

Longer Term Investments

Education services

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- A growing middle class in emerging markets (EM) and increased urbanization offer attractive growth drivers for institutions and companies providing education services.
- Economies worldwide are increasingly dependent on the services sector, requiring education and specialized training to produce knowledgeable workers. As a result, education improves people's career prospects and reduces the risk of unemployment.
- We estimate the current market size at USD 6trn. It should enjoy a sustainable high single-digit growth rate in nominal terms for years. Due to the public sector's diminished ability to meet rising demand, the market for private education will grow even faster.
- We recommend gaining exposure to the theme by investing in a diversified portfolio to minimize stock-specific risks.

Our view

A growing emerging market (EM) middle class means that more people have more disposable income. Members of this large and expanding group seek educational opportunities for themselves and their children to improve their prospects. Urbanization too is rising in emerging countries. Economies worldwide are increasingly based on the services sector, so they will require significant investment in human capital, education and specialized training to produce knowledgeable workers. The cumulative impact of favorable demographic and socio-economic trends, coupled with the superior earnings potential of trained graduates, will continue fueling the secular growth of the global education service market, in our view.

The overall annual global market for education spending is around USD 6trn and is expected to increase at a high-single-digit rate over the next few years, outpacing underlying global GDP growth. However, many governments have limited resources for education, lessening their ability to meet rising demand for it. The market for private education is likely to expand even faster.

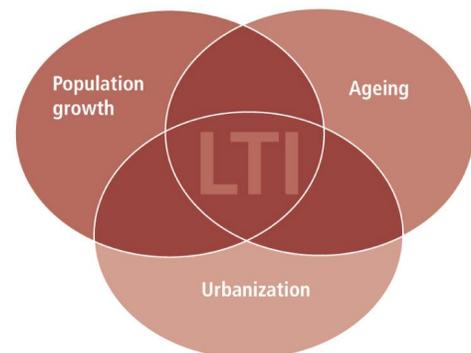
We recommend investing in a diversified portfolio to minimize stock-specific risks.



Source: Martin Ruetschi

Introduction to the Longer Term Investments (LTI) series

- › **The Longer Term Investments (LTI) series** contains thematic investment ideas based on long term structural developments.
- › Secular trends such as population growth, ageing, and increased urbanization create a variety of longer term investment opportunities.
- › Investors willing to invest over multiple business cycles can benefit from potential mispricings created by the typically shorter term focus of stock markets.



Education services for a better life

UN studies show that household wealth is an important determinant of a child’s likelihood of attending school (see Fig. 1). Survey data also shows that disparities in school enrollment between urban and rural locations persist across countries. Approximately 1.8 billion people worldwide qualified as middle class in 2009, a number expected to reach 5 billion by 2030, according to our estimates. Ensuring inclusive and quality education for all and promoting lifelong learning also constitute one of the 17 Sustainable Development Goals (SDGs) adopted by the UN General Assembly in 2015.

The rising disposable income and increased urbanization of the expanding EM middle class are resulting in its members seeking greater educational opportunities for themselves and their children to improve their prospects (see Fig. 2). In addition, eliminating gender disparities raises school enrollment rates for women. Given the increasing reliance of economies worldwide on the services sector, they will require significant investment in human capital, education and specialized training to produce knowledgeable workers. These favorable demographic and socio-economic trends, along with the superior earnings potential of education graduates (according to data from OECD), will continue to fuel growth in the global education service market, we believe.

Opportunities in the education market

Education services are more than just school

Education services provide students with the concepts and knowledge they need for careers in business and their private lives. The education industry has evolved from a frontal-teaching style in public schools to a more comprehensive but less homogeneous market. Numerous different methods, products, debates, issues and infrastructure are all focused on this one goal, and in looking at them one realizes quickly how large and complex the industry is.

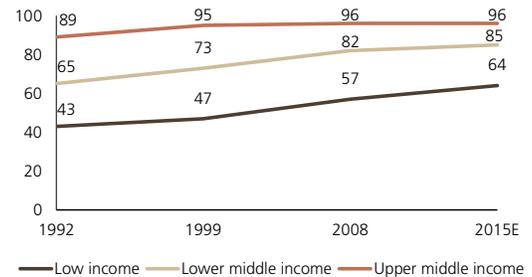
The growth in education worldwide is being fueled by several demographic and economic factors, those mentioned above as well as recognition of the personal and economic benefits gained by graduates of higher education institutions. Conventional wisdom holds that national governments should fund and deliver this “public good” through state-controlled public education systems. Yet many governments are limited in the resources they can devote to higher education due to their debt burdens. The result is a diminished public sector ability to meet the greater demand (see Fig. 3). This situation is creating opportunities for private education providers to enter these markets and deliver high-quality education.

Dependence on private funding and services increase

As a result, the private sector is playing a large and expanding role in education worldwide and, in our view, needs to engage even more fully in solving the education crisis through a combination of funding and capabilities. Startups are sprouting to fill gaps and create new technologies to serve this increasingly lucrative field. Their contribu-

Fig. 1: Household wealth is a key determinant of a child’s likelihood of attending school

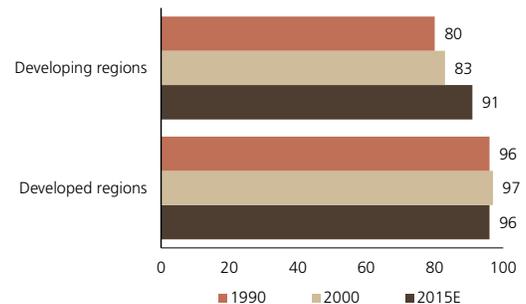
Completion rate in primary education, low and middle-income countries, 1992-2015 (percentage)



Source: UNESCO, UBS, as of 2015

Fig. 2: EM school enrollment has been rising and still has room to grow

Adjusted net enrollment rate* in primary education, 1990, 2000 and 2015 (percentage)

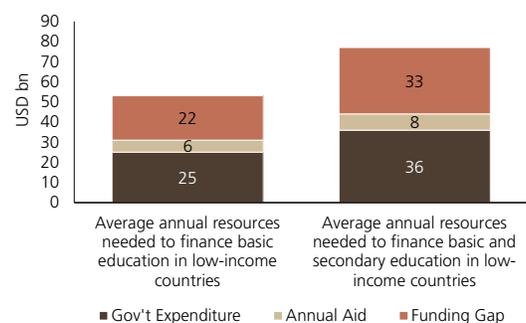


Note: * Adjusted net enrollment rate is defined as the number of pupils of the official age for primary education enrolled either in primary or secondary school, expressed as a percentage of the total population in that age group.

Source: UNESCO, UBS, as of 2015

Fig. 3: The public sector has limited resources to meet growing demand for education

Global education financing gap, USD



Source: UNESCO, UBS, as of 2015

tions, coupled with innovative new ideas about what the average classroom can (and should) look like, are re-shaping what learning means for students around the world.

Moreover, while private capital has been closing the education gap in various market and education segments, governments still play a critical role in driving policy and improving education systems.

Corporate giving to global health is currently 16 times what it is to global education. With awareness of the need for expanded global education services rising, policy support or funding increases from governments and international aid donors can certainly help to rev up the sector's growth.

Education is a multi-trillion dollar market globally

The overall global annual market for education spending approaches USD 6trn. There are more than 1.4 billion students and 62.5 million educators worldwide. We expect the market to expand at a high single-digit rate in nominal terms over the next few years and outpace underlying global GDP growth. The cost of education has risen 84% since 2000, exceeding consumer price inflation by 37 percentage points.

Within this multi-trillion-dollar business, K-12 (primary to high school) and post-secondary education accounts for three-quarters of spending. But both are estimated to grow at only a mid-single-digit rate yearly. Other areas such as e-learning, for-profit post-secondary, language learning and test preparation/tutoring/counseling are expected to generate much higher growth, at a rate in the high teens annually over the next few years. These areas are also where the private sector is playing a greater and important role.

Vast growth potential from developing countries

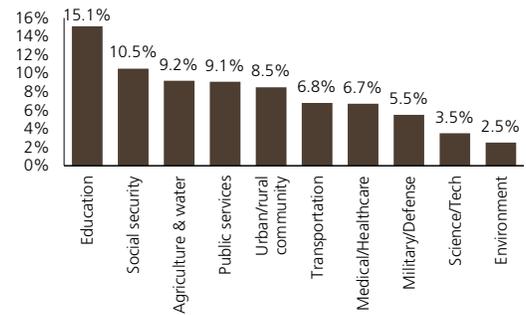
The US remains by far the largest education service market. It accounts for around one-third of education expenditure worldwide. Private spending represents more than 60% of what the US pays for higher education. In Europe, education expenditures come primarily from the public sector.

A marked imbalance between supply and demand characterizes the market, however, especially in developing economies. As a result, its growth in EM countries is double the global average – research estimates that the compound average growth rate of the education sector in China and India will reach 14-16% by 2020. In addition, education has been the top priority for China's government in terms of fiscal spending since 2010. At 15% in 2014, the share allocated to it surpassed social security (11%), healthcare (7%), military and defense (6%), and the environment (3%) (see Fig. 4). Education also occupies a crucial share of household spending worldwide, especially in EM (see Fig. 5).

On the other side of the Pacific Ocean, Brazilian policymakers have also launched an aggressive educational subsidy program known as FIES. The program's goal is to incentivize educational matriculation,

Fig. 4: Education has been the largest spending item by China's government since 2010

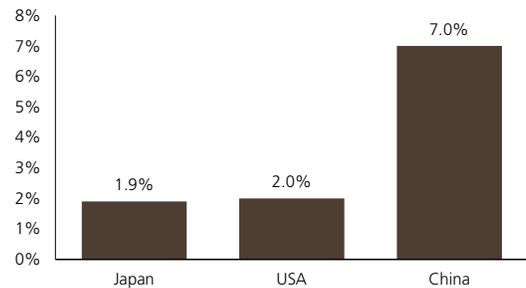
China government fiscal spending by sector in 2014, 2015



Source: National Bureau of Statistics of China, UBS, as of 2016

Fig. 5: Education's notable share of household spending worldwide

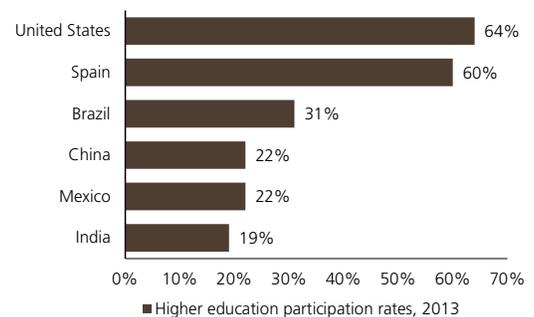
Percentage of disposable income spent on education



Source: US Dept. of Labor, China Statistical Yearbook, Japan Statistics Bureau, as of 2015

Fig. 6: The EM higher education market is still under-penetrated

Higher education participation rates, 2013



Source: Government statistics, UBS, as of 2014

especially among the country's middle and lower-class populations. A response to the lack of education availability, FIES provides significant financing benefits to students and opens up robust market opportunities for quality providers of secondary education. By 2021, Brazil is projected to have 24 million 18-to-24 year olds. Its government is committed to the ambitious goal of achieving a post-secondary education enrollment rate of more than 50% by 2020, which would more than double the current 23% rate and add millions of students to school rosters.

Other developing countries with large addressable markets are similarly under-penetrated, as evidenced by the following participation rates for 2013: Brazil (31%), China (22%) and India (19%), all of which are well below rates of developed countries such as the US and Spain, whose participation rates hovered around 60% (see Fig. 6).

Because global education growth is being fueled by several demographic and economic factors, any positive changes in them could benefit the entire education sector. For example, the Chinese government's decision to abolish the decades-old one child policy in late 2015 is expected to boost the long-term prospects for the education industry as the number of children should multiply.

Impact investing and the UN SDGs

Goal four of the UN SDGs calls for ensuring "inclusive and equitable quality education" and "lifelong learning opportunities" for all. Education is essential to maintaining gains in social mobility, productivity and health, each of which bears directly on the success or failure of the sustainable development agenda.

Through private sector initiatives that expand the reach and improve the quality of education, particularly in EM countries, impact investors can help address the growing gap in public funding, specifically via the following:

- A 2006 report published by the Victoria Department of Education and Training in Australia, titled "The Impact of School Infrastructure on Education Outcomes" found that the design and quality of school infrastructure directly influenced education outcomes. Investing in school infrastructure, particularly in underserved communities, can have a notable impact.
- High education costs and a lack of access to credit are key barriers to education opportunities for low-income students. Micro-finance institutions, which offer credit to low-income families to help them send their children to school, are a way of widening financing options to base-of-pyramid communities. In developed and emerging countries, impact investors can also invest in loan facilities, or risk guarantees for loan facilities, that enable banks to lend more in underserved neighborhoods.

- Online education platforms and other ed-tech services may markedly reduce education costs for low-income students. Ed-tech services can also make education more available in rural areas, where long school commutes have led to higher drop-out rates. This could be particularly important for girls, as safety concerns during commutes have been cited as a key barrier to continuing education.
- EM governments do not always have the resources to offer education to all their citizens, so parents often depend on private education to fill the gap. Investing in education holding companies, which operate networks of schools, can achieve impact at scale.

Despite these opportunities, investors must also consider the SDG-related investment risks associated with this theme. As demand for education grows, fierce competition for places and rising education costs could perpetuate problems for the poor. Particularly when investing in private education models, impact investors should take extra precautions to ensure that schooling does not become unaffordable for lower-income households. Similarly, when investing in student financing initiatives, they must ensure that recipients do not take on onerous debt.

By managing these risks, impact investing can help mobilize private sector engagement in education service delivery, promote innovations in learning and improve access to finance for low-income students, making the theme especially attractive. Dedicated but smaller scale solutions, primarily in fixed income and venture capital funds, exist for those looking to invest in it (a rough breakdown by asset class of the impact investment fund universe for this theme is illustrated in Fig. 7). In addition, investors may devote funds to it via generalist private equity and venture funds or direct investments. When doing so, impact investors must assess on their own whether the investments meet the impact criteria of intent, measurability, verification and additionality.

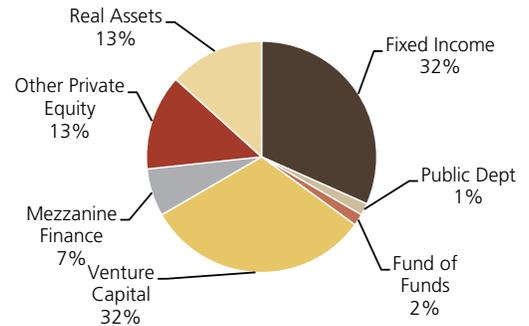
Andrew Lee, Head Impact Investing and Private Markets
James Gifford, Senior Impact Investing Strategist
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Link to sustainable investing

To identify whether a Longer Term Investment (LTI) theme qualifies as sustainable investment (SI) theme, we follow a two-step process. The first works top down. LTIs are assessed according to whether they match one or more of the sustainability topics within the environmental, social or governance (ESG) categories (see Fig. 8). In general, these themes must contribute to environmental sustainability (e.g. a low-carbon economy), resource (e.g. energy, water) efficiency, a sustainable society (e.g. health, education, poverty reduction, equality and social inclusion, etc.) or sustainable corporate governance.

Fig. 7: Dedicated impact investing solutions exist for education services

Breakdown of the education-focused fund universe by asset class



Note: Based on total number of impact funds in the education sector in the ImpactBase Database.

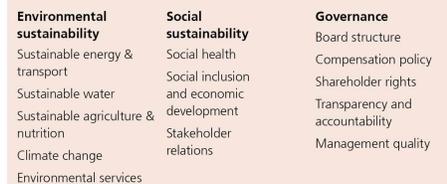
Source: GIIN ImpactBase, as of February 2017

Fig. 8: Overview of LTI topic clusters

Top-down analysis – investment themes



CIO investment theme categories*



Bottom-up analysis – representative company universe



* For simplicity, all topic clusters include several subcategories not included in the graph. For example: sustainable water includes water utilities, treatment, desalination, infrastructure & technology, water efficiency and ballast-water treatment. Within each subcategory are further specifications; e.g. water treatment includes filtration, purification and waste treatment. In total, we have more than 100 categories (potential sustainable investment themes) in our thematic database.

Source: UBS, as of March 2017

The second, bottom-up step consists in considering a thematically aligned representative universe of companies, 80% or more of which must align with one or more of the ESG categories. For each company, a minimum business involvement threshold is applied, e.g. 25% of revenues must derive from the thematic activity under consideration.

This report highlights the favorable demographic and socio-economic trends – a growing EM middle class, increased urbanization and economies worldwide shifting toward the services sector – that underlie the theme. Their cumulative impact will continue driving the secular growth of the global education service market. This LTI theme fits well within the SI thematic framework. It addresses, in particular, the angle of a sustainable society, as most companies operating in this sector are diversified consumer service companies that provide such education services as K-12 and post-secondary schools, e-learning, language learning and test preparation/tutoring/counseling, etc.

As mentioned in the section on impact investing, quality education relates to Goal 4 of the UN SDGs and is therefore suited for SI. The social impact they have can be generally assumed to be a positive one. Key issues when looking at the ESG performance of education companies are their ability to retain skilled employees, their ethical standards with respect to their marketing and recruiting practices, their service quality, their privacy and data security policies, and the energy efficiency of their operations.

MSCI ESG ratings offer performance guidance in such areas by rating companies within each industry from AAA (best) to CCC (worst). The rating is based on a selection of the most important ESG issues in each industry (see Fig. 9).

Investment conclusion

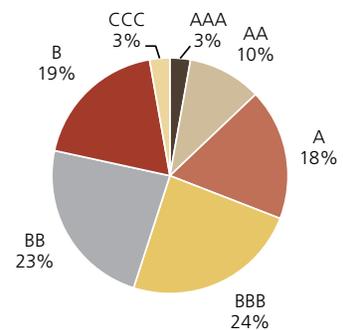
Multiple areas benefit from the structural trend of education

We identified four main growth areas that we believe can directly benefit from the structural trend of the global education service market:

- Rising enrollment rates due to the aforementioned demographic and socio-economic trends create enormous demand for education facilities. The private sector could fill the gap left by public funding.
- Economies worldwide are increasingly based on the services sector, and in our view they will require immense investment in human capital, advanced education and specialized training to produce knowledgeable professionals. The market for educational services such as after-school tutoring, study abroad student service, higher education and vocational training/career development should go on expanding rapidly, we believe.
- Increasing internet and smartphone penetration rates ease access to education, allowing students to study whenever and wherever they want. Education companies offering on-line tutorials, e.g.

Fig. 9: Entire MSCI ESG research corporate coverage

Rating distribution in %, 5,720 companies



Note: AAA = best possible ESG rating; CCC = worst.
Source: MSCI ESG Research, UBS, as of February 2017

language training, can scale their reach in a cost-efficient way, with relatively low incremental costs per additional student.

- Other players in the broad education ecosystem, such as providers of supplies (educational materials/tools) and application software/digital content/e-learning solutions, etc., could also benefit.

Secular long-term trends should lead to higher growth and lower volatility

The global market for education expenditures could continue to grow at a high single-digit-rates for the next few years, in our estimate, and outpace underlying global GDP growth. Similar or higher organic earnings-per-share growth rates should be achievable as the private sector focuses on the for-profit part of the education industry, while governments usually fund and deliver the lower margin “public good” services.

As most companies in the education sector tend to have predictable underlying demand and stable cash flow, the business results and stock price movements of our theme are usually countercyclical, and could provide diversification benefits to an overall equity investment portfolio. Average volatility should also be lower due to expectations of more stable revenue and earnings than the MSCI World.

Education service companies usually enjoy high entry barriers once established, as many industry sub-sectors are government regulated. Moreover, offline education institutions also require high upfront capital expenditure for their physical plant, so it could be difficult for challengers to quickly ramp up to scale.

Risks to investing in the theme

We recommend a diversified exposure to minimize the theme's stock-specific risks, which include:

- **Regulatory scrutiny/business practices risk:** The business of operating education service companies is usually subject to policy and regulatory oversight. For example, for-profit education providers, especially operators of higher education institutions in certain markets, are under intense scrutiny by the government and other organizations, which have on occasion accused the schools of boosting enrollment to lift revenues regardless of student qualification, since the students are paying with loans provided by government funding.
- **Technology disruption:** Although on-line education is still at a nascent stage, it is becoming a disruptive trend in the global education market. More and more internet companies could enter the market and gain market share from existing education service providers. The manner of personal access to education services could evolve such that current providers might not be able to reinvent themselves. On the other hand, competition in the off-line education business could also intensify due to a struggle to acquire teaching resources and students.

- **Asset-heavy for schools:** Due to their large off-line exposure, players in the education sector, especially those that operate physical education institutions or private schools, could face bottlenecks in business expansion to support their further growth. High capital expenditure could also impose pressure on cash flow and margins given the limitations in operating leverage if the companies cannot reach sufficient scale. One way to mitigate this risk is to operate with a simple, light-asset structure. Usually these schools do not own the properties they operate from but lease them from third parties such as REITs. These simple structures allow relatively quick expansion and provide high operating leverage.
- **EM exposure:** Around half of the theme is centered on EM countries in Asia Pacific, Brazil and South Africa. Our analysis also shows that their education sectors are growing faster than those of developed economies due to the favorable structural trends mentioned above. While we still believe the underlying long-term structural developments of global education services could endure over multiple business cycles, the health of emerging economies could play a critical role in achieving this goal, and might bring uncertainty and volatility along the way.

Appendix

Terms and Abbreviations

Term / Abbreviation	Description / Definition	Term / Abbreviation	Description / Definition
A	actual i.e. 2010A	COM	Common shares
E	expected i.e. 2011E	GDP	Gross domestic product
K	One thousand	Shares o/s	Shares outstanding
UP	Underperform: The stock is expected to underperform the sector benchmark	CIO	UBS WM Chief Investment Office

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