

PAYING FOR EDUCATION IN DUBAI: IS IT REALLY WORTH IT?

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MARCH 1, 2017
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Public Policy Forum

Abstract

Concerns from parents in Dubai about the rising cost of school fees are becoming increasingly common. In response, private education providers argue that their tuition fees have only risen in accordance with guidelines set by authorities that allow an increase of up to 6.5% if annual inspections by the statutory regulator show that they deliver ‘outstanding’ quality of education. This paper investigates whether the rise in fees that has been made on this basis is justified, through an analysis of student test results, a cost-benefit analysis and Return On Investment projections that estimate expected monetary rewards among school graduates. Our primary conclusion is that while future benefits are likely to exceed the high investment required to educate a child at a school rated as “outstanding”, “very good”, or “good”; parents tend to be concerned because the trend in PISA school performance results show that education standards have not increased at the same rate that fees have. Policy issues are discussed and recommendations made for reigning in fees and addressing underlying structural factors that hinder system performance.

1. Introduction

School fees and their significant rise in recent years have become a major burden on families in Dubai, to the extent that the issue is regularly drawing interest in the media with reports of families with two children needing to spend upwards of Dh2 million on education (Gulf News, 2016a). Despite UAE households have amongst the highest disposable income level in the world, with a real term increase of 41.5% predicted by 2030 (PWC, 2016), many of its low to middle income parents are now finding themselves struggling to keep up with hikes in school fee and questions are being raised about whether this trend is justified.

A related consideration for parents and policymakers alike is the quality and standards of education. The performance of schools in the UAE’s seven Emirates are regulated by three statutory authorities, each with its own requirements and standards. In September 2015, the UAE Ministry of Education introduced the ‘UAE School Inspection Framework’, a 130-page document outlining standardised metrics to rate schools throughout the country in a consistent manner.

In response to concerns about rising fees and the need to ensure education quality, the Knowledge and Human Development Authority (KHDA) that regulates education standards in Dubai, introduced a school fee framework in 2012 that allows schools to increase their fees only if they meet specified performance standards when they are inspected. The rationale being that parents should only be expected to pay more if their children are given a better quality education, and that schools who do not meet minimum performance standards should have no right to demand more money from parents. Four years on from the introduction of these regulations, this paper revisits the cost paradox of private education and asks if private schooling in Dubai now offers parents genuine ‘Bang for your Buck’ as a result of this policy.

2. The Education Landscape in Dubai

Over a quarter of a million children - representing 91% of Dubai’s student population - attend the 173 private schools scattered across the Emirate. As of 2016, these schools offer 17 different curricula depending on various affiliations that they may have with curriculum setting bodies based in other countries (see Figure 1).

Demand for education in Dubai is expected to increase significantly as its population is projected to more than double from a current 2.5 million people to up to 5.2 million by 2030. The rapid growth in demand for education has led to a shortage in supply in recent years in the Emirate.



Figure 1: Education landscape in Dubai 2015-2016 (Source: KHDA)

As shown in Figure 2, it is clear that Dubai is in dire need of quality schools that charge less than AED 40,000 a year in fees. However, rising fees are not about a simple contest between the forces of supply and demand.

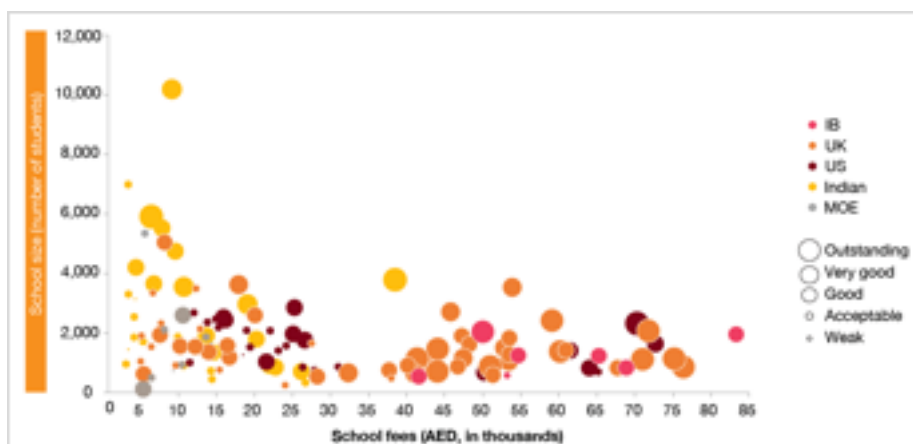


Figure 2: Spread of Dubai’s private schools in 2015 (Source: KHDA)

2.1 KHDA School Fees Framework

In 2012, a policy framework was introduced by the KHDA to regulate and justify private school fee increases. The underlying rationale was to provide an evidence-based mechanism for parents and education investors alike with incentives geared to ensure the supply of high-quality private education.

The policy relies on two primary inputs, which are (1) the quality of education as determined by inspections conducted by the Dubai School Inspection Bureau (DSIB) and (2) the Education Cost Index (ECI) compiled by the Dubai Statistics Centre (DSC). The mechanism for setting fee increases ties fee increases to performance inspections as shown in Table 1. This criterion applies to all private schools that have been operating for more than three years.

Table 1: Applicable increase in school fees as per KHDA

DSIB School Performance Results	Percentage
Outstanding	ECI x 2
Very Good	ECI x 1.75
Good	ECI x 1.5
Acceptable	ECI
Unsatisfactory	ECI

In 2014, complaints were voiced by some schools that they could not make profit when new players entering the market were setting lower fees. Additionally, some schools claimed that desired improvements are not sufficiently covered by the limits set by the existing framework. A comprehensive study was consequently carried out by the Executive Council of Dubai to determine a fair rate of return for the education sector. From September 2015, an additional provision was made to allow for applications for an exceptional fee increase according to the fair rate of return measurement and linked to the quality of education as per KHDA's DSIB rating (see Table 2). The approval of requests with regard to fee increase is subject to several conditions including that the school must have been in operation for at least six academic years. Furthermore, it must have an occupancy level of at least eighty per cent; the basic salary of teaching staff to be greater or equal to twenty-five per cent of total expenses; and just one application is allowed in a twelve-month period. Whilst some thirteen per cent of existing schools applied for the increase, only six per cent were successful in securing final approval.

Table 1: Applicable increase in school fees as per KHDA

DSIB School Performance Results	Fair Rate of Return Threshold Percentage
Outstanding	10%
Very Good	9.5%
Good	9%
Acceptable	8%
Unsatisfactory	7%

2.2 Impact of KHDA policy on school performance as evidenced by inspection results

According to KHDA, the result of this policy has been a significant improvement in the quality standards achieved by schools as evidenced by the DSIB inspections. By 2014-2015, 52% schools were ranked 'outstanding' or 'good', compared with just 24% in 2008-2009. Moreover, the majority of students (61%) were enrolled in schools that achieved these rankings in the 2015-2016 academic year (see Figures 3 and 4) according to KHDA (2016). Driven by a belief that favourable DSIB assessments indicate better quality education, local Emirati parents are increasingly enrolling their children in private schools rather than the free-of-charge public schools. Around 77% of Emirati students are now enrolled in the 24 Dubai's private schools that achieved high DSIB ratings (KHDA, 2012).

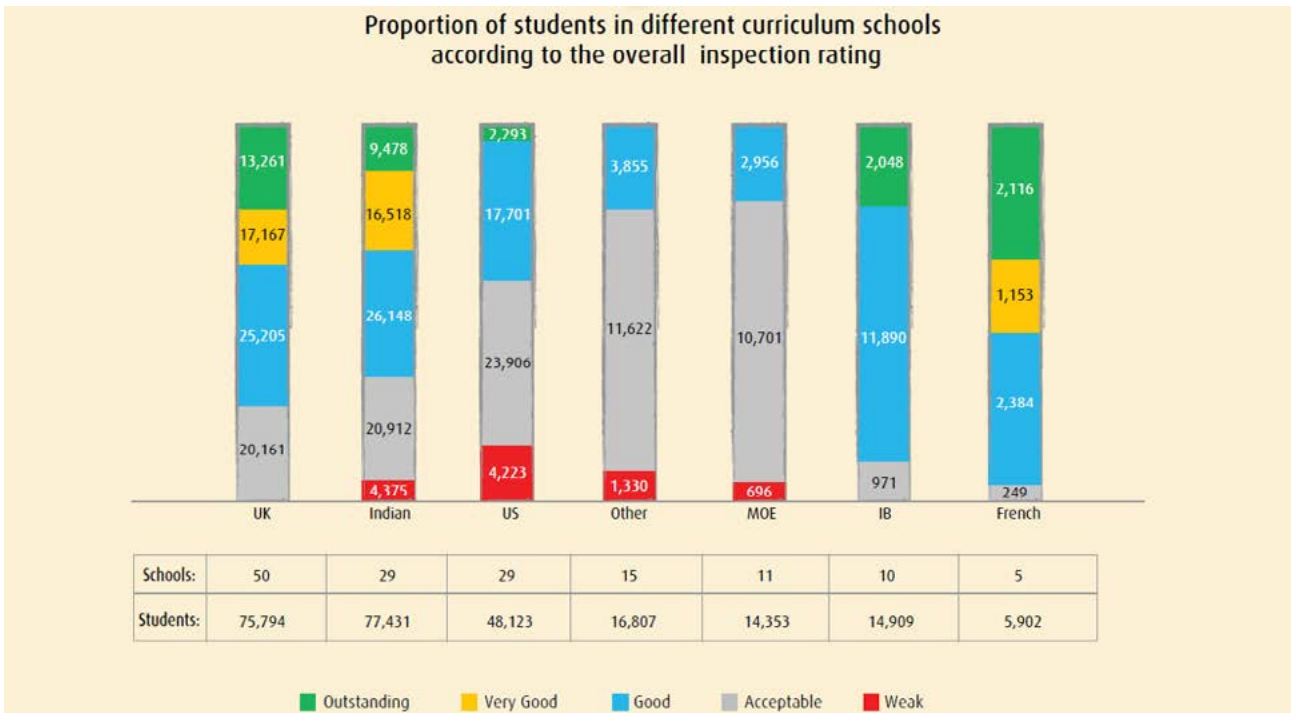


Figure 3: Dubai school ratings by curriculum type (Source: KHDA)

One consequence of this policy has been to fuel competition in the education market. Apparently, year-long waiting lists now face parents trying to admit children into some of the top performing schools (Gulf News, 2016b). As shown in Figure 4, there has been a 23% shift between 2008/09 and 2014/15 in the number of parents exercising their right to send their children into private schools.

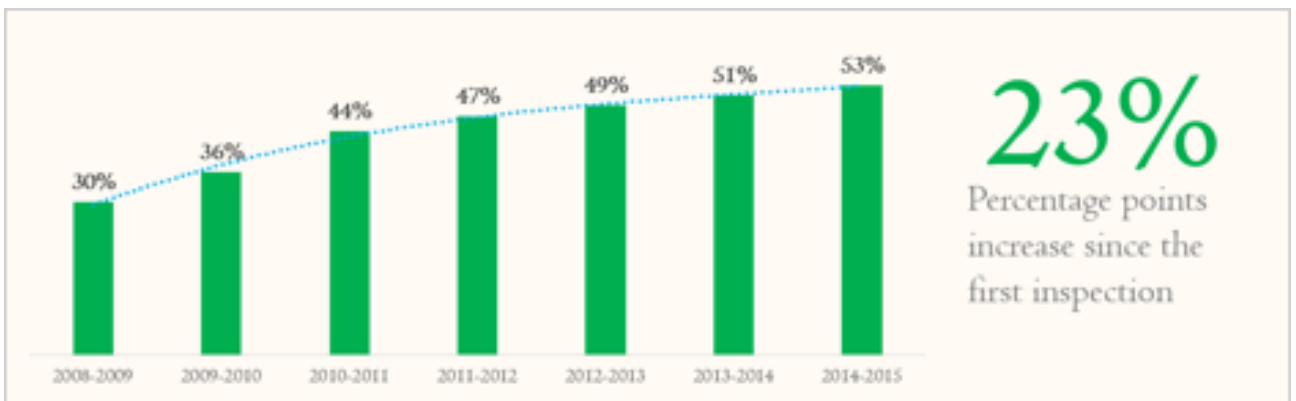


Figure 4: Increase in students in schools rated 'outstanding' or 'good' (Source: KHDA)

2.3 Change in school performance by international standards

The Programme for International Student Assessment (PISA) is a worldwide study by the Organisation for Economic Co-operation and Development (OECD) conducted every three years, which tests the performance of fifteen-year-old students on science, reading and mathematics. Over the past ten years, this assessment standard has evolved to become the world's premier yardstick for evaluation the quality, equity and efficiency of school systems (OECD, 2016). The PISA assessment functions in a way that allows clear identification of high-

performing education structures, and provides ample room for policy makers and educators to formulate efficacious policies that could be tailored according to each countries' local frameworks.

The UAE first participated in the PISA assessments in 2009. By 2012, a total of 11,500 students from 375 schools across the country participated in the examination. In 2015, science literacy was the main topic of the PISA exam. Fifteen year olds in the UAE scored an average of 427 points. This average actually ranked as one of the lowest among PISA participants, and fell considerably short of the OECD's 493-point average. It is worth pointing out that girls performed a lot better than their male counterparts with a statistically significant difference of 26 points. With respect to mathematics, 15 year-olds from the UAE scored 427 points compared to 490 points which made up the OECD countries' average. It is also critical to highlight that the percentage of students who attended private schools in the country, and subsequently qualified to sit for the PISA 2015 examination, was one of the highest among PISA-participating countries. According to the OECD report, the UAE possess one of the longest average-time-per-week spent learning regular lessons (28.8 hours/week; ranking 10/55).

In a country like the UAE, where students attend schools offering more than twenty different types of curricula with dissimilar performance measures, it is difficult to compare the quality of education received by students across schools. An internationally recognised and standardised test such as PISA allows comparison within and between countries despite differences in curricula (OECD, 2016).

Included in the UAE's National Agenda is a goal of making the UAE one of the top 20 performing countries in PISA. While the UAE made considerable progress between the 2009 and 2012 rounds of the international PISA rankings. However, the release of the 2015 PISA results was sobering for the UAE as the growth in performance between 2009 and 2012 was found to have stagnated in reading and fallen slightly in both mathematics and science (see Figure 5). The PISA results thus contrast sharply with the story told by KHDA's annual rankings which is that performance has been steadily improving.

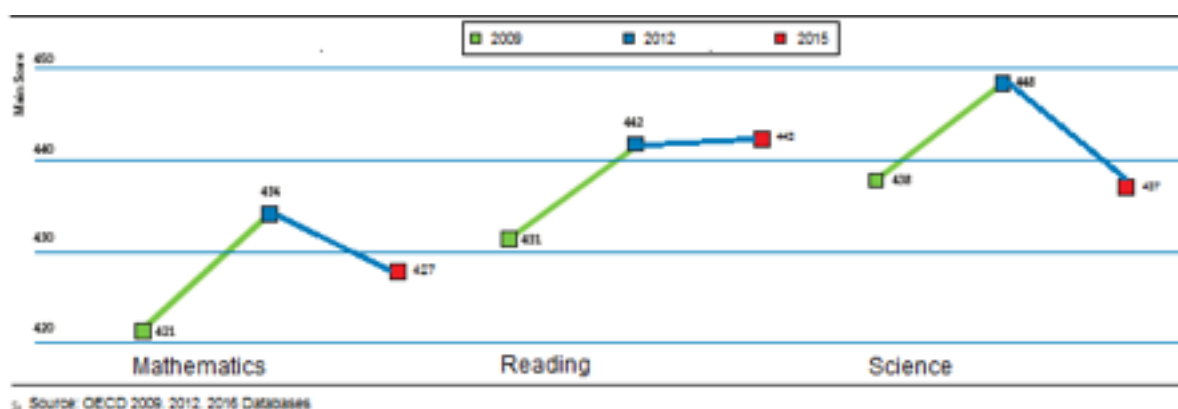
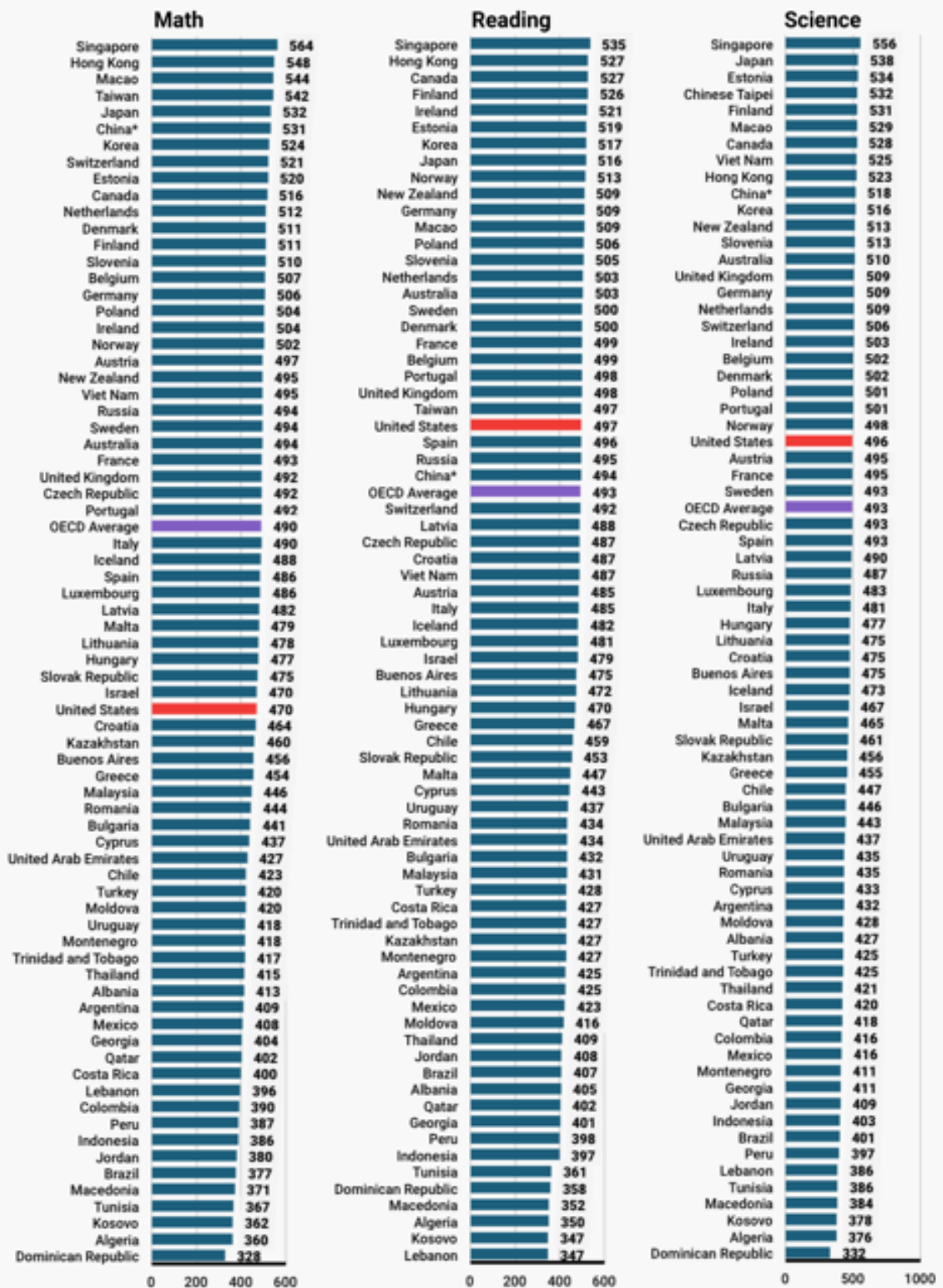


Figure 5: Trends in student skills – PISA 2009, PISA 2012 and PISA 2015 in the UAE (Source: OECD)

2015 PISA AVERAGE SCORES



SOURCE: OECD. *China is represented by the provinces of Beijing, Shanghai, Jiangsu, and Guangdong

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3. The Cost-Benefit Analysis

Cost-benefit analysis (CBA) is a method of quantifying and weighing up costs and benefits in order to assess the merit of a given value proposition. This paper reports on a CBA that was undertaken to investigate whether the current school fee levels of schools whose performance was rated by KHDA in the 2015/16 academic year as 'outstanding', 'very good', and 'good', are justified when viewed against forecasted gains from future earnings. Parents who invest in more expensive schooling do so because they believe it puts their child on a highway to a brighter future. Indeed, there is abundant research to show that education is closely linked to future success in the labour market (Birch & Miller, 2005; Heckman et al., 2010) and other positive life outcomes such as better physical and mental health (Blanchflower & Oswald, 2004; Grossman 2005; Chevalier & Feinstein, 2006).

The use of CBA in assessing educational investment is well documented in the literature (Fiszbein & Psacharopoulos, 1993; Moretti, 2004; Psacharopoulos & Patrinos, 2004). CBA compares expected benefits to the inputs of a particular investment or expenditure decision. Its principles can be applied to assess the merit of decisions that parents make about spending on children's education because from an economic point of view, doing so is expected to yield a series of benefits in adulthood. Likewise, when a country invests in human capital development through education, it does so to reap a harvest for society at large, over and above any benefits that the individual student may accrue.

The direct costs of education include expenses incurred to rent or build school premises, finance teacher compensation packages and purchase teaching equipment. The tuition fees, transport, text books and extracurricular activity costs paid by parents are said to be the private direct costs while indirect costs, refer to what a 'working-age student' would have earned in the labour market if they were not attending school. The latter are not relevant to this investigation because secondary students are not typically in a position to have to exercise this choice. It is worth noting that private direct costs do not include expenditure incurred by the individual that are incidental to acquiring an education, such as spending on food and housing. ¹These social costs include all costs of schooling, irrespective to who is paying; one individual, other individuals or taxpayers via public budgets. ²This means that private costs are always counted as part of social costs.

With respect to benefits, previous studies have shown that parents are looking to invest in the development of skills in their children that will yield a future payoff in outcomes that matter (Hanushek, 2012). Whether based on a Mincerian earnings function or other statistical calculations, it has frequently been shown that a greater investment in education for each marginal or extra year in higher education, the greater the chance of a higher salary level (Blundell et al., 1999). This is because entry and performance at a tertiary level is strongly

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1. If education is provided for free from the standpoint of individuals, as is the case in many developing countries, the only costs in a private cost-benefit calculation are forgone earnings.
 2. Private income is not taxed in the UAE, so this does not apply here.

predicted by secondary school performance (Birch & Miller, 2005). This CBA thus assumes that school performance that earns a higher KHDA ratings increases the probability of higher lifetime earnings of children.

It should be noted, however, that whilst CBA sounds straightforward on paper, it is not without limitations. Methodological challenges include difficulties of estimating social benefits, setting an acceptable discount rate, and attribution of outcomes to specific interventions (Jimenez & Patrinos, 2008). CBA also requires a number of assumptions in assessing value for money in the context of education. These include that:

- all other variables are held to be constant, or to behave in a predetermined manner.
- all graduating students, irrespective to their nationalities, will want to enrol at a university in a western university to earn a degree.
- all graduating students that happen to be expatriates, will eventually return to the Emirate for work contracts during their first seven years after graduation.
- all selected students in the study have passed their PISA exams and have attained the cognitive and non-cognitive skills essential for the dynamic and highly competitive labour market in Dubai.
- cognitive skills attained during the students' academic years at the outstanding, very good, and good institutions of Dubai, will eventually become top predictors of job-related success, such as job performance, job-related learning, training, and advancement. Hence, these graduates considered in the study, will consequently receive the top range averages of earnings expected in top-earning industries.

This CBA was undertaken to shed light on whether the high fees charged by these premium outstanding, very good, and good schools are likely to reap benefits that will more than offset the investment cost paid by parents. Furthermore, a comparison among the top three KHDA ratings (outstanding, very good, and good) was made, to debunk the myth that the higher the school rating, the better the quality of education, and thereby, the greater the future financial rewards. The rationale on which these investigations were made assumed these parents do so in the hope that sending their children to premium, very good, and good schools will ensure that they perform at the high level required to gain entry into reputable western universities, and ultimately find their way into well paid jobs.

The challenge posed by this CBA was therefore to explore the relationship between the costs of the top three ranked schools and expected future earnings. The key outcome variables for the CBA were:

- **Wages:** By improving the skill level of participating children, their human 'capital stock' increases and so will their future productivity level and wage rate. This CBA assumes an average starting salary for graduates beginning with 0-1 years working experience (fresh graduates) up to 7 years working experience, with average income figures based on DSC publications.
- **Employment outcomes:** Higher skill levels have not only an effect on the wages of employed individuals but also positively affect employment probabilities and thereby

increase future earnings. According to the recent data provided by Robert Half (2016), the first seven years of work-experience in the top-earning industries had more or less similar ranges. Hence, a mean figure was calculated for each year and the same discount rate of 3% was used in the calculations.

To represent the benefits of better quality education this CBA used average wage earnings that are reported every four years in the Emirate by gender and age. To estimate age-specific annual wages, this study used a linear transformation of the average wage per age group, taking the average to be reached exactly at the midpoint of the age category. To estimate the base scenario for school-children, average total annual earnings and employment rates were calculated for a cohort that has the potential to be active in the labour market between the ages of sixteen and seventy. Future wage earning growth rates were estimated at 2.43%, based on the projections of the 2015 Annual Economic Report published by the UAE’s Ministry of Economics. As per previous CBA studies on the return to investments in education (Heckman et al., 2010; van Huizen et al., 2016) the present value of these future streams of benefits is determined using a three per cent discount rate. The rationale and logic for the calculations underpinning the results shown in Table 3 for this CBA are presented in Appendix A.

Table 3: Cost benefit analysis: cost and benefits of education in a school rated by KHDA as “outstanding”.

Discounted Costs for Parents during the last seven years of schooling in Premium International schools in Dubai , 2015 Base Year.					Discounted Benefits of Students, during their first seven years upon graduation: Average expected salary (per month * 12 months), in Dubai. 2015 Base Year							
Number of Years	School year	Average Direct Costs: School Tuition fees, transportation, activities. (AED Dirhams)	Discount Factor	Discounted Cost in Dirhams	Years of experience	Average Expected Income per year. (AED Dirhams)	Discount factor	Discounted Benefits in Dirhams	Net Present Value (NPV), in AED Dirhams	Profitability Index=PV/Costs	Benefit-Cost Ratio	ROI=[(Discounted Benefits - Discounted Costs)/ Discounted Costs]*100 (expressed as a percentage)
1	7th	78,000	1.03	75,728	1	108,000	1.03	104,854	26,854	1.34		
2	8th	78,000	1.06	73,585	2	120,000	1.06	113,208	35,208	1.45		
3	9th	80,000	1.09	73,394	3	120,000	1.09	110,092	30,092	1.38		
4	10th	83,000	1.13	73,451	4	144,000	1.13	127,434	44,434	1.54		
5	11th	85,000	1.16	73,276	5	180,000	1.16	155,172	70,172	1.83		
6	12th	95,000	1.19	79,832	6	192,000	1.19	161,345	66,345	1.70		
7	13th	98,000	1.23	79,675	7	192,000	1.23	156,098	58,098	1.59		
				528,941				928,202			1.75	75.48

Table 4: Cost benefit analysis: cost and benefits of education in a school rated by KHDA as “very good”.

Discounted Costs for Parents during the last seven years of schooling in "Very Good" International schools in Dubai , 2015 Base Year.					Discounted Benefits of Students, during their first seven years upon graduation: Average expected salary (per month * 12 months), in Dubai. 2015 Base Year								
Number of Years	School year	Average Direct Costs: School Tuition fees, transportation, activities. (AED Dirhams)	Discount Factor	Discounted Cost in Dirhams	Years of experience	Average Expected Income per year. (AED Dirhams)	Discount factor	Discounted Benefits inDirhams	Net Present Value (NPV), in AED Dirhams	Profitability Index=PV/Costs	Benefit-Cost Ratio	ROI=[(Discounted Benefits - Discounted Costs)/ Discounted Costs]*100 (expressed as a percentage)	
1	7th	72,400	1.03	70,291	1	108,000	1.03	104,854	32,454	1.45			
2	8th	72,400	1.06	68,244	2	120,000	1.06	113,208	40,808	1.56			
3	9th	72,400	1.09	66,256	3	120,000	1.09	110,092	37,692	1.52			
4	10th	74,500	1.13	66,192	4	144,000	1.13	127,434	52,934	1.71			
5	11th	74,500	1.16	64,264	5	180,000	1.16	155,172	80,672	2.08			
6	12th	81,000	1.19	67,836	6	192,000	1.19	161,345	80,345	1.99			
7	13th	81,000	1.23	65,860	7	192,000	1.23	156,098	75,098	1.93			
				468,945					928,202			1.98	97.93

Table 5: Cost benefit analysis: cost and benefits of education in a school rated by KHDA as “good”.

Discounted Costs for Parents during the last seven years of schooling in "Good" International schools in Dubai , 2015 Base Year.					Discounted Benefits of Students, during their first seven years upon graduation: Average expected salary (per month * 12 months), in Dubai. 2015 Base Year								
Number of Years	School year	Average Direct Costs: School Tuition fees, transportation, activities. (AED Dirhams)	Discount Factor	Discounted Cost in Dirhams	Years of experience	Average Expected Income per year. (AED Dirhams)	Discount factor	Discounted Benefits inDirhams	Net Present Value (NPV), in AED Dirhams	Profitability Index=PV/Costs	Benefit-Cost Ratio	ROI=[(Discounted Benefits - Discounted Costs)/ Discounted Costs]*100 (expressed as a percentage)	
1	7th	56,700	1.03	55,049	1	108,000	1.03	104,854	48,154	1.85			
2	8th	56,700	1.06	53,445	2	120,000	1.06	113,208	56,508	2.00			
3	9th	56,700	1.09	51,889	3	120,000	1.09	110,092	53,392	1.94			
4	10th	64,400	1.13	57,219	4	144,000	1.13	127,434	63,034	1.98			
5	11th	64,400	1.16	55,552	5	180,000	1.16	155,172	90,772	2.41			
6	12th	74,400	1.19	62,309	6	192,000	1.19	161,345	86,945	2.17			
7	13th	74,400	1.23	60,494	7	192,000	1.23	156,098	81,698	2.10			
				395,956					928,202			2.34	134.42

The Benefit-Cost Ratio for a CBA is calculated by dividing the total discounted benefits by the total discounted costs. Ratios greater than one have greater benefits than costs and thus a positive net benefit. The higher the ratio, the greater the benefits relative to the costs. The ratio of 1.75 reported in the Table 3 above is favourable and means that for every UAE Dirham spent by parents on education, a return of 1.75 AED is expected for their children in the future. As such we may conclude that, while educating children in premium schools in Dubai is expensive, this investment is still more than offset by their forecasted future earnings.

The interesting findings of this cost-benefit-analysis rose from the assumptions on which the financial projections were initially made. First of all, the assumption that ‘all other variables or factors were held constant’ is crucial for understanding the phenomenon of rising ROIs and benefit-cost ratios the less parents pay for “very good” and “good”- ranking schools. Considered also as a limitation of this study - that would require future in-depth exploration - the assumptions placed included:

- All graduates of the top three-ranking schools (outstanding, very good, and good) achieve the same evaluation results from international assessments that reflect their fundamental academic attainment, in addition to other cognitive and non-cognitive skills. This assumption transcends into the following one; which states that;
- Expected financial benefits are the same for all graduates, irrespective of the school they have graduated from (as long as it is one of the top three ranks).
- Subsequently – and according to the KHDA’s consensual ratification of schools’ Educational Cost Index (ECI) that grants schools the permission to raise tuition fees according to their earned ratings – it is by far not surprising to find ‘very-good’ and ‘good’ schools to generate impressive financial results when it comes to ROI on education.

Another rather interesting finding worth emphasizing was that ‘outstanding’ schools in Dubai share a homogenous scale of tuition fees that more or less falls in the same reasonable range (KHDA open data, 2016). However, ‘very good’ and ‘good’ schools (i.e the lower you go down the school-ratings) possess a significant heterogeneity and diversity of fee-scales. This observation is particularly significant among ‘good’ schools, where some institutions charge what is equivalent – (if not one and a half times as much) – to ‘outstanding’ ones.

These findings tend to raise the question of what exactly do these school fees reflect or measure? What do these fees translate into? Do they truly reflect quality of education? And, to what extent should one question the credibility of the DSIB’s reports that bestow upon schools their blessings to hike their prices.

4. Stakeholders’ perspectives

Parents, policy makers, KHDA officials, and DSIB auditors place considerable stock in the ratings produced upon the latter’s’ annual inspections, which they perceive to emphasise academic performance. The ratings published by these regulatory institutions are seen by all concerned stakeholders as a reflection of the quality of education on offer. With respect to some parents, they tend to also recognize the importance of developing specific cognitive skills such as problem solving, decision making and critical thinking. It is also common

practice among parents to assume that top schools hire higher-calibre teachers who provide their students with a superior educational experience that develops these capabilities. These parents believe that cognitive skills increase their child's likelihood of doing well in school and thus their probability of landing a better-paying job in the future. This view is in line with trends observed in developed societies where parents tend to seek a wide range of learning objectives and aspects of social, emotional, and physical development that are at least as important as achievement in conventional academic tests in determining future life opportunities (Gibbons & Silva, 2011).

While future earning potential is important, for many parents the importance of character-building environments, better wellbeing and happiness of children rank highly when they agree to pay a high price to send their child to a school rated as 'outstanding'. It is also interesting to note that a substantial population of expatriates who are financially sponsored by their employers tend to be more lenient in their views about the scholastic performance of their children. The fact that they do not share the same financial burden as those who pay fees themselves perhaps allows them to be more relaxed about the premium being paid to attend high performing schools.

5. Conclusions and Recommendations

Some general conclusions emerge from this study. On one hand, it is only logical to conclude that parents tend to place considerable stock on KHDA's annual ratings in their evaluations about the quality of schools. The rationale being that, better academic performance reflects higher cognitive skills and likelihood of more promising career paths with higher associated future wages and lifetime earnings. With an eye to the future, the prevailing focus is thus on the financial returns expected for the child, despite the growing fiscal burden that this entails.

5.1 Policy Issues

This analysis reveals a number of important policy issues. Firstly, there is no previously-published evidence to show that school performance in Dubai is increasing as profoundly as fees are being hiked up by premium, very good, and good schools. This is significantly reflected in the latest 2015 PISA rankings that suggest the opposite may actually be closer to the truth. That is to say, PISA testing shows that student performance in schools has actually stagnated in reading and fallen marginally in both mathematics and science. Secondly, the recent PISA results bring into question the veracity of performance-related ranking criteria that have led parents into believing that students are doing better, when the PISA results say otherwise. In short, it is arguable that inspection-rankings might have unintentionally manifested a false sense of confidence in the quality of schools that they are paying a high price for their children to attend.

Why performance-related rankings are at odds with the PISA findings is clearly worthy of further investigation. However, it raises the possibility that the current school fee setting policy may have incentivised schools to ‘game’ or manipulate the inspection system in ways that ensure that their performance appears to improve (de Wolf & Janssens, 2007), so that they have the right to charge higher fees – unlike the PISA assessments which offer no such incentives, and which are considerably harder to manipulate.

5.2 Recommendations

So where do policy makers go from here? The findings of this paper suggest that the current school fee setting policy framework needs to disengage future fee increases from measures of school performance. Firstly, because this policy is unsustainable. It is clearly driving inflation in school fees at a rate that is becoming untenable for increasing numbers of local parents. Secondly, because the trend in PISA results indicates that the sharp rise in fees in recent years is not being matched by equivalent gains in performance when measured robustly. Lastly, because the policy is based on an unproven assumption that schools and school teachers will only perform better if government creates strong financial incentives to do so. The rationale for this assumption ignores the reality that school teachers choose their vocation out of a desire “to work with young people to make a difference in their lives; to maintain a meaningful engagement with the subject area they were drawn to; and to attain personal fulfilment and meaning” (Manuel & Hughes, 2006). While teachers require and merit fair and reasonable compensation, teaching is hardly the primary career choice for those aspiring to accumulate great wealth, so incentives should not be geared to this end.

Based on available evidence and the local context, the most direct policy solution out of the present conundrum would be to permit all schools to increase their fees by the average annual rate of inflation to cover corresponding annual cost of living increases and without unsustainable fee hikes. Apparently, the financial projections presented in this study showed that the ROI on education was actually higher by almost 80% for ‘good’ schools – tribute to the relatively affordable tuition expenses – compared to their outstanding counterparts. For schools with fees that are currently more than half of one standard deviation above the mean, it is arguable that they should be able to demonstrate a level of performance in reading, science and mathematics that is equal to a country with a top 20 PISA rating (i.e. the national goal for the UAE in its Vision 2021), failing which they should be obliged to trim their fees by a fixed percentage each year (perhaps by an amount inverse to that shown in Table 1).

Policymakers concerned about the UAE’s Vision 2021 goal of achieving a top 20 ranking on PISA should take heed to Singapore or the northern European countries that regularly top its rankings. None of these countries offer schools the right to hike their fees in exchange for better performance. Rather these countries invest in systems and strategies for enhancing their stock of human capital. Their schools do well because they create positive learning

environments and grant teacher's autonomy in how they fulfil their vocation, without their performance constantly scrutinised and regulated as though they are unable or incapable of making good teaching decisions (Fuchs & Woessmann, 2008). A recent analysis of Finland notes "It has been amazing how the Finnish education system, with only average monetary investments, a very small amount of homework and lesson hours and extremely light education evaluation (no inspection system) can reach such results high quality and equality in international comparisons" (Reinikainen, 2012:1).

The trend in performance in recent years indicates that the UAE will fall far short of its Vision 2021 goals for education if its policymakers continue with the present policy approach. Looking at models in countries that perform well on PISA suggest instead that KHDA needs to reduce its currently high emphasis on monitoring and regulating what schools do and whether they achieve targets, and increase its effort and investment in building the teaching skills and capacity of its local workforce - and then entrusting them with the autonomy to do their jobs as professional people. No doubt, there will always be a place for regulation and for setting minimum standards, but not to the extent that this becomes a hindrance to school administrators and teachers.

For an organisation with competing responsibilities for regulation and school development, finding the right balance is a challenge it must succeed in resolving if it is to play its part in achieving the Vision 2021 goals for education.

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Appendix A: CBA Methodology

Private benefits enjoyed by an individual for investing in an extra year of education are gains in earnings for the rest of a working life. Private costs incurred will logically include any fees or direct costs that the individual pays, plus forgone earnings or opportunity cost that could have been otherwise earned if the person had chosen not to spend an extra year in education. Because these values occur over time, they must be discounted to the present to be comparable. For the CBA presented in this paper, the last seven years of schooling at premium “outstanding-ranking” schools were chosen analysis. Direct education costs included tuition fees, transportation, and school activities and were discounted at a 3% discount rate. Likewise, the average starting salary for a graduate with less than a years working experience (i.e. fresh graduate) up to 7 years working was used as the quantum to represent the benefit of investing in premium education with the same discount rate of 3%.

The difference between the discounted costs and benefits, termed the net present value (NPV), should be a positive if the investment yields a benefit rather than loss. Another criterion for evaluating the merit of an investment involves calculating the internal rate of return (IRR) and comparing it to returns from alternative investments. The rate of return to education, or the IRR, is that rate of discount that equates the net present value of life-time earnings of the individual - taken as the benefits of education - to the net present value of costs of education (Tilak, 2007).

If (n) represents a unit of time, the private benefit(s), discounted to the present value or worth, of an individual may be calculated using the following formula:

$$\sum \frac{B_n}{(1+r)^n}$$

Where B = benefits earned by the individual.

n = time.

r = discount rate.

On the other hand, discounted costs, whether direct or forgone, will be computed accordingly:

$$\sum \frac{C_n}{(1+r)^n}$$

Social benefit is the numerical value of the gains to others in society, such as the positive effects of having more educated and cultured people in society and greater social cohesion. Social cost is the numerical value of the cost to others in society, such as fiscal costs if education is subsidised, including the deadweight loss of mobilising public resources. Social return may be calculated by replacing B and C by SB (social benefits) and SC (social cost) in the equations above.

The Benefit-Cost Ratio is calculated by dividing the total discounted benefits by the total discounted costs. Projects or financial considerations with a benefit-cost ratio greater than 1 have greater benefits than costs; hence they have positive net benefits. The higher the ratio, the greater the benefits relative to the costs.

The Return On Investment (ROI) is calculated by accounting for the net present value in this case. The discounted costs are subtracted from the discounted benefits and divided by the discounted costs, and multiplied by 100. The result is expressed in percentage.

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