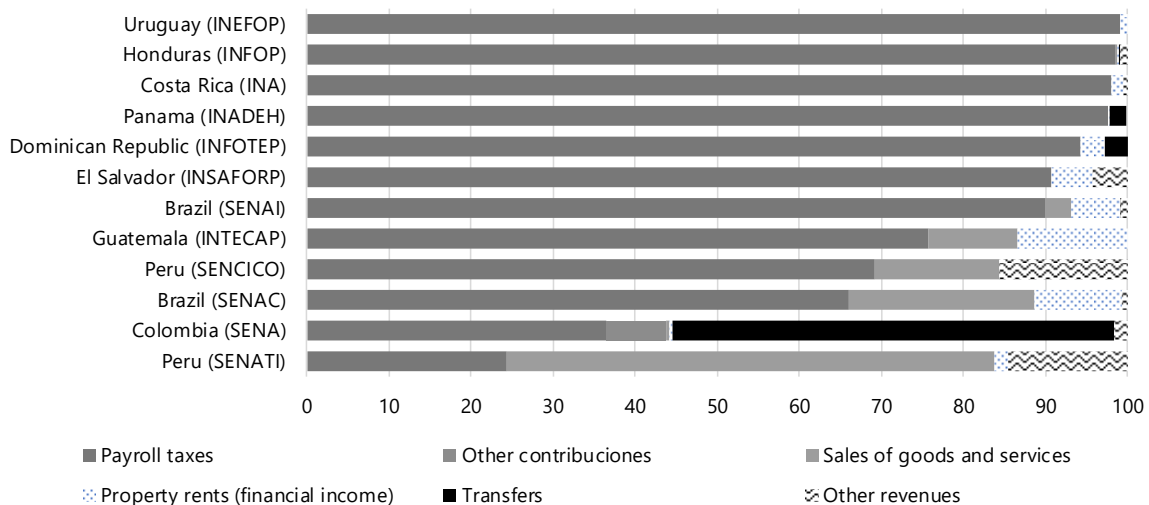
Source: Author's elaboration, based on information from official sources.

In contrast, the tax rate in Jamaica for the employers' contributions is the highest in the region at 3%, and its tax base is quite broad, with a relatively low payroll threshold. Revenues accruing to Costa Rica's National Training Institute (Instituto Nacional de Aprendizaje) and to the Brazilian System S institutions are also significant, at 0.32% of GDP and 0.29% of GDP, respectively.

(c) Self-financing by TVET providers

Global discussions on TVET finance have highlighted the need for training providers to diversify their financing to mobilize additional resources. In Latin America and the Caribbean there appears to be substantial scope for further diversification. A survey of financial statements (or budgetary documents) of national training institutes in the region finds that payroll tax receipts account for the vast majority of the overall revenues of national training institutions. As figure 6 reveals, in many cases these tax revenues account for upwards of 90% of total revenues for these institutes. This is especially apparent for institutes in Costa Rica, Honduras, Panama and Uruguay. SENA in Colombia is a special case in that its revenues derive both from payroll taxes and from revenues allocated to it from corporate income tax receipts (although the recent Colombian tax reform has changed the tax system and in doing so essentially removed this revenue stream).

Figure 6
Selected national training institutions: revenues by source, 2016 or latest
(Percentages)



Source: Author’s elaboration, based on information from official sources.

This finding notwithstanding, other sources of revenues are also relevant in some cases. Student fees and sales of training services play an important role for a number of institutions, either by complementing existing revenues or making up for much smaller contributions from payroll taxes. For example, SENATI in Peru offers a wide range of services to firms—including training programmes focused on environmental technologies, upgrading value-added in textile production, in-house training, as well as manufacturing services—that generate a significant share of the institute’s revenues (SENATI, 2018).

This survey also reveals that financial income also plays a role in financing non-formal institutes in the region. In particular, INTECAP in Guatemala and SENAC in Brazil more than 10% of their annual revenues came from property rents. In the case of INTECAP these correspond to fixed deposit interest income (INTECAP, 2017). Likewise, SENAC receives interest revenue from deposits in bank accounts (SENAC, 2018). While accruing financial income has its benefits, it can also be a sign of a lack of opportunities to provide training or the lack of capacity to implement annual budgets.

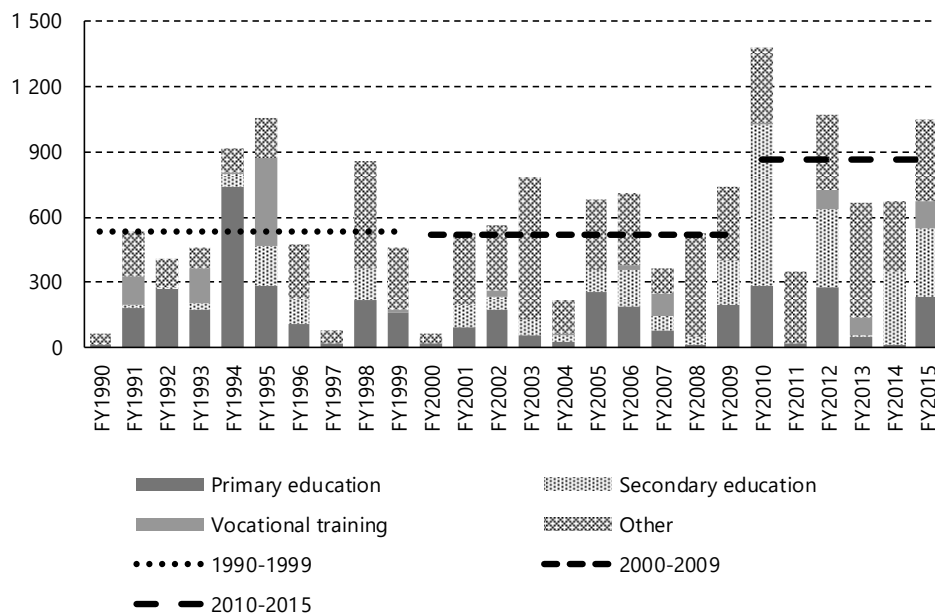
(d) Multilateral lending

Multilateral lending has played an important role in the development of educational systems in Latin America and the Caribbean. One of the largest single lenders to the region for education projects has been the World Bank through its subsidiary organizations. During the period 1990-2015 the World Bank (IBRD + IDA) extended a total of US\$ 15.7 billion dollars in financing. The bulk of this (95%) corresponds to lending to countries by the International Bank for Reconstruction and Development (IBRD). The International Development Association (IDA), which provides ODA in the

form of interest free loans and grants from its own resources,⁴ accounted for a much smaller share of the overall financing extended by the World Bank, but in its own right it is one of the larger multilateral organizations providing ODA to developing countries.

As figure 7 highlights, there has been significant year-to-year volatility in new commitments by the World Bank for education in the region. Nevertheless, period averages suggest that the volume of new commitments for education projects has risen in the latest period. Over the period under consideration there was a marked shift in the composition of lending by subsector. Between 1990 and 1999, lending for primary education projects accounted for 41% of the total, but in the latest period 2010-2015 this had fallen to 17%. In contrast, the share for secondary education has grown, from 10% in the first period to 34% in the latest. Vocational training lending totalled US\$ 1.2 billion over the period, but TVET projects were also financed as part of other subsectors such as secondary and tertiary education (box 4).

Figure 7
World Bank: IBRD and IDA new commitments for education in Latin America and the Caribbean, FY1990-FY2015
(Millions for dollars)



Source: Author's elaboration based on data from World Bank.

⁴ The IDA is also a significant channel for bilateral ODA, but in this section data refers only to flows associated with the entity's own resources.

Box 4**Transformation of the Tertiary Technical and Technological Institutes Project in Ecuador**

The Project to Restructure Public Higher Technical and Technological Education, which is implemented by the Secretariat of Higher Education, Science and Technology (SENESCYT), will work to improve technical and technological education services in the provinces, education quality and administrative capabilities of institutes; to train teachers and directors; and to strengthen institutional coordination mechanisms with the private sector. It also includes a gender plan to monitor access and attendance rates of female students to promote equal access to technical education.

According to the national government, this financing will promote the development of human talent associated with the change in the productive structure. A key project activity will be supporting the design of a study plan aligned with the needs of the labor market. The project will also provide adequate infrastructure to facilitate learning, promote linkages between secondary and higher education and strengthen the management of the country's technical and technological education system.

This loan will be used to build and equip 11 technical institutes in the provinces of Bolívar, El Oro, Guayas, Manabí, Pichincha, Tungurahua and Sucumbíos.

This project seeks to train workers with the skills the labour market requires. The total World Bank loan is US\$102.47 million (which was classified as tertiary lending), of which SENESCYT will contribute US\$11.97 million.

The project is expected to be completed by 2021. The loan term is 35 -year maturity, including a 17-year grace period.

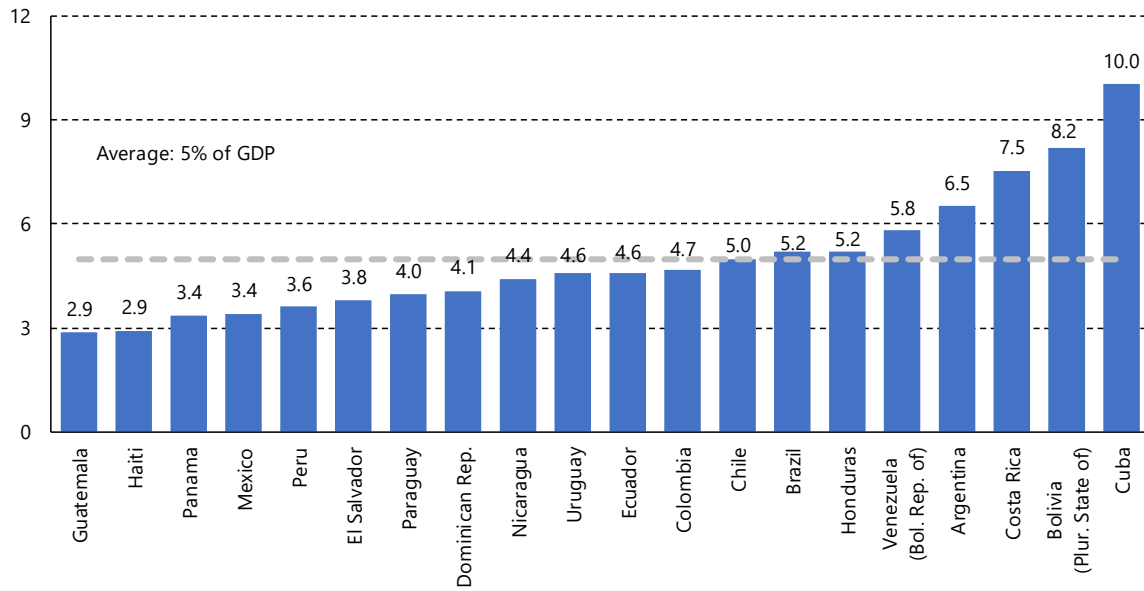
Source: World Bank.

2. Education initial financing

Overall education expenditures by governments in Latin America and the Caribbean are significant, averaging 5.0% of GDP in 2016. As figure 8 highlights, this average belies a heterogeneity of levels between countries, with outlays ranging from 2.9% of GDP in Guatemala and Haiti to 10.0% of GDP in Cuba. Unlike other fiscal indicators —such as tax revenues— which exhibit a significant bias between subregions, educational spending as a share of GDP is roughly equal between South America (5.2% of GDP average in 2016) and the group of countries comprised by Central America, Cuba, Dominican Republic, Haiti and Mexico (4.8% of GDP). However, removing Cuba which is clearly and outlier from the second group results in a much lower average for educational outlays: 4.2%.

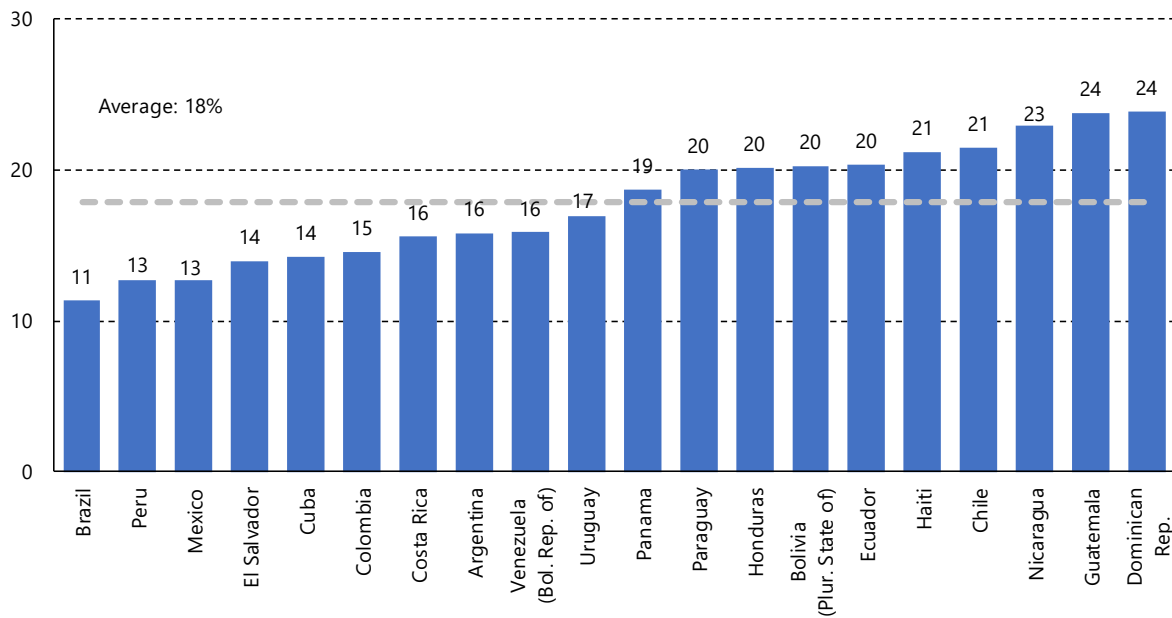
Beyond their sheer economic weight, as measured as a share of GDP, education expenditures also represent a significant share of overall public expenditure. As seen in figure 9, education outlays in Latin America account for 18% of government expenditures. Of note, several countries whose expenditures as a share of GDP were less than average, dedicate a very significant share of their overall outlays to education. For example, of the countries examined, the lowest value of education expenditures by share of GDP was in Guatemala (2.9%), however these expenditures represented 24% of overall public expenditure. In contrast, countries where social protection and health expenditures are high —Argentina, Brazil, Costa Rica and Uruguay— all registered below average results for this indicator.

Figure 8
Latin America and the Caribbean: public expenditure on education, 2016
(Percentages of GDP)



Source: Author's elaboration based on data from CEPALSTAT.

Figure 9
Latin America and the Caribbean: share of public expenditure on education in total public expenditure, 2016



Source: Author's elaboration based on data from CEPALSTAT.

The share of government funding devoted to education is often set by national legislation. As table 4 highlights, many Latin American countries have established spending targets in their national education legislation, including in some cases as constitutional mandates (Brazil and Costa Rica) as well as general education laws. These targets are normally considered as a minimum bound on government expenditure on education. A survey of these targets in Latin America reveals three principal methods: targets relative to GDP; targets relative to overall public expenditure; and targets relative to public revenues.

Table 4
Latin America (18 countries): Education expenditure targets established in national legislation, latest year

Country	Normative name	Notional target
Argentina	Ley de Educación Nacional (Ley 26.206)	Minimum of 6% of GDP (graduated steps from 2006 to 2010)
Brazil	Constituição da República Federativa do Brasil	Union (no less than 18%) and the States, the Federal District and Municipalities (no less than 25%) of tax revenues, including transfers
Bolivia (Plurinational State of)	Ley de la Educación "Avelino Siñani – Elizardo Pérez"	n.a.
Chile	Ley General de Educación	n.a.
Colombia	Ley 715 de diciembre 21 de 2001 (Sistema General de Regalías)	Approximately 3% of GDP, education share of SGR
Costa Rica	Ley 8954 Reforma del artículo 78 de la Constitución Política para el Fortalecimiento del Derecho a la Educación	8% of GDP
Dominican Republic	Ley General de Educación (Ley 66-97)	Greater of 4% of GDP or 16% of total public expenditure
Ecuador	Ley Orgánica de Educación Intercultural	n.a.
El Salvador	Ley General de Educación	n.a.
Guatemala	Ley de Educación Nacional	No less than 35% of ordinary revenues of the general budget of the State
Honduras	Ley Fundamental de Educación	n.a.
México	Ley General de Educación	8% of GDP (including expenditure of the federal governments, state and municipalities)
Nicaragua	Ley General de Educación	20% of tax revenues (non-tertiary education)
Panama	Ley Orgánica de Educación	6% of GDP of the previous year
Paraguay	Ley General de Educación	20% of the General Budget of Expenditures of the Nation
Peru	Ley General de Educación	6% of GDP
Uruguay	Ley General de Educación	n.a.
Venezuela (Bolivarian Republic of)	Ley Orgánica de Educación	n.a.

Source: Author's elaboration based on national legislation.

Targets with a threshold value based on a percentage of GDP are the most common in the region (7 countries). For countries that employ this form of target there appears to be a movement towards a value of between 4% and 6% of GDP in line with recent international agreements on education finance for the Sustainable Development Goals (UNESCO, 2016).

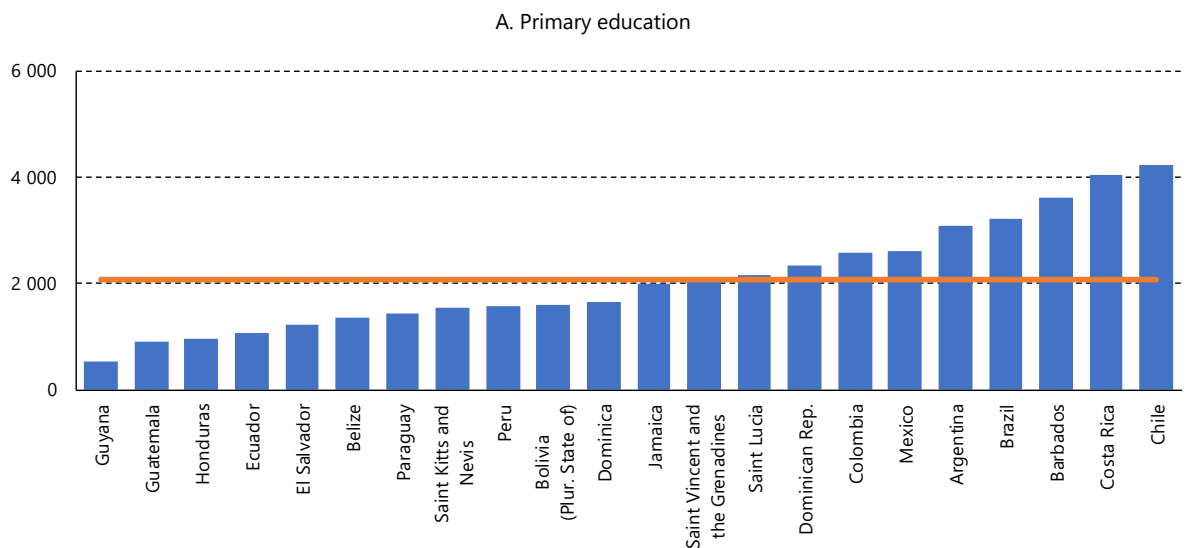
Another threshold used in the region is one based on a value expressed as a share of the overall public budget. For example, in Paraguay the general education law states that under no circumstances can the educational outlays be less than 20% of the General Budget of Expenses of the Nation. The Dominican Republic employs a variant of these methods stating that education expenditures must be greater of 4% of GDP or 16% of total public expenditure.

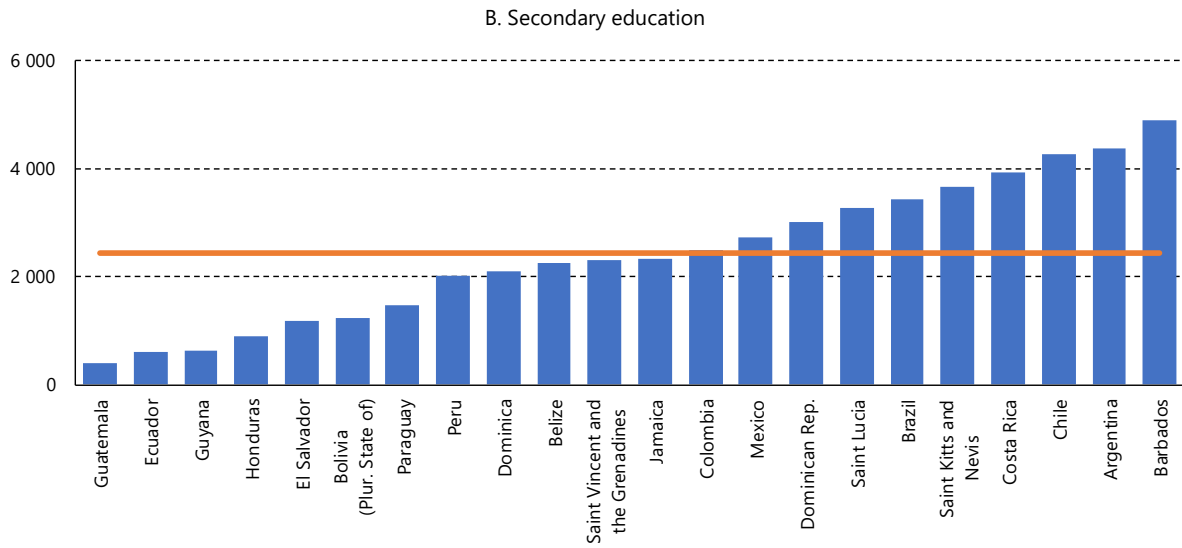
Several countries anchor their spending targets on available public revenues. This reflects not only the concept that current outlays should be financed with current revenues, but it also allows the target to take into account the economic cycle. The downside to this kind of target is that it can potentially introduce a degree of volatility to education expenditures over time. Brazil, Guatemala and Nicaragua employ this kind of target, though that of Brazil is unique in that it establishes values for each level of government from the federal level to the local level.

These targets can be notional in nature and may not be binding, especially as they are implemented. Peru’s Ley General de Educación, which includes a target of at least 6% of GDP a year, stipulates in its transitional and complementary measures that the increase in the education budget will be reached progressively, without specifying a specific period (third transitory measure). In contrast, Argentina’s mandated increase to a minimum of 6% included year by year targets based on specific mathematical formulas.

While the overall magnitude of education expenditures is indicative of its importance in government policy, another key issue is how these outlays are translated to individual students. This can be evaluated from a number of different perspectives. In absolute terms, per student initial government spending spans a wide range in the region (figure 10). Per student spending in Argentina, Barbados, Brazil, Chile and Costa Rica is roughly 1.5 times the average for each level of education (2,081 and 2,433, respectively, in constant 2011 international dollars). This contrasts with much lower than average spending in Ecuador, El Salvador, Guatemala, Guyana and Honduras.

Figure 10
Latin America and the Caribbean: initial government spending per student (primary and secondary), 2016 or latest
(Constant 2011 international dollars, PPP)

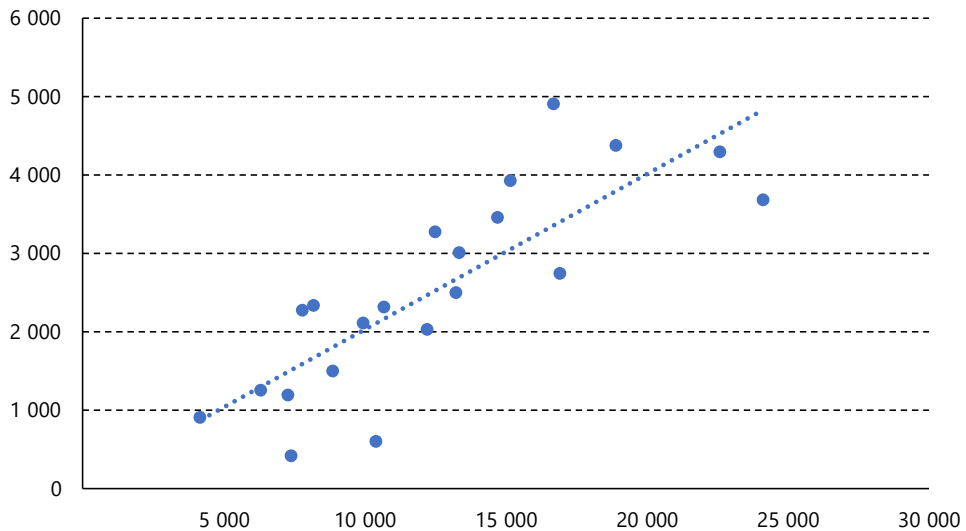




Source: Author's elaboration based on data from UIS.data.

The large spectrum of per student spending in absolute terms reflects the ability of individual countries to invest in education in line with their level of development. Countries with higher per-capita incomes have more potential resources from which to draw. Public revenues, especially tax revenues, are highly correlated with per-capita GDP and thus can generate the revenues necessary to boost per-student spending. Unsurprisingly, there is essentially a linear relationship between per-capita GDP and per-student outlays in the region (figure 11).

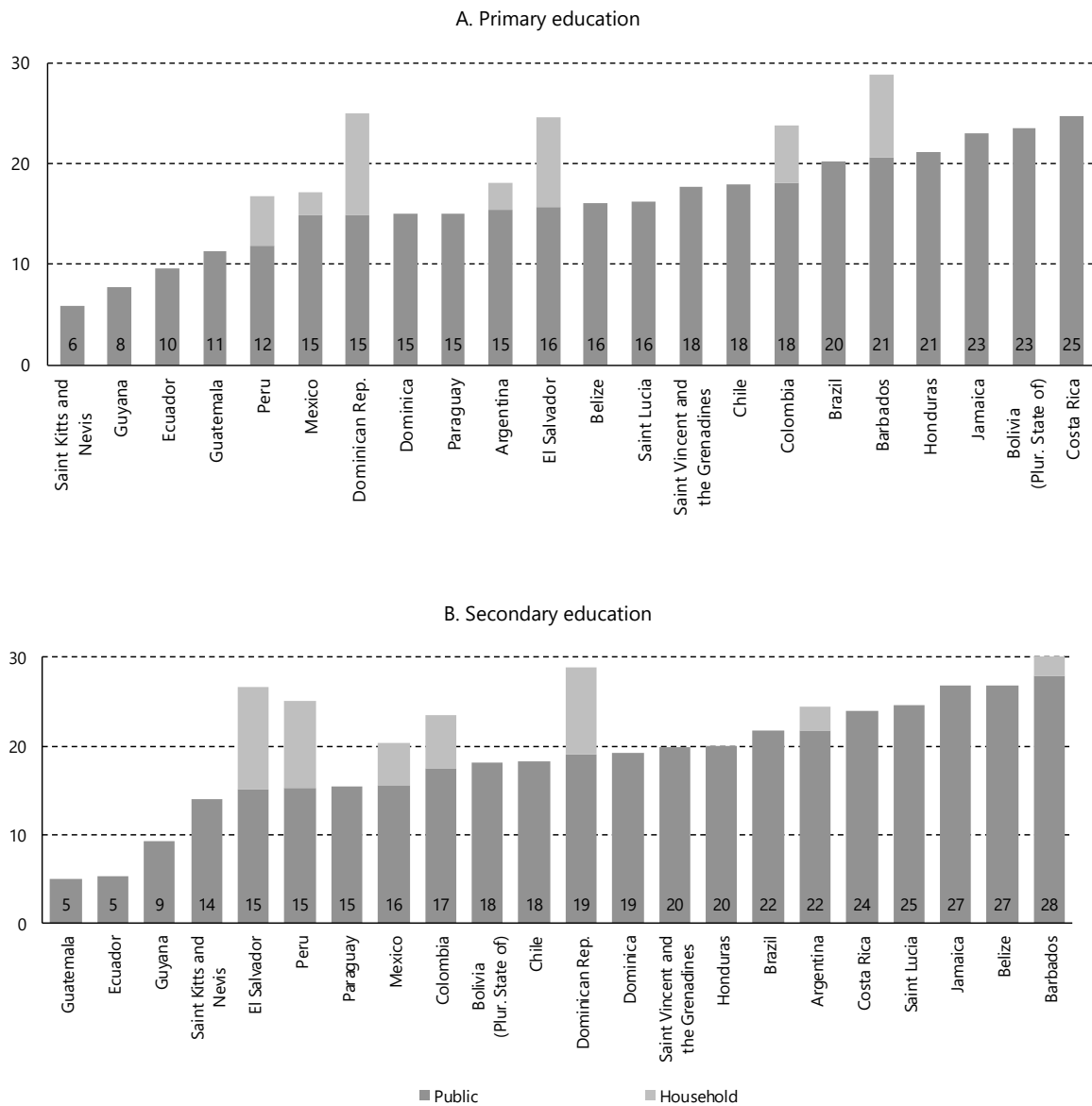
Figure 11
Latin America and the Caribbean: initial government spending per student at the secondary level and GDP per-capita, 2016 or latest



Source: Author's elaboration based on data from UIS.stat.

This relationship notwithstanding, a government’s effort to finance students can also be evaluated in relative terms, as the ratio of per-student spending to per-capita GDP. For example, some countries that have relatively modest per-student spending in absolute terms, such as Honduras and the Plurinational State of Bolivia, make a greater than average effort to support their students at the primary level (figure 12). This relationship is less apparent at the secondary level, where the distribution of countries roughly reflects that seen in absolute spending terms. Some of these gaps between countries closed to some degree when households’ contributions to education financing are included (though there is very limited data to evaluate this).

Figure 12
Latin America and the Caribbean: initial government spending per student
as a percentage of GDP per-capita, 2016 or latest
(Percentages)



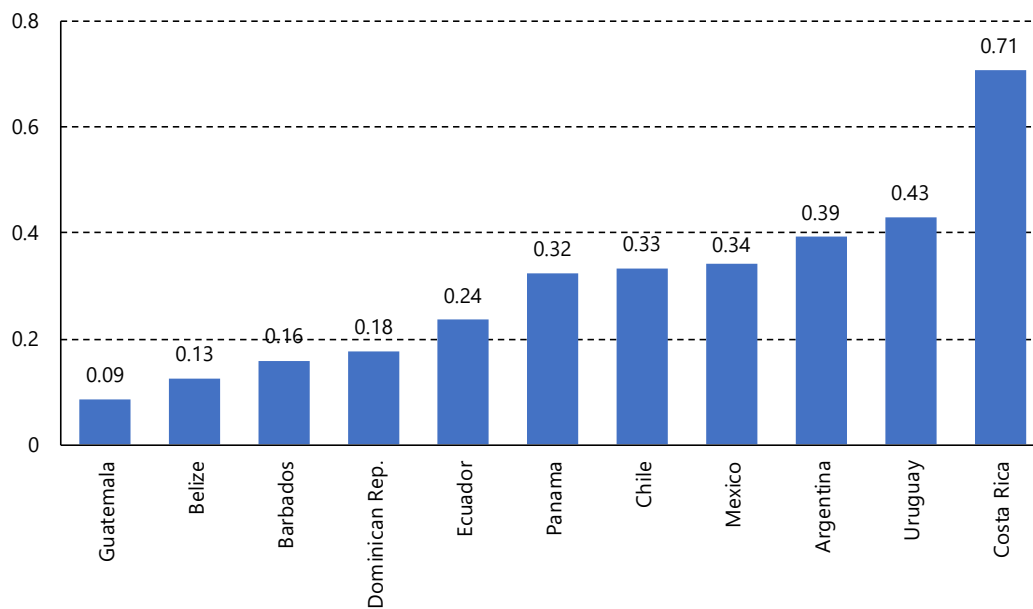
Source: Author’s elaboration based on data from UIS.data.

3. TVET initial financing

The analysis of initial financing formal TVET in the region suffers from the lack of available statistical information. For the majority of the countries of Latin America and the Caribbean there is no comprehensive and disaggregated information about government spending in formal TVET programmes across the secondary, post-secondary non-tertiary and tertiary levels. Even when data is available it is not necessarily comparable across countries given the differences in the kinds of programmes offered to students and what is considered to be vocational in each specific country context (for example, in Bolivia all of secondary education is considered as vocational).

These shortcomings notwithstanding, available data for initial financing of TVET at the secondary level in the region points to a significant range in levels. As seen in figure 13, Costa Rica stands out as an outlier with regards to TVET at the secondary level, spending 0.71% of GDP in 2017. Among the other countries there appears to be a clear break between those that spend between 0.3% and 0.4% of GDP, and those who spend less.

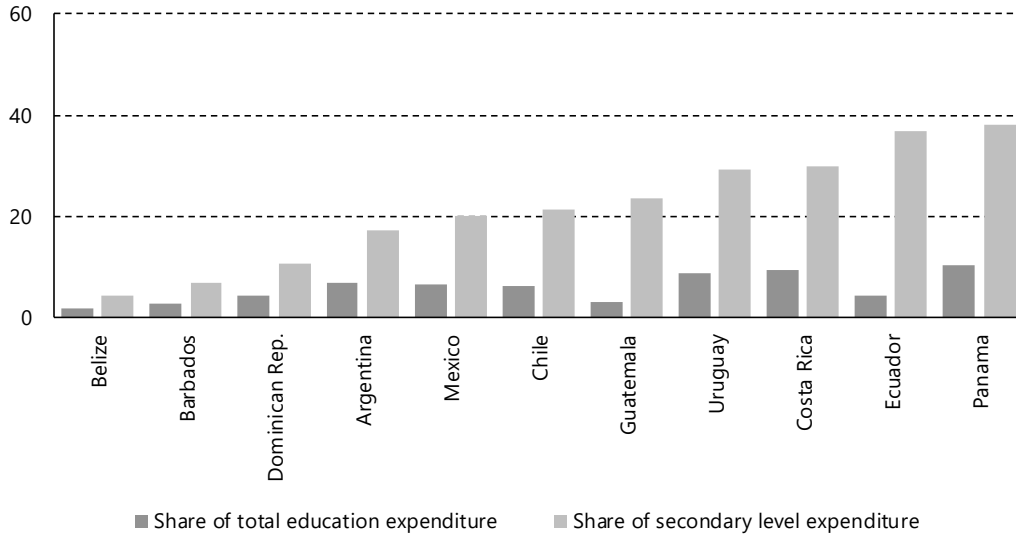
Figure 13
TVET expenditures at the secondary level, 2017 or latest
(Percentages of GDP)



Source: Author's elaboration based on UIS data and national statistics.

These differences in initial financing levels, however, are not translated into their importance relative to overall secondary expenditures (figure 14). For example, in Panama secondary level TVET expenditures were 0.32% of GDP —essentially at the median for the group of countries under consideration— but they represented almost 40% of all expenditure for secondary education and 10% of all education expenditure. Likewise, in Guatemala, the 0.09% of GDP destined to secondary TVET was equivalent to roughly one-quarter of all secondary level spending. These findings are largely in line with the share of TVET students in overall secondary education (Sevilla B., 2017).

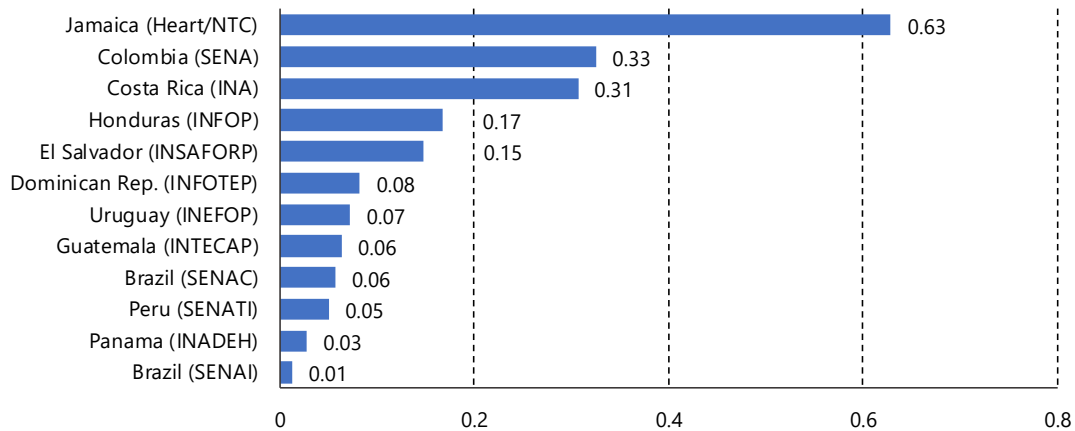
Figure 14
Secondary level TVET expenditures relative to all secondary expenditures
and to all education expenditures, 2017 or latest
(Percentages)



Source: Author’s elaboration based on UIS.data and national statistics.

As seen in figure 15, initial financing by national training institutions —principally of non-formal TVET— is quite varied in the region. Colombia, Costa Rica and Jamaica stand out as having particularly high outlays compared to institutions in other countries. The review of budget documents and financial statements of these institutions also suggest differences in terms of their financial conditions. A number of these reported losses during the year, while other registered very large surpluses. This finding suggests that beyond the differences in spending levels seen in figure 15, there are issues to resolve related to financial planning as well as budget implementation.

Figure 15
TVET initial financing by national training institutions, 2017 or latest
(Percentages of GDP)



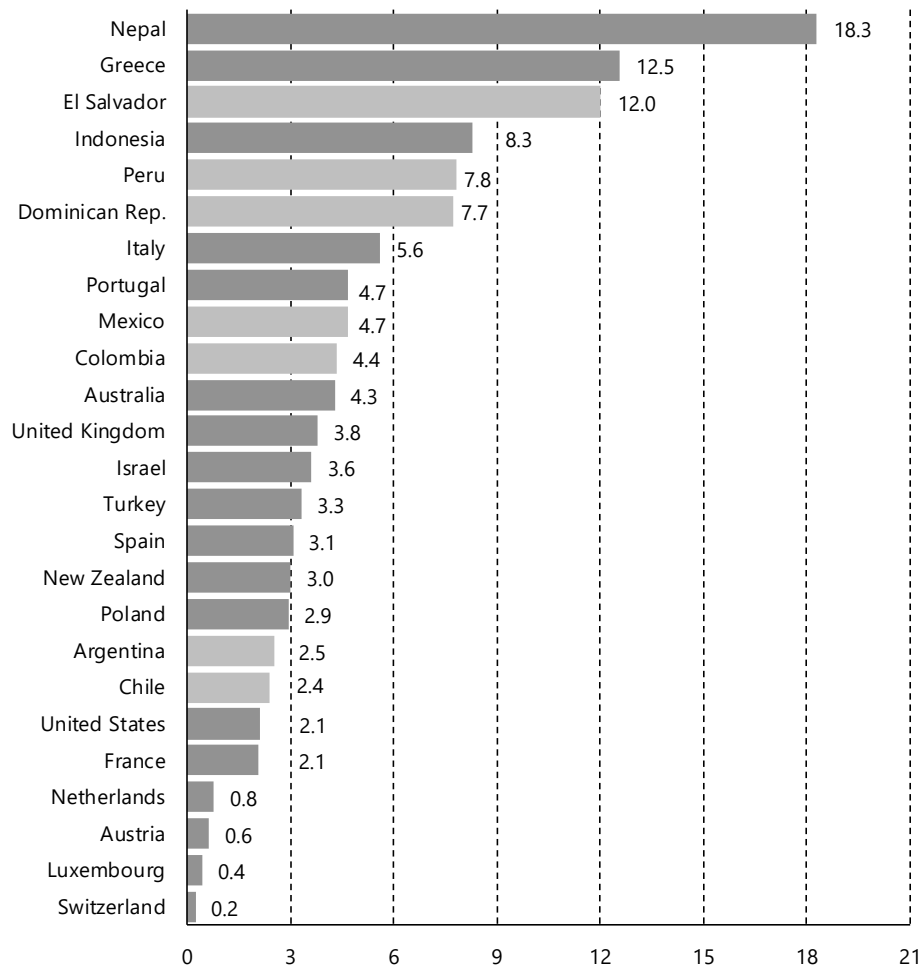
Source: Author’s elaboration, based on information from official sources.

C. Private sector

1. Households

While the importance of public financing of education in the region —and indeed the world— is often unquestioned, the available data suggests that the relative weight of public financing to household spending varies significantly by country and region (figure 16). In general, public education outlays in developed countries represent much of overall education expenditures (in some cases approaching 100%). Conversely, in other countries —both developed and developing— expenditures by households account or more than 20% of total spending. Within the regional context, there is a wide variety of situations with households contributing exceptionally large amounts in El Salvador (47%), Peru (37%) and Colombia (30%), contrasting with a 13% contribution in Argentina.

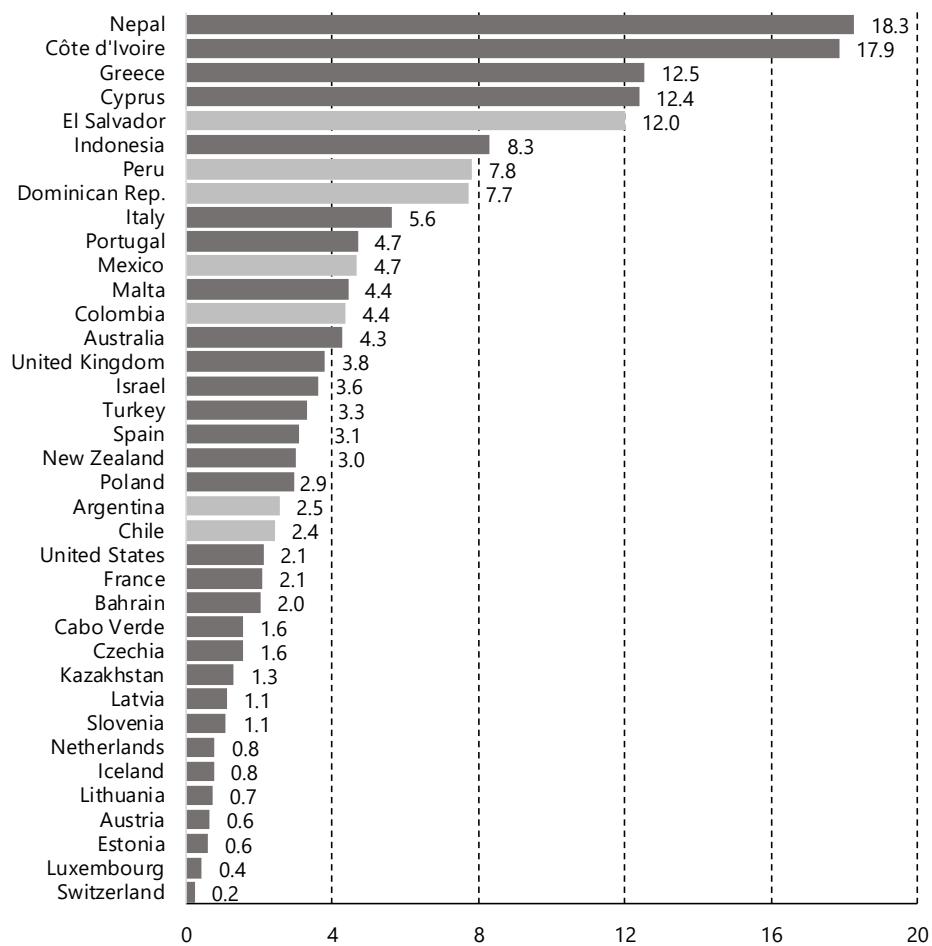
Figure 16
Selected countries: initial funding of education by sector, 2015
(Percentages)



Source: Author's elaboration, based on data from UIS.stat. INEED (Instituto Nacional de Evaluación Educativa) (2017), "Informe sobre el estado de la educación en Uruguay 2015-2016".

Initial financing provided by households for education are not inconsequential in terms of their relative weight in overall household expenses. As shown in figure 17, households in several countries of the region dedicate significant resources to financing education: El Salvador (12.0%), Peru (7.8%) and the Dominican Republic (7.7%). The fact that households are willing to forego current consumption of other goods and services to finance education suggests a high expected future return on this investment. It also highlights the importance of developing education and TVET financing policies that are supportive of the long-term financial welfare of households.

Figure 17
Selected countries: initial funding of education as a share of GDP per-capita, by households, 2015
(Percentages)



Source: Author's elaboration, based on data from UIS.stat.

As highlighted previously, the government can also use the tax system to incentivize investment in education and TVET. A survey of tax systems in Latin America and the Caribbean reveals that a significant number of countries provide favourable treatments for education expenses. As seen in table 5, value-added tax exemptions for the consumption of education services, school supplies and transportation are common. Educational services are generally defined in broad terms, including all levels as well as their provision by public and private institutions.

Few specifically make mention to TVET —Peru being an exception— but these generic definitions could be interpreted as including TVET provided within the formal educational system as well as that provided in non-formal institutions recognized by the respective governmental agencies.

Table 5
Latin America and the Caribbean (selected countries): Preferential treatment of educational expenses for the value-added tax (VAT)

Country	Preferential treatment applied to educational expenses ^a
Argentina	Educational services provided by private institutions following the official education guidelines and recognized by their respective jurisdictions. This benefit applies to all levels and grades, as well as postgraduate courses for secondary, tertiary or university graduates. Additionally, this benefit includes lodging and transport costs provided directly by the given institution.
Brazil	School transport
Chile	Educational services (including training).
Colombia	Educational services (pre-primary, primary, secondary, tertiary and special or non-formal, as recognized by the government). Certain exclusions for certain expenditures
Costa Rica	Private educational services (reduced rate of 4%) Goods needed for education and books.
Dominican Republic	Educational and cultural services. Pre-university education materials.
Ecuador	Educational services (all levels)
El Salvador	Educational services provided by schools, universities, institutes, academies or other similar institutions. Benefit applies to public and private schools authorized by the Ministry of Education.
Guatemala	Educational services provided by educational institutions (public or private), including costs related to tuition, teaching and examination fees, as well as transportation services provided directly to students.
Jamaica	Educational services Separate charter - education Designated educational supplies
Mexico	Educational services provided by public institutions and private institutions that are authorized or recognized by the component authorities, within the framework of the General Education Law, as well as educational services at the pre-school level.
Nicaragua	Educational services provided by entities and organizations whose principal activity is to provide these services.
Paraguay	Educational services provided non-profit establishments at the primary, secondary, technical, tertiary and university levels recognized by the Ministry of Education and Culture or through specific legislation.
Panama	Educational services provided by legal persons or natural persons authorized by the Ministry of Education Educational supplies
Peru	Educational services provided by public or private institutions for pre-primary, primary, secondary, tertiary, special, occupational preparation, among others. This includes registration fees, fees for tuition, exams, parents' associations, educational medical insurance, etc. Accommodation and food services for students as well as transportation for students provided by the same educational institution.
Uruguay	Educational services provided by private entities Educational supplies
Venezuela (Bolivarian Republic of)	Educational services registered with the Ministry of Education.

Source: Author's elaboration based on national legislation.

^a Preferential treatment includes exemptions and zero rates for the VAT.

Exemptions from the value-added tax for school supplies are typically defined as a basket of goods considered as required for the participation of a student in the educational system. For example, in Panama the value-added tax law specifies school uniforms, backpacks, notebooks, pens, pencils, protractors (and other instruments for studying geometry) and school books. Transport services are also exempt in some countries—specifically in some countries—and in others it is include in the general exemption for educational services.

Tax expenditures for the personal income tax—in the form of deductions or credits—are also common in the region. They are generally conditioned on the type and level of education that qualify for the beneficial treatment, as well as the kinds of expenses covered and the age and household status of the individual for whom the educational expenditures were realized. Additionally, in the cases examined in table 6 these benefits are frequently capped at a certain currency value or relative to a variable within the tax calculation, such as total income.

Table 6
Latin America and the Caribbean (11 countries): personal income tax benefits for educational expenses

Country	Tax benefit	Qualifying types of education
Brazil	Deduction of qualified education expenses incurred by the taxpayer and their dependents, up to an amount of BRL 3,561.50, for the year 2015.	(a) early childhood education, including kindergartens and pre-schools; (b) primary education; (c) secondary school; (d) tertiary education, including undergraduate and graduate studies (dependents may be included if they are up to 24 years of age and are pursuing tertiary education or technical education at the secondary level); (e) professional education, including technical and technological education.
Chile	Taxpayers can receive a tax credit for educational expenses of children (under the age of 25), up to a maximum of 4.4 Unidades de Fomento (a unit of account in Chile) per child, provided that the total income of both the father and the mother does not exceed 792 Unidades de Fomento.	[...] Children under the age of 25 who have a certificate of registration issued by an institution of pre-school, basic, differential or average education, recognized by the State. Furthermore, to qualify the child must have a minimum attendance of 85% of the school year, with some limited exceptions.
Dominican Republic	Wage earners, professionals and independent workers can deduct up to 10% of their taxable income for their own educational expenses or those of their dependents.	Primary education (including preschool), Secondary, Technical and Tertiary (undergraduate and postgraduate).
Ecuador	Taxpayers can deduct personal expenses of up to 50% of their gross income subject to a maximum deduction. Educational expenses are considered in the income tax law and are subject to a separate cap of 0.325 of the basic exemption limit.	Primary education, secondary education and tertiary education, as well as professional training courses and seminars that are approved by the Ministry of Education or Labor when appropriate or by the National Council of Higher Education.

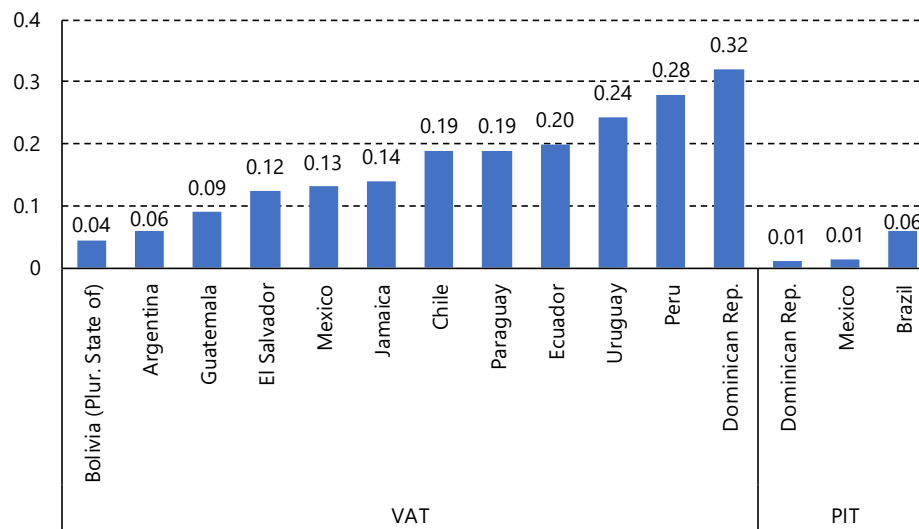
Country	Tax benefit	Qualifying types of education
El Salvador	Deduction of educational expenses, up to an amount of USD 800 incurred in El Salvador, for the taxpayer and their children under 25 years of age	All levels in schools authorized by the state.
Honduras	Educational expenditure, among others, can be deducted as a personal expense for the calculation of the income tax. This deduction is limited to HNL 40,000.	No specific definition in the legislation.
Mexico	Expenses for school transportation of the children of the taxpayer in those areas where transportation is mandatory may be deducted. Certain educational expenses qualify for a personal income tax deduction, limited to five times the UMA or 15% of the taxpayer's total income, whichever is lower	- Preschool: MXN14,200 - Elementary school: MXN12,900 - Junior high school: MXN19,900 - Technician school: MXN17,100 - High school: MXN24,500
Nicaragua	Deduction of 25% of education, health, and professional services to a maximum amount of C\$5,000.00 (2014) rising to C\$20,000.00 (2017)	No specific definition.
Panama	Interest payments for loans used to finance educational expenses in Panama for the taxpayer or their dependents, or for loans guaranteed by the Formación y Utilización de los Recursos Humanos (IFARHU)	
St. Lucia	Deduction for non-tertiary education of XCD 2,000. Deduction for tertiary education XCD5,000.	"student child" means a child who, at any time during the income year, was— (a) receiving full time education at a school, college or other educational institution but not including a university or other institution providing technical or professional education or a standard equivalent to a university; or (b) serving full time as an apprentice or under articles or with a view to qualifying in a trade or profession. "University student" means a person receiving full time education at a university or at any other institution providing technical or professional education of a standard equivalent to university education.
Trinidad and Tobago	Deduction for tertiary education expenses up to TTD 60,000.	No specific definition

Source: Author's elaboration based on national legislation.

As table 6 reveals, in the majority of countries under consideration the definition of qualifying education levels is quite broad and typically covers primary, secondary and tertiary education —not unlike those of the VAT. Nevertheless, in Brazil, the Dominican Republic, Ecuador, Mexico and St. Lucia the personal income tax legislation includes specific mention to TVET modalities, such as at the secondary and tertiary, and in non-formal contexts. In St. Lucia the general deduction for educational expenses includes students who are full-time apprentices with a view to qualifying in a trade or profession. In Panama taxpayers are allowed to deduct from their taxable income the interest they pay on educational loans or for loans provided by the national training institute.

The value of these tax benefits at the aggregate level for households vary significantly across countries. In general terms exemptions for educational expenditures of the value-added tax are much larger in economic terms, with an average of 0.17 percentage points of GDP for the countries in figure 18. These results also suggest that in some cases households in the region are making considerable out-of-pocket payments for educational services (box 5). There is significantly less information on the value of personal income tax benefits for educational expenses in the personal income tax. However, estimates of the foregone revenues associated with the measures range, from 0.01% of GDP in the Dominican Republic to 0.06% of GDP in Brazil.

Figure 18
Selected countries: size of tax expenditures associated with educational expenditures for the valued-added tax (VAT) and the personal income tax (PIT), latest year
(Percentages of GDP)

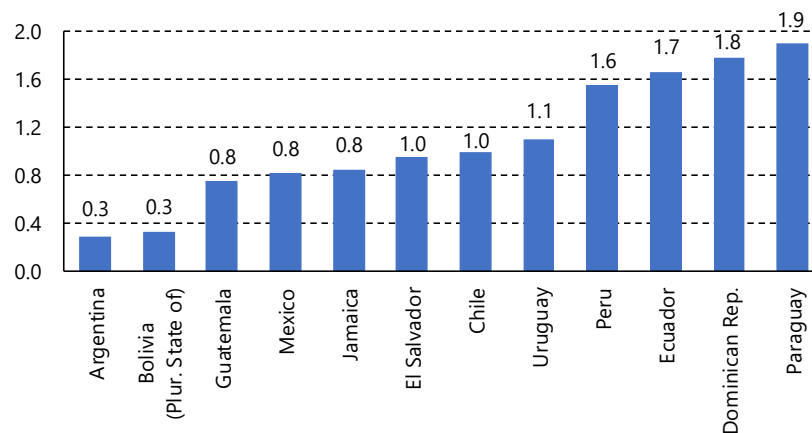


Source: Author's elaboration based on national estimates of tax expenditures.

Box 5**Implicit household educational expenses based on VAT data**

Information on the revenues forgone by governments in the region from VAT exemptions for educational services can also provide insights into the magnitude of overall household educational expenditures. Using the prevailing VAT rate for the year of the estimated tax expenditure results in the values presented in the following figure. These proxy values suggest that household spending on educational services is significant in Paraguay (equivalent to 1.9% of GDP), Dominican Republic (1.8% of GDP), Ecuador (1.7% of GDP) and Peru (1.6% of GDP).

Figure
Implicit household educational expenditures based on VAT tax expenditure data
(In percentages of GDP)



Source: Author's elaboration based on data from figure 18 and CIAT VAT rate database.

These estimates have certain limitations. First, they represent final household financing, that is they are not net of any potential transfers from the public sector, thus they are not necessarily representative of initial financing. Second, given the variety of exempted educational services, in terms of levels of education considered and the type of expenses that qualify for the benefit, these proxy values are not necessarily comparable across countries. They are none the less indicative of the scale of household educational expenditures in economic terms.

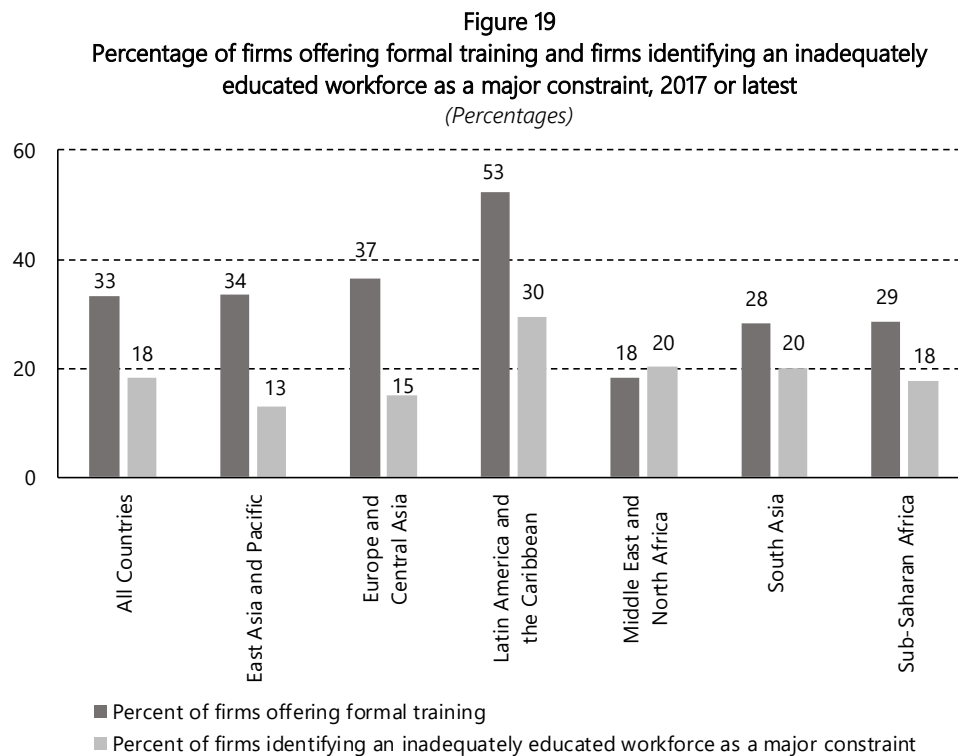
Source: Author's elaboration.

As highlighted previously, the use of tax expenditures give rise to certain concerns related to their impact on equity, this is especially important in the cases of benefits for education. An analysis by the Mexican Ministry of Finance on tax expenditures find that the 10th decile of the income distribution receives 29.1% of the benefit arising from the VAT exemption on educational services, which rises to 46.3% for the 9th and 10th deciles combined (Secretaría de Hacienda y Crédito Público, 2019).

Likewise, personal income tax benefits for educational expenditures appear to be highly concentrated at the upper end of the income distribution. Data from personal income tax filings in Brazil find that individuals with a taxable income of equivalent to 184% of per-capita GDP or more concentrated 41% of the total value of this deduction (Receita Federal do Brasil, 2017). In Mexico fully 83.5% of the benefit of the PIT deduction for school fees goes to individuals in the richest 10% of the population (Secretaría de Hacienda y Crédito Público, 2019).

2. Firms

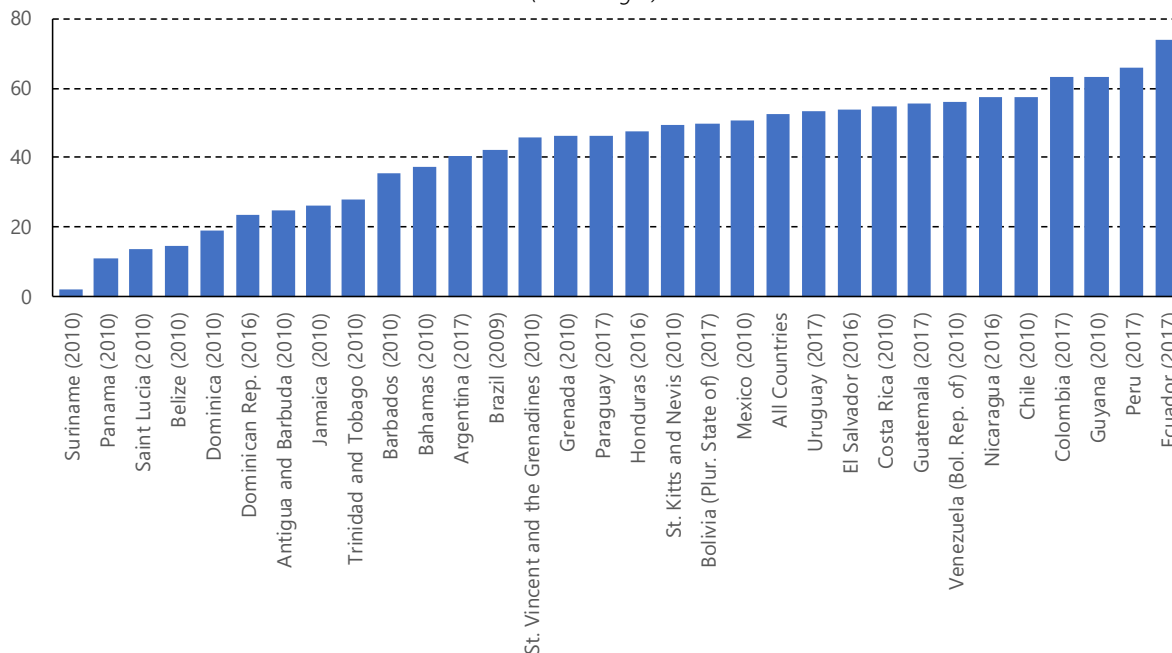
Firms in the region play a key role in providing non-formal TVET to their employees. As highlighted in figure 19, the percentage of firms in Latin America and the Caribbean (53%) who provide professional or vocational training is significantly higher than in any other region, or the average for all countries (33%). At the same time, this result is likely due to the fact that 30% of firms in the region cite an inadequately trained workforce as a major constraint for their operations. This stands in stark contrast with the all country average of 18% and with the results of other regions, which hover between 13% and 20%.



Source: Author's elaboration, on the basis of World Bank, Enterprise Surveys [online database] <https://www.enterprisesurveys.org/data>.

This regional average belies significant heterogeneity at the country level. As figure 20 reveals, the share of employers providing formal training is well above average in a significant number of countries in the region. For example, in Colombia, Ecuador, Guyana and Peru have values in excess of 60%. In contrast, in Belize, Dominica, Panama, St Lucia and Suriname the share of employers offering formal training falls to below 20%. This large spectrum of results reflects country-specific factors such as the sectorial composition of economic activity and the relative size of the formal sector, among others.

Figure 20
Latin America and the Caribbean: percentage of firms offering formal training, by country, 2017 or latest
(Percentages)



Source: Author’s elaboration, on the basis of World Bank, Enterprise Surveys [online database] <https://www.enterprisesurveys.org/data>.

Despite the importance of training by firms as revealed by these enterprise surveys, there is relatively little in the way of systematic information on their training expenditures. National statistics agencies in the region do not publish data on the scale of these outlays. Periodic economic censuses also provide little or no insights. At the company level, some data can be obtained from corporate social responsibility or sustainability reports, but this information is largely confined to the number of employees trained.

A recent study by Flores-Lima et al. (2014), based on enterprise level surveys in selected Latin American and Caribbean countries finds that training expenses represent a relatively modest share of overall operating costs. For example, in Honduras these expenditures were equivalent to 4% of total operating costs, while in Uruguay the figure was 2%. This result notwithstanding, as table 7 highlights, the resources invested by firms makes up the bulk of training financing.

Table 7
Selected countries: firms’ sources of financing for training
(Percentages)

	Bahamas	Colombia	Honduras	Uruguay
Public sources	2	13	24	7
Private credit	...	2	6	1
Resources of the firm	86	75	81	87
Resources of the employee	12	4	4	4
Other	5	7	12	7

Source: Flores-Lima et al. (2014).

Note: Surveys permitted more than one response, therefore the totals do not sum.

In general, the public sector appears to play a very limited role in financing training in firms, with slightly higher shares in Colombia and Honduras. Detailed survey data for Colombia suggests that co-financing programmes between SENA, the national training institute, and firms explained this result, as other subsidies and credits played essentially no role (DANE, 2014). In Uruguay, disaggregated survey results show that the country's national institution for work and professional training plays a very small role in financing firms' training expenditures.

Several countries in the region have extended tax benefits to firms with the aim of incentivizing investment in education and training for their employees (table 8). These measures have typically taken two forms: deductions or credits. In Colombia, Peru and Uruguay the corporate income tax code allows firms to deduct from their taxable income qualified education and TVET expenses. The corporate income tax deduction in Colombia is less focussed on specific training for employees as its objective is to support education more broadly. In contrast, Peru and Uruguay provide deductions specifically targeting training expenses. Peru's deduction is quite broad and is essentially limitless in practice.

Table 8
Latin America (5 countries): tax benefits for education and training expenditures by firms

Country	Name of measure	Tax benefit	Qualifying expenses
Argentina	Crédito para la formación profesional (Ley 22.317).	Tax credit that may be used to pay VAT, income taxes and other internal taxes.	Submitted professional formation plans submitted by the firm to the Ministry of Work, Labour and Social Security, which are subsequently approved.
Chile	Franquicia tributaria de capacitación.	CIT credit of up to 1% of total payroll.	Servicio Nacional de Capacitación y Empleo (SENCE) must approve the training to be provided before the firm may proceed.
Colombia	Corporate income tax code.	CIT deduction for education expenses.	Scholarships for the employee or their direct family Investment expenses for child care and pre-primary education centers, for children below the age of 7, which have been established by the firm Contributions made to primary and secondary education institutions as well as those of technical, technological and tertiary education (in all cases to institutions recognized by the Ministry of Education) in jurisdictions where the firm operates.
Peru	Corporate income tax code.	CIT deduction for training expenses.	Training expenses that corresponds to a specific need of the firm and that the training has an impact on the generation of taxable income and the maintenance of the productive capacity.
Uruguay	Corporate income tax code.	CIT deduction for training expenses. Special CIT deduction for training expenses related to specific strategic areas	Expenses related to technical, managerial or management training in carried out in public institutions or in private universities. Training must be related to the firm's activities. Training expenses related to priority sectoral or transversal areas as specified by the Uruguayan national strategic plan for science, technology and innovation.

Source: Author's elaboration based on national legislation.

The Uruguayan case is unique in that the corporate income tax law includes a general deduction for training and a special deduction based on areas included in the country's national strategic plan for science, technology and innovation. With regard to the special deduction, training is limited at the sectoral level to agroindustrial value chains, the production of energy, pharmaceuticals, tourism services and the audio-visual industry. The tax law also specifies that training in some transversal areas that generate positive externalities are also eligible, including: information and communications technology, logistics, biotechnology, nanotechnology and environmental management. The value of the special deduction is one and a half times of the qualifying expenditures, which are defined as direct enrolment and course fees —excluding expenses related to higher education— for one course per worker per year, with some exceptions.

In contrast to a tax deduction, Argentina and Chile offer tax credits as a way of incentivizing training investment. These credits can be used to directly reduce a firm's tax liabilities. In Argentina the Credit for Professional Formation (Crédito para la Formación Profesional), established in 1980, is a tax incentive whose objective is to finance a wide range of activities associated with training (Ministerio de Trabajo, Empleo y Seguridad Social, 2018). These include: professional training courses; basic vocational training; work training, certification of labour competencies; strengthening and certification of the quality of management of professional training institutions; certification of the quality of management of processes and products; occupational risk prevention; and, activities related to corporate social responsibility (CSR).

Firms and cooperatives design a training proposal in the framework of the activities contemplated in the law and present it to Employment and Training Office (Gerencia de Empleo y Capacitación Laboral) for consideration. These proposals can have a value of up to 8% of their total wages and salaries, benefits, and social security contributions or an amount of 750.000 Argentinian pesos, whichever is less. The tax credit emitted at the end of the project can be used to pay income taxes, value-added taxes and other domestic taxes. In 2018, the annual quota for the financing of projects through this program at 300 million Argentinian pesos, equivalent to 0.002% of GDP.

In Chile the Tax Incentive for Training (Franquicia Tributaria para la Capacitación) is a tax incentive, originally established in 1976, that allows firms (taxpayers of the First Category of the Income Tax Law) to deduct training expenses and those arising from the evaluation and certification of labour competencies of employees from their corporate income tax liabilities.⁵ In all cases these expenditures must be pre-approved by the National Training and Employment Service (SENCE). The value of this tax credit can rise to 1% of the firm's total annual payroll, depending on gross income. Direct costs associated with training courses and remedial education are eligible, although they are capped at a maximum value per hour of training —established annually by SENCE— that falls with the gross income of the firm.

Firms with 15 or more employees must establish a bipartite committee for training that evaluate the training programs of the firm, as well as provide advice of training needs. Firms that implemented training programs in line with the recommendations the bipartite committee are eligible for a 20% increase in the value per hour established by SENCE for the calculation of the tax credit.

⁵ For more information see: <http://www.sence.cl/portal/Oportunidades/Capacitacion/Franquicia-Tributaria/>.

One of the interesting features of the Chilean tax incentive is the provisions it includes that benefit workers if they eventually leave the firm. For example, expenditures on the evaluation and certification of labour competencies for workers by entities accredited by ChileValora (a government body that manages the national system of labour competencies certification) can also be included in the calculation of the tax credit. Additionally, training programmes that lead to the attainment of tertiary technical degrees at a qualified technical formation centre can be credited against the firm's tax liabilities up to an established value per year per employee.

In 2017, 1,2 million participants attended training courses within the framework of the Chilean training tax incentive programme. Statistical data from SENCE also suggest that workers in general attended more than one training course, as the number of approved individuals was 747,056. Employers put forward 2,370 employees to have their labour competencies evaluated and certified. The number of participants in training programmes that led to the attainment of tertiary technical degrees was very limited, totalling just 264 in 2017.

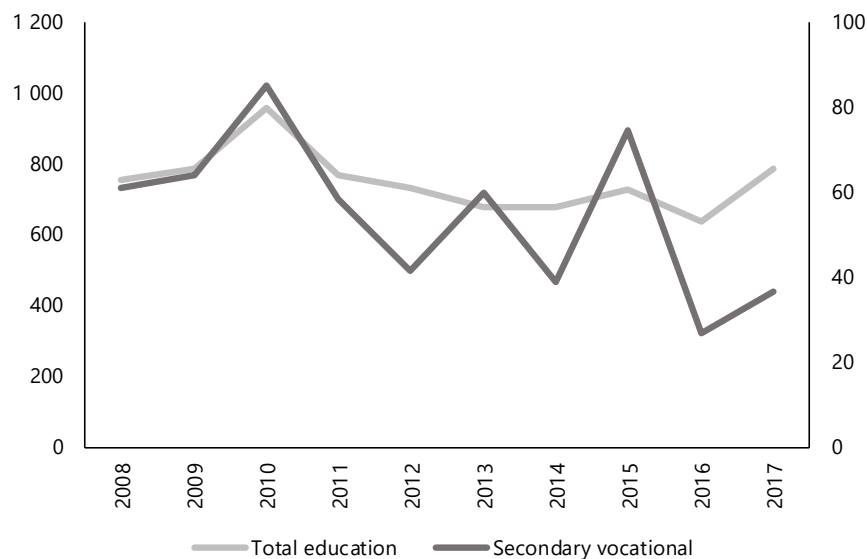
Spending on training under the programme is heavily weighted toward the public sector. The tax incentive mobilized US\$ 33.9 million of additional spending by firms, which accounted for 17% of total expenditures (private and public) related to the programme. In absolute terms total expenditure on training provided in the framework of the tax incentive regime was equivalent to 0.1% of GDP in 2017.

D. Rest of the world

1. Bilateral ODA

The importance of bilateral ODA for Latin America and the Caribbean has diminished over time as countries have reached middle —and high— income status. This transition notwithstanding a significant flow of resources continues to target the region, especially in the area of education. During the past decade, the period between 2008 and 2017, ODA commitments —amounts that correspond to agreements that have been signed, but not necessarily disbursed— totalled US\$ 7.5 billion. Nevertheless, as seen in figure 21, these flows have trended lower over time. It is also important to provide some context for the economic magnitude of these flows, as they have averaged 0.01% of regional GDP during the period.

Figure 21
Latin America and the Caribbean: bilateral official development aid (commitments) flows for education and secondary vocational education, 2008-2017
(Millions of dollars)

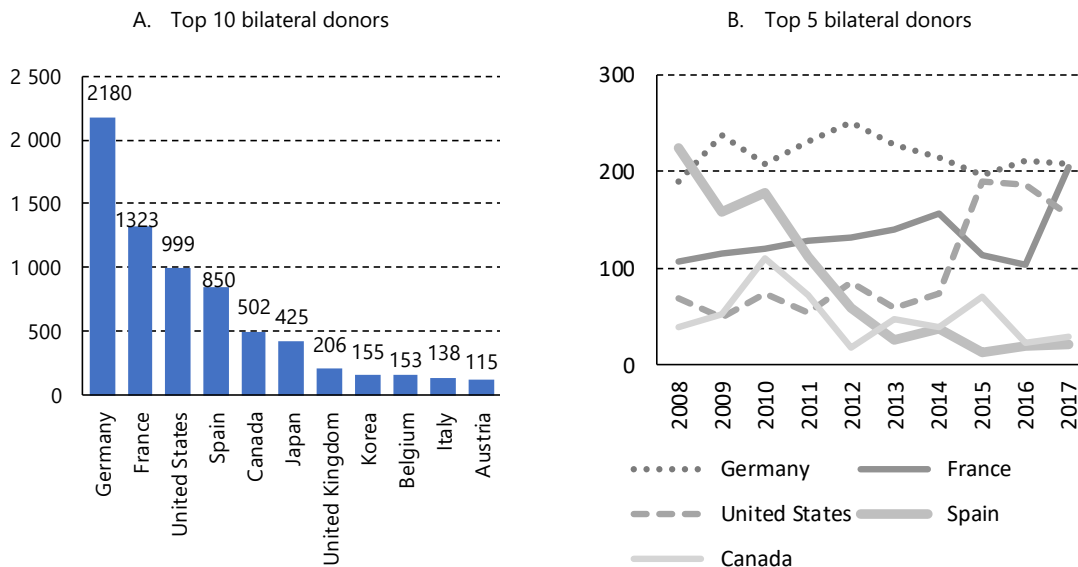


Source: Author's elaboration based on data from OECD.stat.

As is highlighted in figure 22, a small number of donors represent the lion's share of bilateral ODA flows in support of education in Latin America and the Caribbean. Between 2008 and 2017, the top 5 donors—Germany, France, the United States, Spain and Canada—extended a combined US\$ 5.9 billion in aid, equivalent to 78% of total ODA flows to the region for education. There have been considerable shifts in the composition of ODA flows from these principal donors. The largest single donor, Germany, has maintained a steady flow of commitments of roughly US\$ 220 million per year. In contrast, at the beginning of the period ODA flows from Spain were of the same magnitude, but thereafter declined significantly and in 2015 to 2016 they averaged US\$ 18 million per year. This reduction has largely been offset by increases in commitments by the United States (beginning in 2015) and France (especially in 2017).

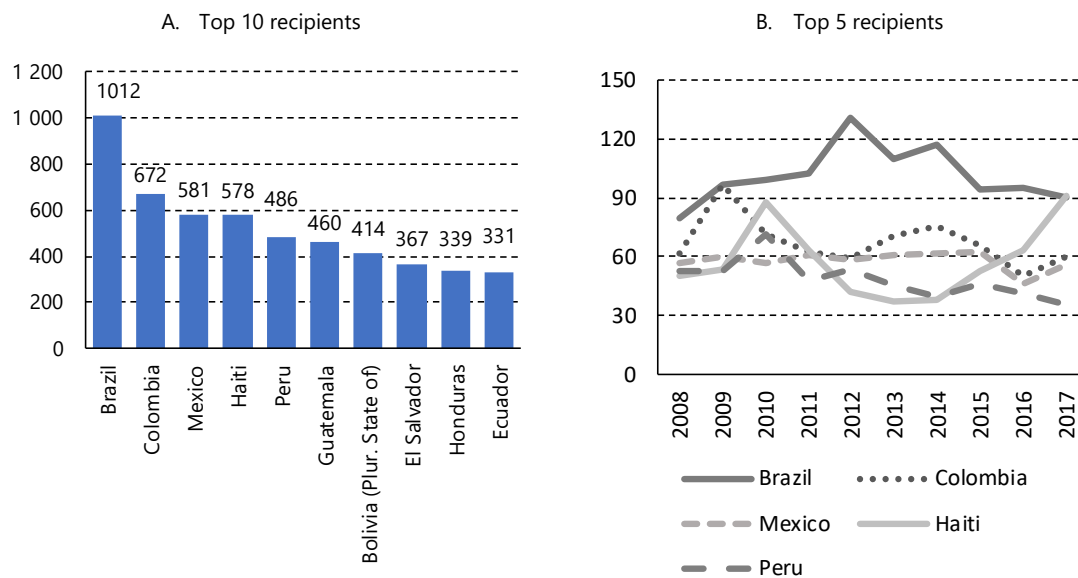
In terms of recipients there is a clear differentiation between the largest single recipient, Brazil, and the remaining 9 among the top 10 (see figure 23). Between 2008 and 2017 Brazil concentrated roughly US\$ 1 billion in bilateral aid for education, 13.5% of the total. Combined with Colombia, Mexico, Haiti and Peru, the top 5 recipients accounted for 44.4% of total flows. As figure 23 also highlights, bilateral education ODA flows to these countries have also registered significant volatility over the period. Flows to Haiti recently accelerated and reached a period high of US\$ 91 million in 2017. In contrast, flows to Peru continue to slow, reaching a decade low in 2017.

Figure 22
Selected countries: bilateral donors providing official development aid (commitments) for education to Latin America and the Caribbean, 2008-2017
(Millions of dollars)



Source: Author's elaboration based on data from OECD.stat.

Figure 23
Latin America and the Caribbean (selected countries): principal recipients of bilateral official development aid (commitments) for education, 2008-2017
(Millions of dollars)



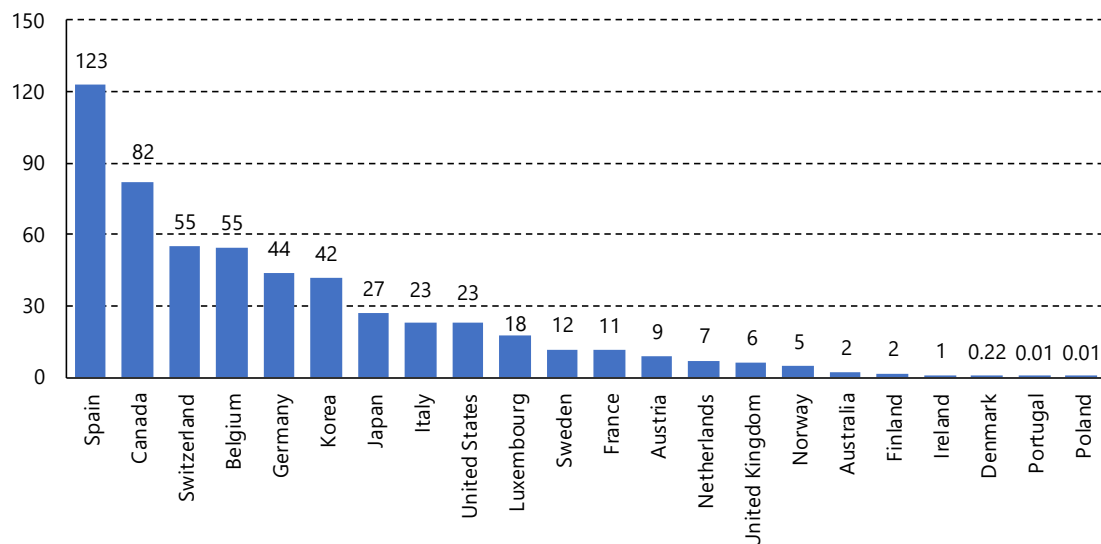
Source: Author's elaboration based on data from OECD.stat.

Note: includes only flows targeting individual countries. If flows to region wide projects were included, they would have been the 8th largest recipient.

As seen above, bilateral ODA flows in support of secondary vocational education between 2008 and 2017 during the period were significantly lower than for education as a whole, averaging US\$ 54.6 million per year. These flows also exhibited a high degree of volatility, reflecting the impact of one-off commitments on a relatively low base of flows. Despite these spikes, the overall trend has been one of decline, with bilateral ODA commitments falling from a high of US\$ 85 million in 2010 to US\$ 36 million in 2017.

The composition of the principal donors for secondary vocational education in the region is different than that for education ODA as a whole. As seen in figure 24, Spain is the single largest donor, followed by Canada, Switzerland, Belgium and Germany. One of the defining characteristics of a number of the principal donors is the high share of ODA they dedicate to secondary vocational education as a share of the overall aid for education. For example, secondary vocational education represents 63% of Switzerland's total ODA for education. Similarly, Belgium (36%), Korea (27%), Luxembourg (43%) and Sweden (32%) also exhibit a higher than average focus on vocational education. These countries are therefore potential partners for designing and implementing new vocational education projects (see box 6).

Figure 24
Selected countries: top 20 bilateral donors providing official development aid (commitments) for secondary vocational education in Latin America and the Caribbean, 2008-2017
(Millions of dollars)



Source: Author's elaboration based on data from OECD.stat.

Bilateral ODA for TVET has largely targeted to the poorest countries in the region. Nicaragua, Bolivia and Haiti have received a significant share of total flows (figure 25). Peru and Honduras round out the top five recipients. Even for the principal recipients of ODA for TVET the magnitude of flows on average per year was quite small, with maximum values of roughly US\$ 8 million per year in Nicaragua and Bolivia. Nevertheless, in some cases these flows were important in relative terms. In the case of Nicaragua, the value of these flows was on average 0.1% of GDP per year, which represented a significant contribution to TVET. Likewise, TVET ODA flows to Haiti averaged 0.1% of GDP between 2008 and 2017, although with significant volatility.

Box 6

Recent secondary vocational education projects in Latin America and the Caribbean

A snapshot of project information for ODA secondary vocational education project commitments in 2017 highlight the wide range of activities supported by bilateral funding. For example, the Austrian Development Agency and the Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung (Germany) are financing projects to strengthen the dual training programme in Mexico.

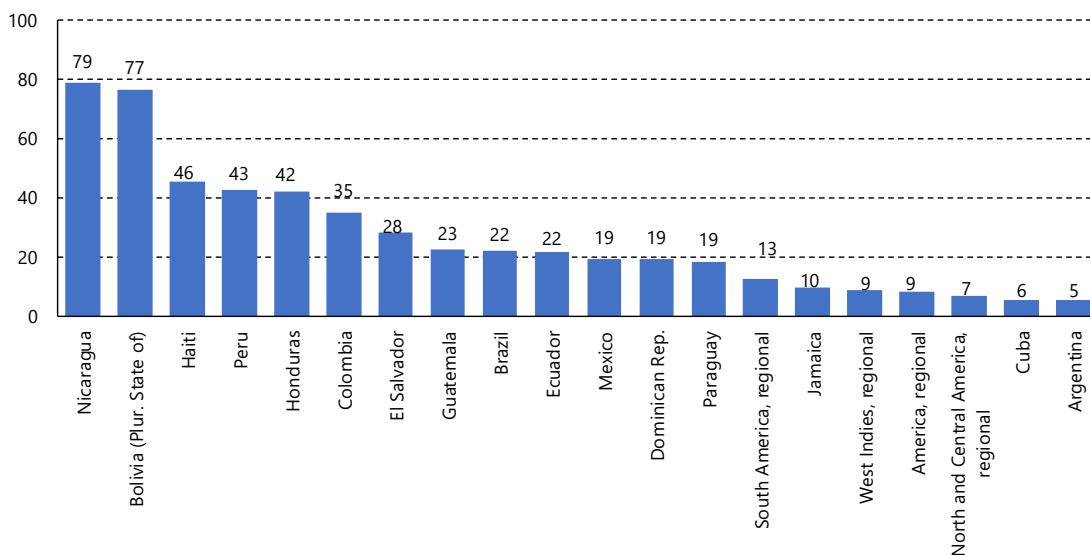
The Swiss Agency for Development and Co-operation has several ongoing projects in Bolivia that seek to provide technical training as a means to reduce poverty. The current phase of these projects is focusing on building on progress made in rural areas, expanding the project’s footprint in urban areas. These projects also aim to support high quality training of educators and providing technical cooperation to the Bolivian Ministry of Education in the implementation of its public policies.

The Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung (Germany) is also financing a project in Honduras to promote non-formal vocational training, with the specific aim of supporting non-formal TVET providers build capacity to offer demand-oriented formation and qualifications. In a similar vein, non-formal TVET providers in Haiti (Global Affairs Canada) and Nicaragua (Ministry of Foreign Affairs of Luxembourg) are to receive support in strengthening their offer of tourism-related courses. The French Development Agency signed an agreement to support INFOTEP, a national training institution, in the Dominican Republic.

The Korea International Cooperation Agency signed commitments for two projects in Haiti including the construction of a school in the country’s Northern Industrial Park and a project to establish a garment technology training centre.

Source: Author’s elaboration based on CRS microdata from OECD.

Figure 25
Latin America and the Caribbean: top 20 bilateral recipients of official development aid (commitments)
for secondary vocational education, 2008-2017
(Millions of dollars)

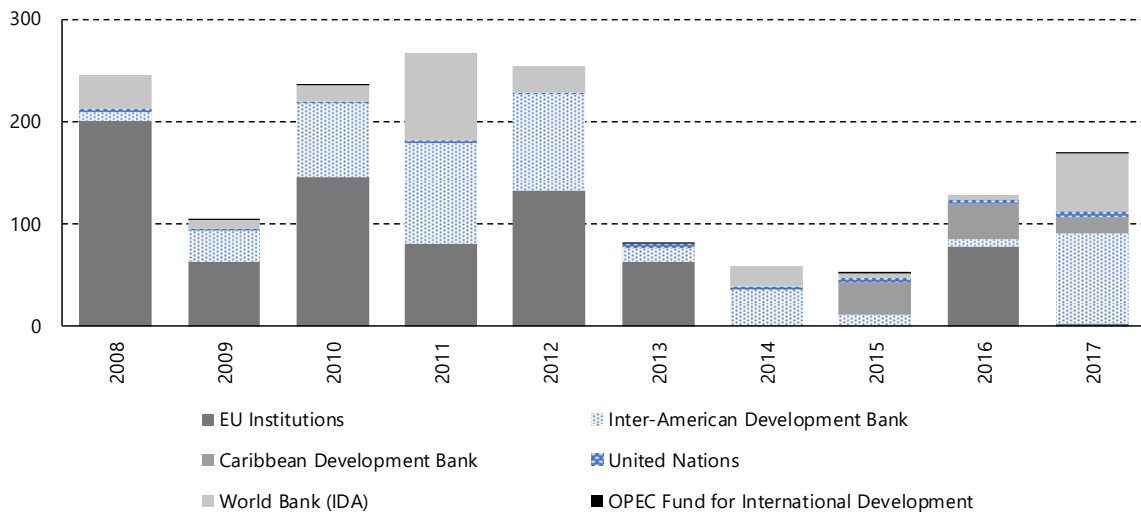


Source: Author’s elaboration based on data from OECD.stat.

2. ODA by multilateral institutions

The volume of ODA commitments from multilateral institutions' own resources —excluding flows from bilateral partners that are channelled through them— targeting education projects in the region has registered significant volatility in recent years, with a downwards bias (figure 26). After averaging US\$ 220 million per year between 2008 and 2012, these flows fell to an average of US\$ 98 million for the last five years of the period. This general trend is also replicated at the level of individual multilateral organizations, with the bulk of being associated with reductions from European Union institutions and the Inter-American Development Bank. In 2016-2017 commitments by multilateral organizations for education rebounded but remain below the 2008-2012 average.

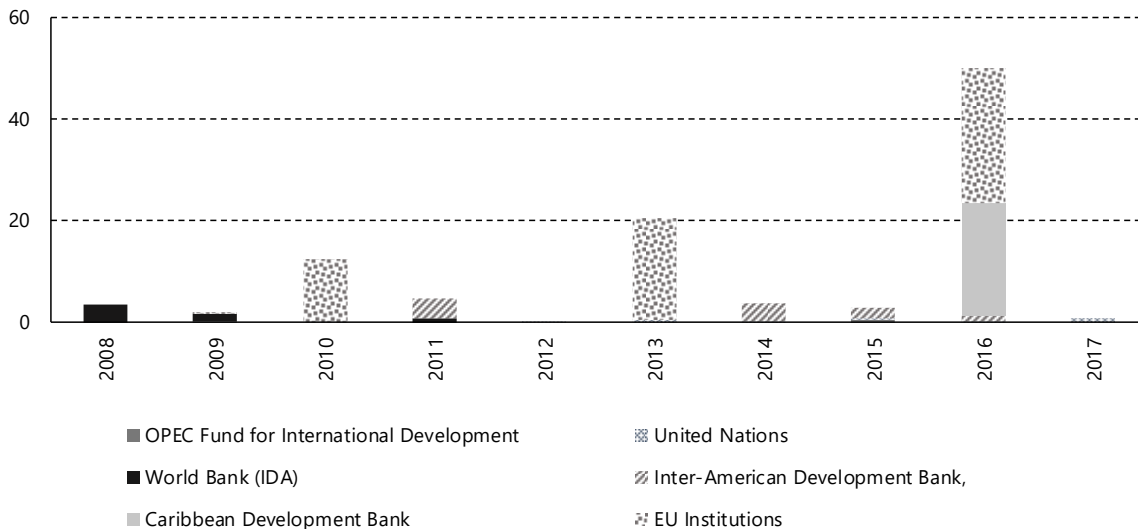
Figure 26
Selected multilateral organizations: ODA commitments for education
in Latin America and the Caribbean, 2008-2017
(Millions of dollars)



Source: Author's elaboration based on data from OECD.stat.

ODA commitments for secondary vocational education account for a very small share of education investments made by multilateral organizations (figure 27). These ODA flows during the period 2008-2017 totalled US\$ 100.8 million, roughly US\$ 11 million per year. Given the relatively limited volume of these flows it is illuminating to examine the individual commitments by the Caribbean Development Bank and European Union institutions in 2016.

Figure 27
ODA commitments by multilateral organizations for secondary vocational education
in Latin America and the Caribbean, 2008-2017
(Millions of dollars)



Source: Author’s elaboration based on data from OECD.stat.

European Union institutions signed commitments for two secondary level TVET projects in the region in 2016. The largest of these, at US\$ 17.7 million, has the aim to improve the employability of individuals in the Dominican Republic, by strengthening the national TVET system to better respond to the demands of the productive sector. The second of these projects aims to create employment opportunities in rural Haiti by strengthening agricultural training.

The Caribbean Development Bank provided ODA loans and grants to a number of Caribbean countries in 2016. Concessional loans for TVET projects were signed with Saint Lucia (Youth Empowerment Project) and Saint Vincent and the Grenadines (Technical and Vocational Education and Training Development). The bank also provided significant support for Guyana’s Skills Development and Employability Project through a loan and a grant (box 7).

Box 7

Skills Development and Employability Project in Guyana

The Ministry of Education of Guyana is implementing a project to deliver TVET equitably across the country. With funding provided by the Caribbean Development Bank, the Ministry of Education will refurbish and expand workshops, classrooms and labs in four secondary schools and three Practical Instruction Centres in regions located away from the major population centres of the country.

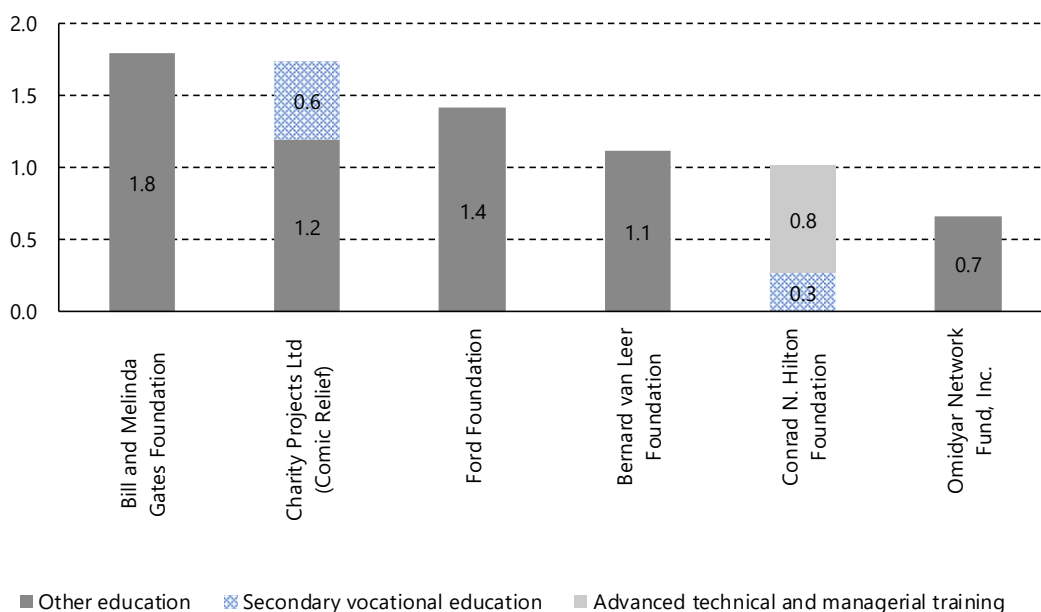
This investment will allow these institutions to award Caribbean Vocational Qualification (CVQ) certifications in five subject areas. The principal objective is to increase the number of secondary school leavers with the appropriate skills and competencies to successfully enter the job market, embark on an economic enterprise, or pursue appropriate postsecondary/tertiary education and training.

Source: Ministry of Education of Guyana.

3. Private sector financing

Despite the rising profile of private investors in funding the Sustainable Development Goals at the global level, these investing modalities have channelled relatively few resources to finance education projects in the region. For example, between 2013 and 2015 philanthropic investing targeting education in Latin America and the Caribbean totalled US\$ 7.8 million. Of this amount, roughly 20% —or US\$ 1.6 million— was committed to vocational education or technical training. Over this time period, the primary philanthropic organizations investing in TVET were Charity Projects Ltd (United Kingdom) and the Conrad N. Hilton Foundation (United States), suggesting that —like the case of bilateral aid for TVET— some organization are more prone to partner with countries to finance TVET than others (figure 28).

Figure 28
Selected philanthropic organizations: cumulative commitments for education
in Latin America and the Caribbean, by educational level, 2013-2017
(Millions of dollars)



Source: Author’s elaboration based on data from OECD.stat.

Impact investment in Latin America and the Caribbean for education appears to be quite limited, though data to fully quantify its scale is severely lacking. A joint survey carried out by ANDE/LAVCA, (2018) identified 860 impact investing deals carried out in 2016 and 2017 in Latin America, with the total volume of investment reaching US\$ 1.4 billion (for a median deal size of US\$ 0.9 million). Only 21 of these deals were related to education, with a total investment of US\$ 18 million. The objectives, financial structure and partners of these deals are unknown, making a detailed assessment of their role vis a viz education financing difficult to ascertain.

IV. Conclusions and policy issues

Making progress towards the achievement of the targets set out in Sustainable Development Goal 4, especially those related to TVET, will require a renewed effort to boost initial finance for education. As this report has attempted to reveal, there is significant differences in initial financing of education and TVET across countries as well as between the various actors in the education and TVET market: governments, households, firms and outside investors. In that regard public policies that target improving the level of TVET investment must be tailored to the specific context of each country.

For Latin America and the Caribbean these efforts will necessarily take place in a period of reduced policy space for implementing and financing public goods and services. Sustained low levels of growth and fiscal consolidation both serve to limit the ability of countries to provide these services while at the same time increasing the demand for them. TVET investment is not immune to these pressures on government finances and therefore financing policies must look to mobilize additional resources as well as improving the efficiency and effectiveness of existing financing programs. In this context, the review of initial financing of education and TVET in the region contained in this report suggests that policymakers consider the following issues:

Transparency of education expenditures at all levels aligned with administrative data. The analysis of TVET financing in the region is extremely hampered by the dearth of statistical information on its extent and its relative importance vis-a-viz other education spending. This lack of information limits the ability to formulate and evaluate TVET financing policies (especially by civil society). Additionally, without information linking spending with outcomes and results it is not possible to analyse with the necessary rigour the efficiency and effectiveness of TVET investments.

National statistical agencies should be strengthened and empowered to capture timely information on firms' training programmes. Estimates based on ongoing economic surveys could

provide invaluable insights into non-formal training and vocational education in the region allowing for the formulation of holistic TVET policies.

Consider reforming tax expenditures for education spending. Evidence suggests that tax expenditures for educational expenditures are largely captured by individuals at the upper end of the income distribution (see section III.C.1). Seen as such, tax expenditures as a policy to expand access to education for all is potentially an inefficient use of resources. Tax benefits for the personal income tax are also poorly targeted, as much of the population of the region is exempt from the tax as minimum extent income levels are high. While the foregone revenues due to these policies are not large —0.16% of GDP on average— they are roughly equivalent to some countries' initial public financing of secondary level TVET.

Strengthening subnational resource mobilization. The provision of public goods and services, particularly of education, has seen significant decentralization in the past decades in the region. This decentralization has often suffered from a lack of overall coordination, which has served to increase territorial inequities. At the same time resource mobilization of own-resources at the subnational level remains very limited, resulting in a high dependence on transfers from the central government. In this context, countries should strengthen their fiscal coordination frameworks while at the same time creating incentives to increase the subnational tax take, especially from instruments that tax immovable property.⁶

Property taxes have several favourable properties that make them particularly appropriate for education finance: potentially large tax base with low tax rates, stable long-term revenue flows, progressive incidence (higher income households typically pay more). However, to the extent that these subnational own-revenues are used to finance public goods and services countries must provide for equalization mechanism to limit potential inequities.

Strengthen financing synergies with firms. Public sector intervention will continue to play a key role in governing and financing the formal and non-formal TVET market, but additional sources of financing can and should be mobilized to respond to the needed investments in vocational education foreseen in Sustainable Development Goals 4. Firms are important benefactors of TVET and should therefore participate in its financing. In that sense, countries should review potential opportunities for public private partnerships to share both the costs and the risks associated with financing TVET. For example, several countries in the region are developing dual systems in line with the German model —most prominently Mexico— but these remain limited.

Evaluate opportunities to channel resources from external sources to TVET. Impact investing and philanthropic giving/investing are a rising phenomenon in sustainable development finance around the world. At the global level private sector investors have already mobilized considerable resources to finance projects that have a tangible social impact, while at the same time generating a financial return. Impact investments in education, however, do not figure prominently in their portfolios. Countries should evaluate the extent to which impact investing and philanthropic

⁶ The reform of the Mexican Fiscal Coordination Law in 2013 provides an example of how this might be accomplished. The new measure modified the formula that determines the distribution of federal resources to subnational governments to include tax effort. This change was introduced as a means to incentivize subnational governments to increase their tax take. In particular, the measure was targeted at mobilizing revenues from property taxes.

investing could play a role in financing specific projects in their countries and particularly how to identify those projects and propose them to potential investors.

Consider the use of innovative forms of market financing. Social impact bonds and human capital performance bonds are also a relatively recent development, but they may provide countries with a unique opportunity to mobilize financing for the provision of social services. However, the structure of these instruments is generally tied to the use of private providers, so countries must consider carefully the role of the private sector in the provision of public goods and services. At the global level these instruments are still in their infancy. This notwithstanding there are examples that could provide insights for the region's countries. For example, the development impact bond for education in India that was launched in 2015.

Bibliography

- Almeida, R. & Carneiro, P. (2006), "The return to firm investment in human capital," No. 3851, The World Bank.
- ANDE/LAVCA (2018), "The Impact Investing Landscape in Latin America: Trends 2016 & 2017".
- Antón, A. (2014), "The effect of payroll taxes on employment and wages under high labor informality", IZA Journal of Labor & Development, vol. 3, No. 1, December.
- Azemati, H. et al. (2013), "Social impact bonds: lessons learned so far", Community Development Investment Review, No. 01.
- Becker, G., Murphy, K. & Tamura, R. (1990), "Human Capital, Fertility, and Economic Growth", Journal of Political Economy, vol. 98, No. 5.
- BIBB (Bundesinstitut für Berufsbildung) (2017), "Dual VET: Vocational Education and Training in Germany", accessed online at: https://www.bibb.de/dokumente/pdf/govet_presentation_dual_vet_en.pdf.
- Blundell, R. et al. (2005), "Human Capital Investment: The Returns from Education and Training to the Individual, the Firm and the Economy", Fiscal Studies, vol. 20, No. 1, February 2.
- Cedefop - European Centre for the Development of Vocational Training (2011), The economic benefits of VET for individuals, Luxembourg, Publications Office.
- Cetrángolo, O. y J. Jiménez (2009), "Rigideces y espacios fiscales en América Latina", Documentos de Proyectos, N° 269 (LC/W.269), Santiago, Comisión Económica para América Latina y el Caribe (CEPAL).
- DANE (2014), "Encuesta de Formación de Capital Humano 2012".
- ECLAC (Economic Commission for Latin America and the Caribbean) (2019), Fiscal Panorama of Latin America and the Caribbean, 2019 (LC/PUB.2019/8-P), Santiago.
- Flores-Lima, J. G. R., González-Velosa, C., & Rosas-Shady, D. (2014), Cinco hechos: Sobre la capacitación en firma en America Latina y el Caribe.
- GIIN (2018), "Annual Impact Investment Survey, 2018".
- Global Impact Investing Network (2018), "Annual Impact Investor Survey 2018: the eighth edition".

- Gómez Sabaini, J. C. & Jiménez, J. P. (2017), *La tributación en los gobiernos subnacionales*, Naciones Unidas Comisión Económica para América Latina y el Caribe (CEPAL).
- Hanni, M., Martner Fanta, R. & Podestá, A. (2015), "El potencial redistributivo de la fiscalidad en América Latina", *Revista CEPAL*.
- Hanushek, E. & Woessmann, L. (2012), "Do better schools lead to more growth? Cognitive skills, economic outcomes, and causation", *Journal of Economic Growth*, vol. 17, No. 4.
- Heyneman, S. P., & Lee, B. (2016). "International organizations and the future of education assistance", *International Journal of Educational Development*, 48, 9–22.
- IMF (2011), "Shifting Gears: Tackling Challenges on the Road to Fiscal Adjustment", April 2011".
- INEED (Instituto Nacional de Evaluación Educativa) (2017), "Informe sobre el estado de la educación en Uruguay 2015-2016".
- INTECAP (Instituto Técnico de Capacitación y Productividad) (2017), "Informe de Auditoría Interna: Del 1 de enero al 31 de diciembre 2016", Guatemala.
- Johanson, R. (2009). "A review of national training funds", World Bank.
- Kenyon, D. A. & Reschovsky, A. (2014), "Introduction to Special Issue on the Property Tax and the Financing of K–12 Education", *Education Finance and Policy*, vol. 9, No. 4, October.
- Kugler, A. & Kugler, M. (2008), "Labor Market Effects of Payroll Taxes in Developing Countries: Evidence from Colombia", No. 13855, National Bureau of Economic Research, Inc.
- Lucas, R. (1988), "On the mechanics of economic development", *Journal of Monetary Economics*, vol. 22, No. 1.
- Marcel, M., M. Guzmán and M. Sanginés (2014), *Presupuesto Para el Desarrollo en América Latina*, Inter-American Development Bank, Washington, DC.
- Mincer, J. (1989), "Job Training: Costs, Returns, and Wage Profiles", No. 3208, National Bureau of Economic Research, Inc.
- _____(1958), "Investment in Human Capital and Personal Income Distribution", *Journal of Political Economy*, vol. 66.
- Ministerio de Trabajo, Empleo y Seguridad Social (2018), "Crédito para la Formación Profesional: Preguntas Frecuentes".
- Montenegro, C. E. & Patrinos, H. A. (2014), *Comparable Estimates of Returns to Schooling around the World*, Policy Research Working Papers, The World Bank, September.
- OECD (2019), "Social Impact Investment 2019: The Impact Imperative for Sustainable Development".
- _____(2018), "Private Philanthropy for Development".
- _____(2015), *Social Impact Investment: Building the Evidence Base*, OECD Publishing, Paris.
- Office of Management and Budget (2012), "Analysis of Office of Management and Budget, Analytical Perspectives, Budget of the United States Government, Fiscal Year 2013".
- Receita Federal do Brasil (2017), "Grandes Números IRPF – Ano-Calendarário 2016, Exercício 2017".
- Romer, P. M. (1986), "Increasing Returns and Long-Run Growth," *Journal of Political Economy*, vol. 94, No. 5, October.
- Rothschild, S. (2013), "Human capital performance bonds", *Community Development Investment Review*, No. 01.
- Secretaría de Hacienda y Crédito Público (2019), "Presupuesto de Gastos Fiscales 2018".
- SENAC (Serviço Nacional de Aprendizagem Comercial) (2018), "Demonstrações Contábeis Consolidadas - exercício 2017".
- SENATI (Servicio Nacional de Adiestramiento en Trabajo Industrial) (2018), "Memoria Anual 2018", Lima.

- Sepulveda, C. & Martinez-Vazquez, J. (2012), "Explaining property tax collections in developing countries: the case of Latin America", *Decentralization and Reform in Latin America*, Edward Elgar Publishing, pg. 172–222.
- Sevilla B., M. P. (2017), "Panorama de la educación técnica profesional en América Latina y el Caribe", No. 222, Naciones Unidas Comisión Económica para América Latina y el Caribe (CEPAL).
- Stevens, A., Kurlaender, M. & Grosz, M. (2015), "Career Technical Education and Labor Market Outcomes: Evidence from California Community Colleges", No. 21137, National Bureau of Economic Research, Inc.
- Uher, C. (2017), "Diversifying the funding sources for TVET", pg. 24.
- UNDP (United Nations Development Programme) (2010), "What Will It Take To Achieve the Millennium Development Goals? An International Assessment", June.
- UNESCO (2016), "Education 2030: Incheon Declaration and Framework for Action for the implementation of Sustainable Development Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning for all".
- _____(1984), *Terminology of technical and vocational education*, UNESCO, Paris, France.
- UNESCO Institute for Statistics (2016), *A roadmap to better data on education financing*. Information paper; 27, UNESCO Institute for Statistics, February.



UNITED NATIONS

Series

ECLAC

Macroeconomics of Development

Issues published

A complete list as well as pdf files are available at
www.eclac.org/publicaciones

200. Financing of education and technical and vocational education and training (TVET) in Latin America and the Caribbean. Michael Hanni (LC/TS.2019/29), 2019.
199. La identificación y anticipación de brechas de habilidades laborales en América Latina: experiencias y lecciones. Sonia Gontero y Sonia Albornoz (LC/TS.2019/11), 2019.
198. Metodología para la construcción de un indicador adelantado de flujos de capitales para 14 países de América Latina, Pablo Carvallo, Cecilia Vera, Claudia de Camino y José Sánchez (LC/TS.2018/120), 2018.
197. Territorial inequality, equalization transfers and asymmetric sharing of non-renewable natural resources in Latin America. Giorgio Brosio, Juan Pablo Jimenez and Ignacio Ruelas (LC/TS.2018/113), 2018.
196. Decentralized provision of education: methodological suggestions for analysis, with application to Mexico. Giorgio Brosio (LC/TS.2018/108), 2018.
195. Ciclo de precios y regímenes fiscales vinculados con los recursos naturales no renovables en América Latina y el Caribe. Michael Hanni, Juan Pablo Jiménez e Ignacio Ruelas (LC/TS.2018/92), 2018.
194. Gastos e ingresos públicos de América Latina desde fines de los años ochenta hasta 2015. Tendencias observadas, desafíos actuales y lineamientos de reformas. Oscar Cetrángolo, Javier Curcio, Juan Carlos Gómez Sabaini y Dalmiro Morán (LC/TS.2018/61), 2018.
193. La construcción de sistemas de información sobre el mercado laboral en América Latina. Sonia Gontero y María José Zambrano (LC/TS.018), 2018
192. Financiamiento y gasto educativo en América Latina. Oscar Cetrángolo y Javier Curcio (LC/TS.2017/95), 2017.
191. Evolución reciente del sector educativo en la región de América Latina y el Caribe. Casos de Chile, Colombia y México. Oscar Cetrángolo, Javier Curcio y Florencia Calligaro (LC/TS.2017/94), 2017.
190. Las transformaciones tecnológicas y su impacto en los mercados laborales. Jürgen Weller (LC/TS.2017/76), 2017.

MACROECONOMICS OF DEVELOPMENT

Issues published:

200. Financing of education and technical and vocational education and training (TVET) in Latin America and the Caribbean
Michael Hanni
199. La identificación y anticipación de brechas de habilidades laborales en América Latina: experiencias y lecciones
Sonia Gontero y Sonia Albornoz
198. Metodología para la construcción de un indicador adelantado de flujos de capitales para 14 países de América Latina
Pablo Carvallo, Cecilia Vera, Claudia de Camino y José Sánchez
197. Territorial inequality, equalization transfers and asymmetric sharing of non-renewable natural resources in Latin America
Giorgio Brosio, Juan Pablo Jimenez and Ignacio Ruelas

