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Improving Access and Quality in the Indian Education System

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IMPROVING ACCESS AND QUALITY IN THE INDIAN EDUCATION SYSTEM

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By Sam Hill and Thomas Chalaux

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ABSTRACT/RESUMÉ

Improving Access and Quality in the Indian Education System

Education has been given high priority by India's central and state governments and continues to grow fast. School access has been expanded by investment in school infrastructure and recruitment of teachers. In higher education too, the number of providers continues to rise rapidly. A new law enshrining the rights of all children to free and compulsory education will further lift enrolment, bringing closer the government's goal of universal elementary education, which comprises eight years of schooling. Nevertheless, high drop-out rates and low attendance continues to be a challenge at lower levels and enrolment at higher levels remains modest by international standards. Private sector involvement is on the rise. While it helps expand education infrastructure, particularly in higher education, access has not always been assured and the availability of student loans for higher education needs to improve. Poor learning outcomes amongst school students and mediocre higher education provision call for more effective government regulation and funding arrangements. Expanding resources will help but they need to be deployed more effectively, while incentives and professional development systems for teachers need to be strengthened. In higher education the government has proposed reforms which have the potential to bring about much-needed improvements in regulatory effectiveness. Efforts should focus on reducing micro-regulation and improving institutional autonomy, in order to stimulate innovation and diversity. Increasing the number of institutions subjected to quality assessments will be important for lifting standards across the higher education system, while reform of recruitment and promotion mechanisms could help attract and retain talent in academia.

This Working Paper relates to the 2011 *OECD Economic Survey of India* (www.oecd.org/eco/surveys/india)

JEL Classification: H52, H75, I2, I15, I20, I21, I22, I23, I24, I25, I28, J24, O10, O15, O53.

Keywords: education policy, education spending, human capital, India, literacy, primary education, schools, secondary education, tertiary education, universities, vocational education.

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Améliorer l'accès et la qualité du système éducatif indien

L'éducation est l'une des grandes priorités des autorités indiennes, à l'échelon central et dans les États, et elle continue de se développer rapidement. L'accès à l'école a été élargi grâce à des investissements dans les infrastructures et au recrutement d'enseignants. Dans l'enseignement supérieur également, le nombre de prestataires continue d'augmenter à un rythme soutenu. Une nouvelle loi établissant le droit de tous les enfants à l'instruction gratuite et obligatoire va encore accroître les effectifs scolarisés dans le primaire et le premier cycle du secondaire, si bien que l'objectif de scolarisation élémentaire universelle que se sont fixé les autorités pourrait bientôt être atteint. Néanmoins, la fréquence des abandons en cours d'études et les faibles taux de fréquentation scolaire continuent de poser un problème aux niveaux inférieurs, tandis que les taux d'inscription aux niveaux supérieurs restent modestes par rapport aux normes internationales. Le secteur privé joue un rôle croissant. S'il est utile de développer les infrastructures, en particulier dans l'enseignement supérieur, l'accès aux études n'est pas toujours garanti et l'offre de prêts étudiants doit être étoffée. Les résultats insuffisants des écoliers et la qualité médiocre de l'enseignement supérieur appellent une amélioration de l'action publique et des mécanismes de financement. Augmenter les ressources est une bonne chose, mais il faudra les déployer de manière plus efficace et renforcer les systèmes d'incitations et de perfectionnement professionnel destinés aux enseignants. Dans l'enseignement supérieur, le gouvernement a proposé des réformes à même d'apporter des améliorations indispensables pour l'efficacité de la réglementation. Les efforts devraient viser avant tout à limiter la micro réglementation et à accroître l'autonomie des établissements afin de stimuler l'innovation et la diversité. Augmenter le nombre d'institutions soumises à des contrôles de qualité permettra de relever les normes dans l'ensemble du système d'enseignement supérieur, tandis qu'une réforme des modalités de recrutement et de promotion des enseignants devrait concourir à attirer et à retenir les talents dans les universités.

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Classification JEL: H52, H75, I2, I15, I20, I21, I22, I23, I24, I25, I28, J24, O10, O15, O53.

Mots-clés: politique d'éducation, dépenses d'éducation, capital humain, Inde, alphabétisation, études primaires, écoles, études secondaires, études tertiaires, universités, formation professionnelle.

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TABLE OF CONTENTS

ABSTRACT/RESUMÉ 2
IMPROVING ACCESS AND QUALITY IN THE INDIAN EDUCATION SYSTEM 5
Education is expanding rapidly but quality is often low 5
Resources and participation are rising strongly 5
School learning and higher education quality remain low 13
The rise of the private sector creates challenges and opportunities for improving access and quality 15
Private enrolments are increasing at all levels 15
Ensuring widespread benefits requires appropriate government intervention 18
Improving school performance requires reforms as well as resources 21
Teacher accountability and incentives need to be improved 21
Increasing resources can help improve instructional quality 23
Teacher development pathways need to be made more accessible and more effective 24
Lifting vocational and tertiary education quality requires wide-ranging reforms 25
More effective regulation is needed 25
Stronger quality assurance and better incentives are needed to boost performance 29
Academic workforce issues need attention 31
Conclusion 33
BIBLIOGRAPHY 35

Tables

1. Government spending and total number of public and private schools and teachers 7
2. State-level enrolment rates, literacy rates and incomes 11

Figures

1. Overview of Indian education system 9
2. Enrolment rates: international comparison 10
3. Factors influencing the probability of attending elementary school 12
4. International secondary student test scores 14
5. Predicted and actual world university rankings 15
6. Public and private enrolment shares 16
7. Public and private school enrolment shares by household expenditure deciles 17
8. Factors influencing the probability of tertiary attendance conditional on the completion of secondary school 21
9. Indian students studying abroad and education service imports 28
10. Institutions assessed and accredited by the NAAC 30
11. International comparison of academic salaries 32

Boxes

Box 1. The Right to Free Education Act 6
Box 2. India's diverse education landscape 8
Box 3. Internationally mobile university campuses and programmes 29

IMPROVING ACCESS AND QUALITY IN THE INDIAN EDUCATION SYSTEM

Sam Hill and Thomas Chalaux[1]

The education sector in India is experiencing rapid expansion and change. Governments have implemented new initiatives and increased spending to encourage greater enrolment and attendance at the school level. In higher education they are seeking to implement wide-ranging changes to the regulatory framework. At the same time the rising affluence and aspirations of households is spurring strong demand for education at all levels and the traditional dominance of the public sector as a provider of education is receding. The dual challenge now is to build on the considerable progress made in lifting participation and, equally importantly, improve the quality of education outcomes. To meet these objectives reform momentum needs to be maintained and broadened. This is especially so given the pace of development in the Indian economy, the changing needs of households and businesses, and the considerable lags between changes in education policies and outcomes.

This paper begins with a review of education achievements since the 1990s, including government commitments to expand education and the progress made in lifting participation. The current state of education quality is also examined. The paper then turns to the rising importance of private education and the opportunities and challenges this presents for improving access and quality. Next, the paper discusses the areas where reforms are needed to improve the quality of schooling and higher education. The paper concludes with a summary of policy recommendations.

Education is expanding rapidly but quality is often low

Resources and participation are rising strongly

Central and state governments continue to accord a high priority to expanding the supply of education and increasing participation, especially at the primary level. The universalisation of elementary education, defined in India as grades one to eight, was given a renewed impetus in April 2010 when the Right of Children to Free and Compulsory Education (RTE) Act came into force (Box 1). This landmark piece of legislation builds on the 2001 *Sarva Shiksha Abhiyan* central government programme, which aimed for universal enrolment and retention at the elementary level by 2010. The cornerstone of the Right to Free Education Act is the provision of free and compulsory education to all children between the ages of six and 14 and a commitment to ensure access to a neighbourhood elementary school throughout the country by 2013. The government has also set ambitious goals to raise participation at the secondary and tertiary levels. Under the *Rashtriya Madhymik Shiksha Abhiyan* initiative it is planning a rapid expansion in the number of secondary schools with the aim of achieving universal lower secondary enrolments (up to and

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including grade ten) by 2017 and universal retention by 2020 (MHRD, 2010). Similarly, the government is aiming to lift the tertiary enrolment rate to 30% by 2020.

Box 1. The Right to Free Education Act

The Right of Children to Free and Compulsory Education (RTE) Act (2009), which came into effect on 1 April 2010, enshrines in law for the first time the rights of all Indian children aged between six and 14 years to free and compulsory elementary education. Under the Act the state is liable for all direct and indirect costs of education, including tuition and the provision of uniforms and textbooks, as well as ensuring access to a place at a neighbourhood school, or alternatively free transport to the nearest school. The government is also responsible for students' ongoing attendance and completion of their studies. Enforcement of the Act is to be monitored by central and state government child protection commissions. However, to encourage parent and broader community participation in school monitoring and decision-making, schools are required to form a School Management Committee (SMC) with at least three quarters parents and at least half women. SMC's are empowered to monitor the performance of schools and the use of government grants, to prepare school development plans and to fulfil other functions prescribed by state governments.

The Act stipulates a number of minimum standards concerning teachers and school infrastructure. All private schools are required to obtain a certificate of recognition from a government authority which requires that all standards notified in the Act be met within three years. Schools failing to do so will be subject to punitive actions. School buildings must be all-weather, have a kitchen for the preparation of midday meals, separate toilets for girls and boys, have access to safe drinking water and a library and playground. The student-teacher ratio is capped at 30 to 1 for grades one to five and 35 to 1 for grades six to eight. In addition, for each school offering upper primary education, at least one specialist teacher in each of the fields of social studies, languages and science and mathematics must be employed. All teachers are required to hold a minimum qualification, determined by state government rules, within a five-year phase-in period and are to be remunerated according to state government specified norms. All teachers are required to work a minimum of 45 hours each week and 200 days per year and are prohibited from engaging in private tutoring. Teachers are also required to hold regular parent-teacher meetings.

To increase choice and to promote an inclusive education system and classroom diversity, the Act requires all private schools to allocate at least 25% of places in first grade to government-funded students from officially-defined minority groups and economically disadvantaged backgrounds. Schools will be required to ensure that education is provided freely to those pupils until the completion of grade eight and will be reimbursed directly according to whichever is lower of the cost borne by the private school or the equivalent cost in a public school.

Source: Right of Children to Free and Compulsory Education Act.

Since the early 1990s, public spending on education has expanded strongly, though not faster than GDP (Table 1). However, given the high proportion of expenditure devoted to teacher salaries, infrequent adjustments associated with Pay Commission outcomes have resulted in uneven yearly growth. On average, combined central and state government expenditure has risen at an annual rate of around 6% in real terms since the early 1990s, in line with GDP. In 2008-09 public spending amounted to 3.8% of GDP, similar to some other large emerging countries, notably China, but much below most OECD countries.

Although education is the shared responsibility of the central and state governments, traditionally the states have had primary responsibility for funding (Box 2). However, there has been a gradual shift towards greater central government funding which now accounts for around a quarter of total spending, double the share in the early 1990s. This change reflects a greater ability of the central government to find new sources of revenue to fund education spending, including the introduction of a 2% levy in 2004 on all central government taxes which was raised to 3% in 2007. As central government spending is heavily tilted towards plan expenditures, much of the growth in spending has been directed at strategic programmes, including expanding school access, some of which involve cost sharing arrangements with the states. Under the *Rashtriya Madhymik Shiksha Abhiyan* initiative, for example, the central government provides 75% of funding, rising to 90% in poorer north-eastern states. The number of private schools and higher

education institutions has risen strongly and National Sample Survey (NSS) data indicate that household spending on tuition fees alone amounted to around 0.9% of GDP in 2007-08.

Table 1. Government spending and total number of public and private schools and teachers

	Public education spending						Number of teachers (000s)	Number of schools (000s)
	% total government spending		Total % GDP	Sector (%)				
	States	Centre		Elementary	Secondary	Higher and other		
1992-93	18.9	2.3	3.7	45	34	21	4 131	814
1993-94	18.4	2.6	3.6	46	33	21	4 192	822
1994-95	18.4	2.4	3.6	46	33	21	4 325	851
1995-96	19.1	3.5	3.6	48	32	20	4 465	867
1996-97	18.5	3.1	3.5	49	32	19	4 569	887
1997-98	18.8	3.0	3.5	50	32	18	4 704	912
1998-99	19.4	3.4	3.9	49	33	18	4 837	934
1999-00	20.3	3.6	4.2	46	34	20	4 998	972
2000-01	20.7	3.1	4.3	48	32	20	4 983	971
2001-02	17.4	3.9	3.8	50	32	18	5 173	1 017
2002-03	16.4	3.9	3.8	49	32	19	5 527	1 034
2003-04	16.4	3.6	3.5	50	32	18	5 713	1 120
2004-05	16.5	3.6	3.4	51	30	18	5 833	1 194
2005-06	17.0	4.5	3.4	53	29	18	6 008	1 221
2006-07	16.4	5.8	3.6	54	29	17	6 125	1 249
2007-08	16.2	5.4	3.7	55	28	17	6 241	1 278
2008-09	16.2	6.1	3.8	52	29	19	-	-

Note: Sector allocations of public spending comprise spending by education departments only. School and teacher numbers include the public sector as well as the officially recognised private sector.

Source: CEIC, De and Endow (2008), MHRD (2010), Planning Commission (2010) and Selected Educational Statistics.

The expansion in funding has helped underpin significant growth in the supply of education services. In the decade to 2007-08 the number of public and officially recognised private schools expanded by around 40%, to approach 1.3 million, while the number of teachers rose by around 1.5 million, to exceed 6 million (Table 1). Thanks to this rapid expansion the government has largely met its objective of ensuring neighbourhood access to elementary schools, even in rural areas where the government estimates that 99% of the population lives within 1 kilometre of a school (MHRD, 2010). The higher education sector too has witnessed rapid growth. Although expanding more slowly than other parts of the education system during the early 2000s, the vocational education and training (VET) system, has grown rapidly in recent years. The number of industrial training institutions and centres, which form the backbone of the VET system, has more than doubled in the past decade. The number of universities and colleges has also risen strongly, more than doubling since the mid-1990s. Under the 11th Plan (2007-12), the government had intended to establish 16 new central universities and expand the number of specialised tertiary institutions. It has already met its target for new central universities and has established eight new elite Indian Institutes of Technology (IIT) and five Indian Institutes of Management (IIM). The government is also making use of information technology and communication to expand access to higher education. The system for distance learning in the tertiary sector is already large and growing. Through its National Knowledge Network initiative the government intends to connect all libraries, universities and other research institutions to improve resource sharing.

Box 2. India's diverse education landscape

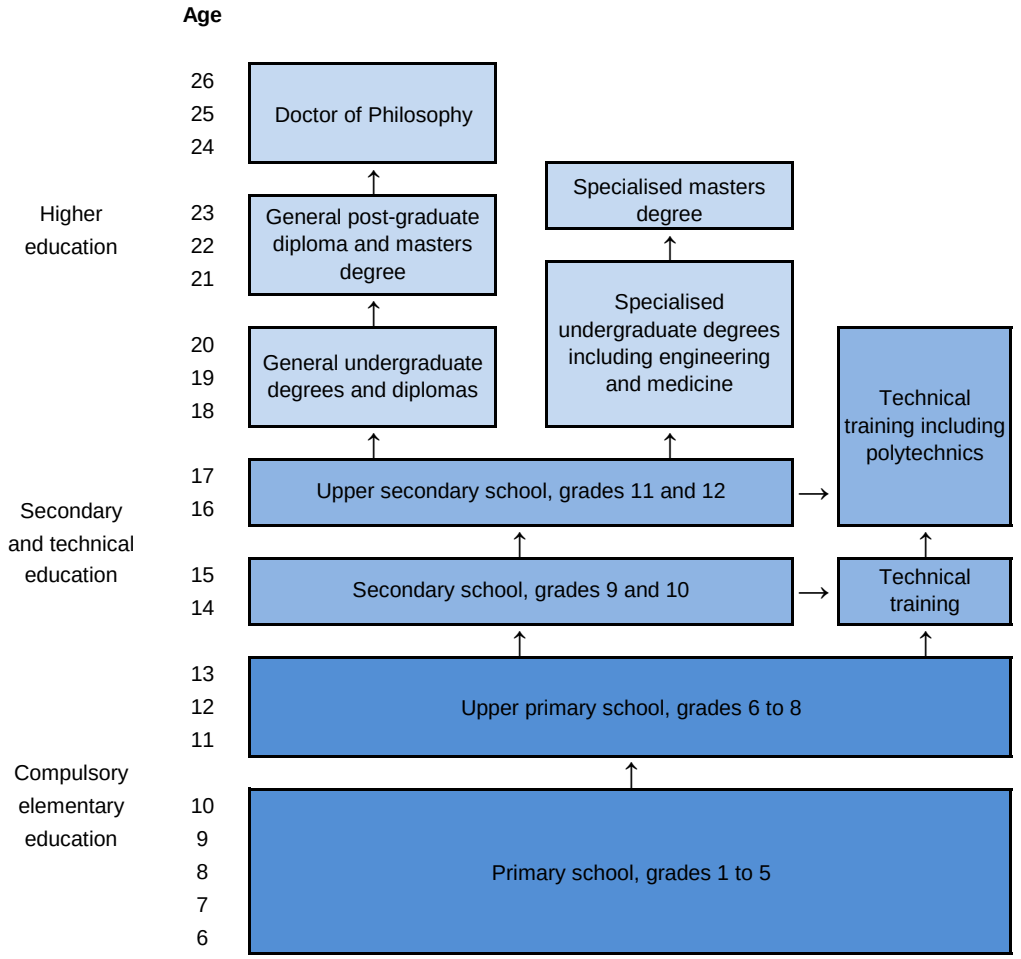
India's federal system, sustained rapid economic development and private sector dynamism, have led to the emergence of a diverse education sector. Since 1976 education has been listed as a concurrent item in the Indian constitution making funding and regulation the shared responsibility of the central and state governments, although the latter still account for the largest spending share. State governments generally have authority over the schools sector with responsibility for curricula and exams as well as teacher recruitment. Both the central and state governments have authority over the vocational education and training (VET) and tertiary sectors. The school system comprises primary and upper primary, which together constitute compulsory elementary education, as well as secondary and upper secondary which terminates in grade 12 (Figure 1). The higher education system offers undergraduate bachelors degrees in general and specialised programmes of varying lengths, as well as postgraduate qualifications including masters and doctor of philosophy degrees. In addition a technical training stream commences following the completion of elementary education

Reflecting the functional division between tiers of government, as well as the size and diversity of India, a range of funding and management models apply in the education sector. There are four principal types of schools. *Public schools* are publicly funded and managed, typically by state or local governments, with a relatively small number by the central government. *Aided schools* rely on a combination of public and private funds and are managed privately. Often capital expenditures are met with private funds and recurrent expenditures, including teacher salaries, by state or local governments. *Unaided private schools* are privately managed and generally self-financed but may receive one-off government grants to finance specific capital expenditures. They fall into two categories: recognised and unrecognised. *Recognised private schools* have been approved by relevant education authorities and are affiliated with the central or state boards of education, thereby entitling students to sit board examinations. In contrast, *unrecognised private schools* operate in the informal sector, cannot offer board examinations and are excluded from most official statistical sources. In order to benefit from government sponsored schemes that operate exclusively in public schools and to sit school board examinations some students reportedly enrol in both private and public schools.

VET is provided through a diverse network of institutions. The initial point of entry is at the secondary school level. In the post-secondary segment around 2 076 state government *Industrial Training Institutes* (ITI) and 5 529 private *Industrial Training Centres* (ITC) form the backbone of the VET system, offering specialised certificate level courses and a pathway to professional apprenticeships. As in the school system, some institutions are privately managed but publicly funded. More advanced vocational training leading to diplomas in technical disciplines is provided by *Polytechnics*. Standards for most technical training are regulated by the National Council for Vocational Training as well as equivalent state-level authorities. Training in certain disciplines is provided by a separate network of specialised institutions, many of which are directly funded and regulated by government ministries.

Public universities are funded and managed either by the central or state governments. *Private universities* are normally self-financed but often receive support in the form of capital or land grants from governments in the start-up phase. A further distinction concerns *deemed universities* which are accorded university status by the University Grants Commission (UGC), a central statutory authority, rather than through an Act of the Parliament or State Legislature. The bulk of undergraduate teaching is undertaken in *colleges*, most of which are affiliated to a university through which students sit exams and earn degrees. *Public colleges* are funded and managed either by the central or, more commonly, state governments while *aided colleges* are funded publicly and privately managed. *Private unaided colleges* are entirely self-financed, mainly through tuition fees. There are around 534 universities, most of which are public, and 25 951 colleges. In addition to universities and colleges there are a small number of specialised institutions including the *Indian Institutes of Technology* (IIT) and *Indian Institutes of Management* (IIM). These were established by the central government and are more independent financially with stronger revenue-raising capacity through higher tuition fees and other means.

Figure 1. Overview of the Indian education system



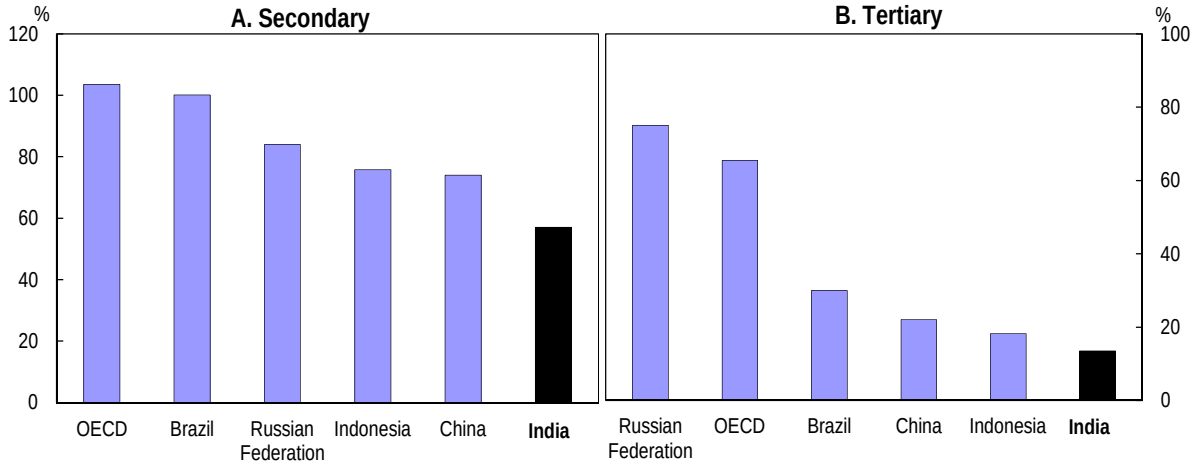
Note: Grade and age profiles vary across states and duration of higher education courses varies by discipline.

Source: Ministry of Human Resource Development.

Source: Agarwal (2009), Ministry of Labour and Employment (2010), Planning Commission (2010) and Tooley and Dixon (2007).

The strong supply-side expansion, together with rising household incomes and falling poverty, has ensured that good progress has continued to be made in lifting enrolment at all levels. The government's goal of universal enrolment at the elementary level, an objective first set in the 1960s, is now within striking distance. Gross enrolment rate (GER) data from the Ministry of Human Resource Development (MHRD), sourced from schools, show strong improvements at the elementary level through the 2000s. Primary enrolments rose from 95.7% in 2000 to over 114% by 2007-08 while upper primary rose from 58.6% to 77.5%. The very high GER at these lower levels are somewhat distorted by the large number of out-of-age enrolments. According NSS data, net enrolment rates, which reflect the proportion of children of an official age group enrolled at a given level (rather than all enrolments as captured by the GER), indicate that enrolment rates at lower levels are significantly lower. The GER at the secondary and upper secondary levels have also risen, reaching 58.2% and 33.5% respectively in 2007-08, while the tertiary GER reached 13.6% by 2007-08 (MHRD, 2010). Nevertheless, by international standards enrolment at the secondary and tertiary level remains low, particularly the latter (Figure 2).

Figure 2. Enrolment rates: international comparison



Source: World Bank, World Development Indicators.

Progress has also been made in reducing national gender disparities, which have historically been high, particularly at the lower rungs of education. MHRD data show that in 2007-08 the upper primary GER for boys was 7 percentage points higher than for girls, down from a difference of over 16 percentage points a decade earlier. A similar differential exists at the secondary level. Since independence, the Indian constitution has contained affirmative action provisions which specify minimum reservations (quotas) in education, employment and politics for people from designated castes and tribes (Desai and Kulkarni, 2008). Scheduled Castes (SC) represent the lowest group in the caste hierarchy and Scheduled Tribes (ST) traditional tribal people. More recently, affirmative action has been extended to cover other marginalised groups which are designated as Other Backward Castes (OBCs). Updated figures on these groups from the 2011 census were not available at the time of publication. However, according to the 2001 census, SCs and STs accounted for around a quarter of the total population. That census did not include a count of OBCs. More recent NSS data estimate OBCs account for around 41% of the population and SCs and STs a little under 30% (Sethi and Somanathan, 2010). MHRD data show that in 2007-08 upper primary enrolment rates amongst these groups was only marginally below the national average. However, progress amongst all groups continues to be uneven across states, with significant differences persisting at both the school and tertiary levels (Table 2). Generally, enrolment rates are significantly lower in the poorer northern and eastern regions, including the populous states of Bihar and Uttar Pradesh, where income levels and literacy rates remain well below the national average.

School retention rates are also improving, with the proportion of children starting school who reach the final year of a given level rising markedly through the 2000s. Nevertheless, in absolute terms they remain low, with on average only three quarters of children who started grade one in 2003-04 reaching fifth grade by 2007-08, and an even smaller proportion of children from minority groups. Retention rates drop off at higher levels of schooling, with only a little over half of those who started primary school in 2000-01 reaching eighth grade in 2007-08. Nevertheless, transition rates to tertiary education have risen over the past decade and are relatively high by international standards, with around half of all students who complete upper secondary school now taking up tertiary studies. Hence, improvements in school enrolment and completion rates will likely lead to much higher participation in tertiary education.

Table 2. State-level enrolment rates, literacy rates and incomes

In 2007-08

	Gross Enrolment Rates						Literacy rate	GSP per capita (% national average)
	Elementary (grade 1 to 8)		Secondary (grade 9 to 12)		Tertiary			
	Males	Females	Males	Females	Males	Females		
Andhra Pradesh	99	94	76	66	20	12	68	100
Arunachal Pradesh	109	101	102	80	10	9	67	82
Assam	111	114	80	67	10	8	73	61
Bihar	93	85	54	36	9	4	64	31
Chandigarh	99	96	87	73	47	44	86	298
Chhattisgarh	108	99	56	51	7	3	71	85
Delhi	110	103	74	79	16	20	86	216
Goa	98	104	80	69	18	13	87	275
Gujarat	103	96	62	47	11	9	79	135
Haryana	111	104	85	66	15	16	77	161
Himachal Pradesh	113	110	98	91	12	11	84	118
Jammu & Kashmir	116	116	100	77	15	17	69	71
Jharkhand	102	101	65	46	13	9	68	58
Karnataka	102	96	72	65	17	9	76	105
Kerala	101	98	100	104	21	29	94	123
Madhya Pradesh	106	102	55	40	12	9	71	55
Maharashtra	101	100	80	67	17	16	83	142
Manipur	108	108	100	88	7	8	80	56
Meghalaya	109	119	64	51	12	9	75	84
Mizoram	109	107	71	85	16	12	92	81
Nagaland	112	107	101	98	11	12	80	57
Orissa	98	97	57	47	11	7	73	75
Puducherry	102	104	90	96	27	23	87	234
Punjab	104	102	64	69	11	12	77	132
Rajasthan	106	94	70	45	14	7	67	69
Sikkim	120	122	56	46	9	7	82	98
Tamil Nadu	100	102	82	83	18	15	80	116
Uttarakhand	104	99	84	78	11	9	80	96
Uttar Pradesh	100	94	58	46	14	15	70	47
West Bengal	102	103	51	47	14	8	77	89
India	**102**	**97**	**67**	**56**	**14**	**12**	**74**	-

Note: GSP is gross state product. Literacy rates are from the 2011 Census.

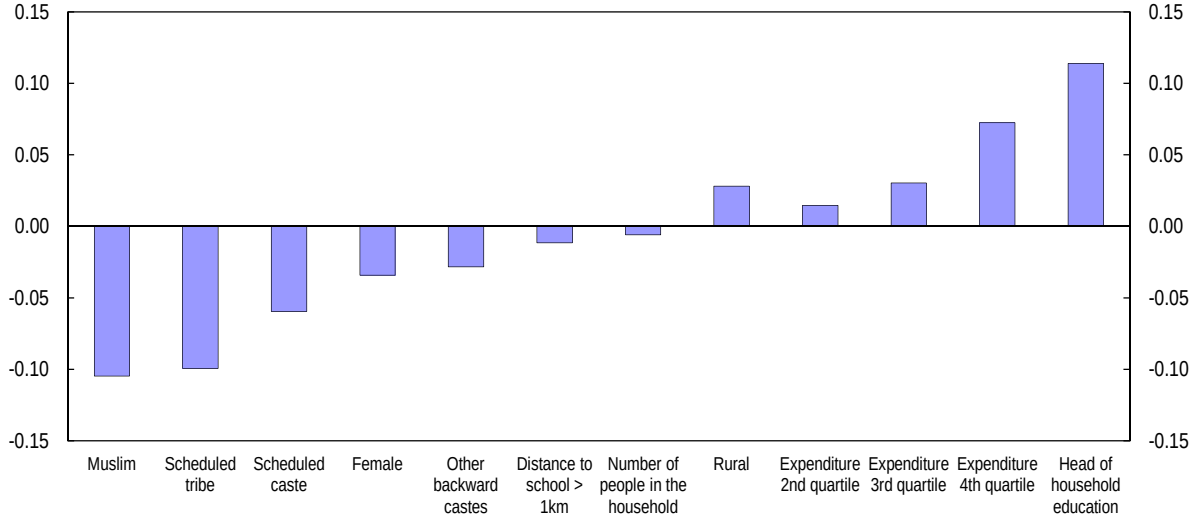
Source: CEIC, 2011 Census and NSSO, National Sample Survey 64th round.

Even with improving enrolment and retention rates, student attendance continues to be patchy, with one national survey reporting that around one quarter of enrolled children were absent on any given school day (ASER, 2011). As the time spent in the classroom has a direct impact on learning there is a significant need to lift attendance (Lavy, 2010). In emerging countries education participation at the school level can be extremely sensitive to even small changes in costs and targeted programmes that provide direct financial assistance or in-kind rewards have been shown to have a significant positive impact (Kremer and Holla, 2008). The elimination of tuition fees and the provision of subsidies for school uniforms, for example, have been shown to improve enrolment and attendance, and to reduce drop-outs (Evans *et al.*, 2008). In India, NSS data confirm that there is a strong positive correlation between

enrolment and household affluence at all levels of education and responses to NSS questions on why students drop out of school confirm that financial constraints are amongst the most important factors. In contrast, factors reflecting key education "inputs" including distance to school and school infrastructure as well as inadequate numbers of teachers, which have been a key focus of government policy initiatives, were relatively unimportant in influencing the decision to drop out. For the age cohort corresponding to primary and middle school these input-related factors were cited as being most important in less than 1% and 3½ per cent of households respectively. These results are supported by econometric analysis of the factors that impact on attendance at elementary school (Figure 3). Household affluence is found to have a larger marginal impact on attendance than the distance to school. Another finding is that children from disadvantaged groups, including Muslims as well as SCs and STs, are less likely to attend compared with children from other groups who otherwise share a similar background. With the Right to Free Education Act mandating that the full cost of elementary education, including tuition and other fees, at public and private aided schools will be met by the state, its introduction should have a positive impact on elementary level participation. To the extent that non-attendance is also explained by parents misperceiving the value of education, the compulsory aspect of the Act should also help increase participation.

Figure 3. Factors influencing the probability of attending elementary school

2007-08



Note: Columns represent marginal effects from a probit regression where the dependent variable is equal to one if a child aged between 6 and 14 years is currently attending school and zero if they are not attending. The regression sample includes 76 245 observations. All variables significant at the 10% level or higher are reported, except for state dummy variables, and. Marginal effects for expenditure variables are based on dummy variables for monthly household expenditure quartiles. They indicate the marginal probability of children from households in higher expenditure quartiles compared to those in the lowest quartile. Analysis based on household data from National Sample Survey 64th Round.

Source: OECD calculations.

In India, a major initiative which aims to improve nutrition standards, and raise enrolment and attendance is the Mid-Day Meal Scheme (MDMS). It provides a cooked lunch at school to children enrolled in elementary government schools and in some states replaced an earlier scheme that provided once-a-month take-home food rations. Over time the scheme has expanded considerably, reaching almost 112 million students in 2008-09 (MHRD, 2010). Evaluations of the MDMS indicate that it has had a decisive impact in improving enrolment and attendance. Jayaraman *et al.* (2010) find that it lifted first-grade enrolment by around 17% and by a smaller but still significant margin in higher grades. Moreover, the delivery of nutritional supplements through a cooked meal under the MDMS appears to have had a larger impact on school attendance than earlier schemes that provided a take-home ration. Afridi (2010)

finds that switching the delivery mode to the school lunch improved attendance rates amongst first-grade girls by more than 12 percentage points.

Although improving, health service provision is generally weak in India (Herd *et al*., 2011a) and a number of indicators suggest that the average health status of Indian children remains poor. Illness is one factor that is likely to have a significant adverse impact on regular school attendance with one survey reporting that over 40% of children were ill in the past three months such that they missed four or more consecutive days of school (Kingdon and Banerji, 2009). Moreover, the health status of Indian children has been found to be closely associated with long-term learning outcomes (Kingdon and Monk, 2010). Health interventions including those focussed on deworming have been found to be a cost-effective way to lift student attendance and improve health status more generally (Miguel and Kremer, 2004). By reducing the incidence of communicable health problems such interventions can also generate positive spillovers throughout a community. Targeted programmes to reduce the incidence of preventable illnesses should therefore be considered as complements to the MDMS. More generally, international experience suggests that conditional cash transfers can be an effective instrument for improving health and education outcomes of the poor but these are little used in India (Herd *et al*., 2011b). Therefore consideration should be given to implementing such schemes to help the government meet its goals of universal elementary, and then lower secondary, enrolment and completion.

School learning and higher education quality remain low

Notwithstanding the rapid gains in enrolment and attendance, average levels of educational attainment and basic skill acquisition, including reading and writing, remain low by international standards. Over time, the stock of educated workers will rise. However, cognitive skill formation, rather than education attainment *per se*, is what matters most for both the earnings potential of the individual as well as their contribution to economic growth at the aggregate level (Hanushek and Woessmann, 2008). The extent to which increases in participation translate into improvements in skills and ultimately better social and economic outcomes will depend heavily on the quality of education provided. As participation rates continue to rise the priority will need to shift to focus on learning outcomes of students.

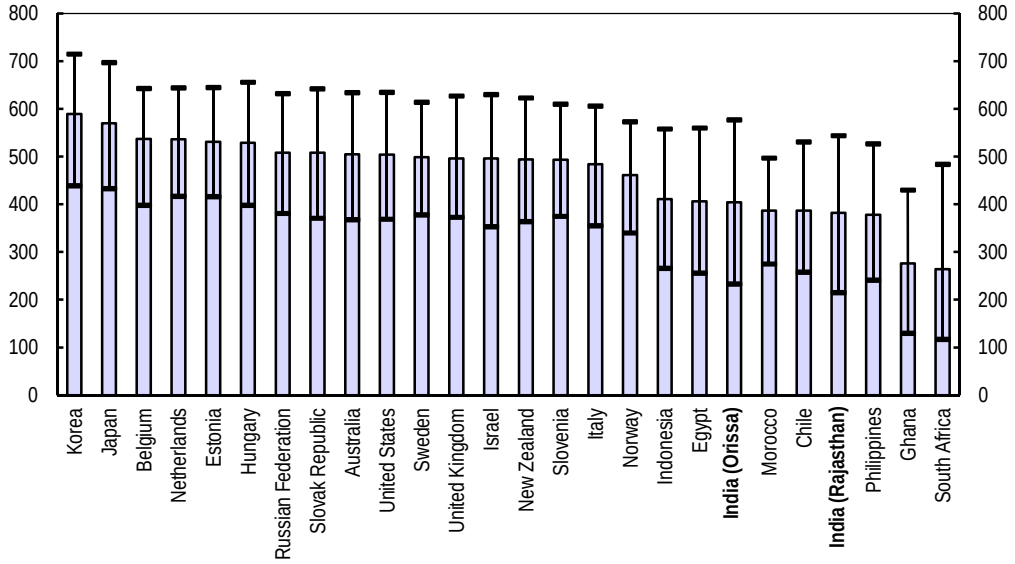
Basic child literacy rates have steadily risen over the past two decades and now more than nine out of ten adolescents are deemed to be literate according to NSS data. However, surveys of student learning suggest this improvement in headline literacy rates may mask problems with the depth of learning occurring in Indian schools. Testing of third-grade students undertaken by the National Council of Educational Research and Training shows that nationally, around one in five students failed a basic language test and one in three a basic mathematics test (NCERT, 2009). Average results varied considerably across states and in one state, Chhattisgarh, a majority of students failed both mathematics and readings tests. Results from other surveys confirm a worrying picture. A recent national survey of rural students shows that barely over one half of fifth-grade students demonstrated a sound ability to read a second grade text (ASER, 2011). Similarly, a survey of students in Uttar Pradesh and Madhya Pradesh found that a majority of fourth and fifth-grade students failed mathematics and literacy multiple choice tests designed for fourth graders (Goyal and Pandey, 2009).

While domestic learning surveys can track student performance and provide an overview of the state of learning, they generally lack international comparability. In India there is a dearth of data based on an international assessment framework, making it difficult to benchmark the performance of Indian students. One exception is data compiled by Das and Zajonc (2010) based on tests of grade-nine students from two Indian states, Orissa and Rajasthan, in 2005 which use mathematics questions from the Trends in International Mathematics and Science Study. Overall, students from these Indian states performed poorly by international standards, ranking towards the bottom of a sample of 51 countries (Figure 4). In some India-wide domestic learning assessments, students in Orissa and Rajasthan score a little below the

national average so that the average Indian student may perform better than indicated by this international comparison (ASER, 2011). However, as secondary level enrolments are lower in India than most of the other countries reported in the study, the relative standing of the average Indian child may be considerably worse.

Figure 4. International secondary student test scores

In 2005



Note: Selected countries shown from study. Columns indicate average test scores and the bars the range of scores between the 5th and 95th percentiles.

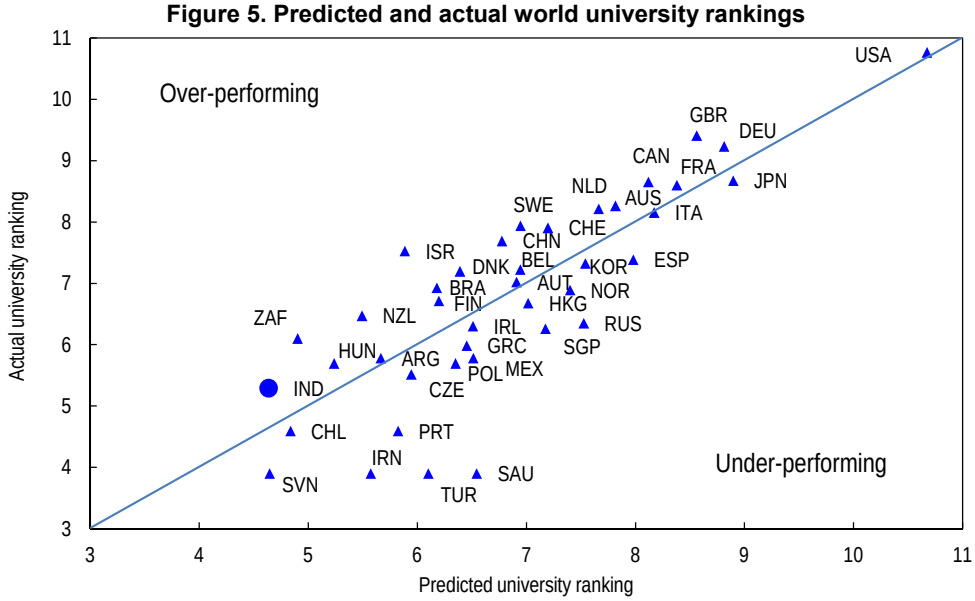
Source: Das and Zajonc (2010).

A second feature of these results is a wide dispersion for the two Indian states, as measured by the difference in test scores of the 5th and 95th percentiles. Of a sample of 47 countries for which the distribution of results is calculated, Orissa and Rajasthan show a higher dispersion than all but one country, South Africa. This is consistent with results from other surveys of student learning in India, which have also reported considerable dispersion (Goyal and Pandey, 2009). Further evaluations of student learning using international assessment frameworks will help policymakers and other stakeholders gain a better understanding of how Indian students are progressing and ways to improve the quality of education provision. To this end, the evaluation of secondary students in Himachal Pradesh and Tamil Nadu currently underway in the context of the OECD Programme for International Student Assessment (PISA) will help to fill an important gap for two additional states. Given the size and diversity of India, commitments to additional testing using international frameworks should be considered.

The quality of VET and tertiary education in India is also highly variable. According to industry surveys, workers trained in the VET system are often ill-equipped and require significant on-the-job training (World Bank, 2008). Weaknesses in skill formation appear to be broad-based, with workers often lacking technical knowledge and having poor soft skills, including the inability to communicate effectively in the workplace. There is also evidence of a skills mismatch in technical and vocational areas, with graduates often employed in fields other than those in which they trained and employers reporting skill shortages. In the tertiary segment there are a group of small elite institutions at the top end of the scale including the IITs and IIMs as well as other institutions of national importance that are internationally renowned for high-quality research and education, especially of post-graduate students. A small number of business schools, predominately private, also score well in specialised international rankings of business

schools.[2] Few Indian institutions feature in international university rankings and none currently features in the top 100 of the most commonly cited indexes. To some extent this reflects India's relative level of economic development (Figure 5). An arguably more important indicator of the weakness in the higher education system is the seemingly poor employability of many Indian graduates. According to one industry association representing software and service sector firms, only 10 to 15% of business graduates and approximately one quarter of engineering graduates were judged to be employable (NASSCOM, 2009). Similarly, despite thousands of applicants taking a civil service entrance exam to fill just 30 specialised positions in economics and statistics, only 23 applicants were found to be suitable (Kapur, 2010).

Figure 5. Predicted and actual world university rankings



Note: Actual university rankings are based on an aggregation of university rankings from the Academic Ranking of World Universities. The predicted university ranking is derived from a regression that includes controls for GDP per-capita measured in PPP terms and total population.

Source: ARWU, World Bank World Development Indicators and OECD calculations.

The rise of the private sector creates challenges and opportunities for improving access and quality

Private enrolments are increasing at all levels

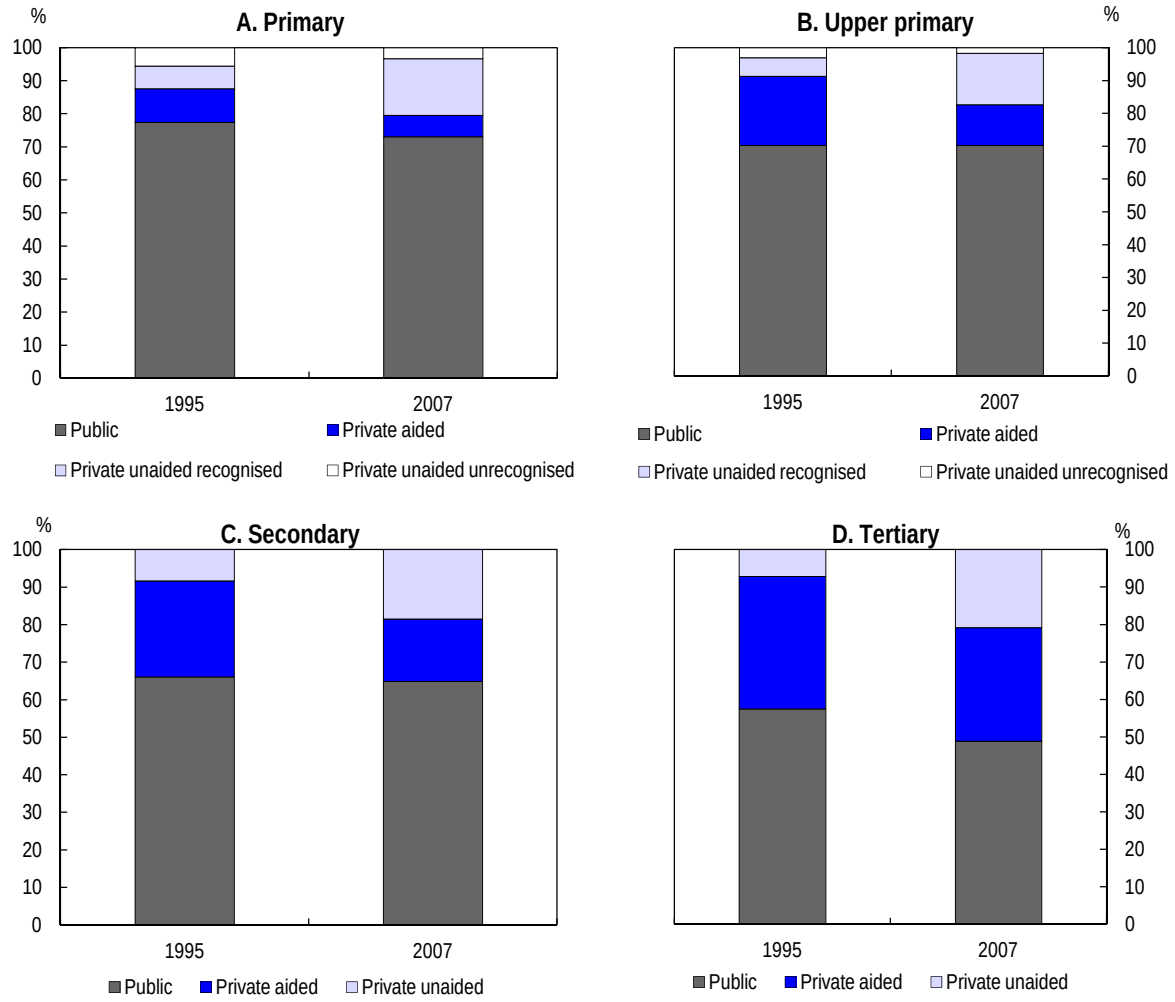
As in many other emerging countries fiscal constraints faced by governments in India, especially at the state and local level, have meant that the supply of public education, while expanding rapidly, has not kept up with demand. In higher education, this squeeze has been particularly acute as governments have shifted resources towards the elementary sector in order to meet priorities to lift participation at lower levels. Indeed, in real terms, per-student funding in higher education was lower in 2007-08 than in the mid-1990s. Some tuition fee differentiation is occurring in public institutions, allowing higher rates of cost recovery in professional and technical courses. However, fees generally remain low and institutions face intense political pressure not to raise costs for students.[3] These fiscal pressures, together with rising household

2. The Indian School of Business ranked twelfth in the 2010 Financial Times list of the top MBA programmes in the world http://rankings.ft.com/businessschoolrankings/global-mba-rankings.

3. Visva-Bharati University, a centrally-funded public university, recently attempted to increase tuition fees for undergraduate courses from around INR 216 (a little under $5) to INR 2100 (approximately $46) per year. Additional revenue was required to fund renovations following a rejection from the University Grants Commission for financial assistance. The announcement led to student strikes forcing university

incomes, have inevitably prompted a response from the private sector giving rise to a diverse range of government and private schools and higher education institutions (Box 2). The private sector segment now accounts for a rising share of enrolments and is more important in India than in most OECD and many emerging countries (Kapur and Crowley, 2008). Internationally, private sector involvement in education tends to be most heavily concentrated at the tertiary level (OECD, 2010a). The same is true in India but enrolment in private institutions has generally risen at all levels since the mid-1990s (Figure 6). Even at the primary level private schools now account for around one quarter of all enrolments and more than half of all tertiary students attend private universities or colleges.

Figure 6. Public and private enrolment shares



Source: NSSO, National Sample Surveys 52nd and 64th rounds.

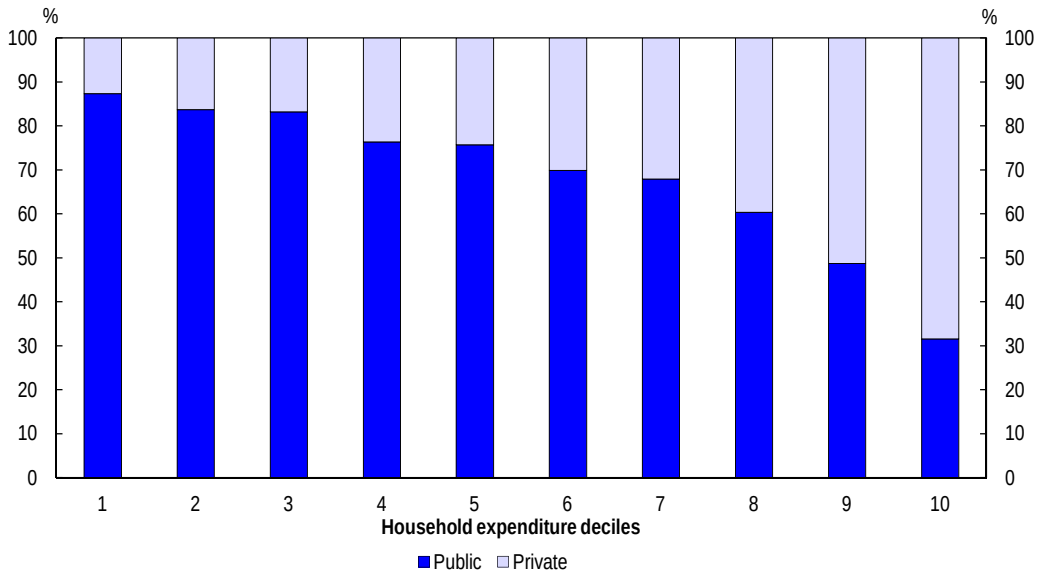
This expansion has occurred despite often ambivalent official attitudes towards the role of the private sector as well as legal barriers to private investment. Most notably, education continues to be reserved as a non-profit activity and private schools and higher education institutions must be registered as a charitable society or trust or non-profit company. Any surpluses generated by private institutions have to be reinvested in the same institution and foreign investors are prohibited from repatriating profits. In practice,

management to raise fees by only half the original target ("Visva-Bharati Bites Fee Bullet", *The Telegraph*, 18 June 2010; and "Visva Bharati Reduces Fee Hike By 50 Per Cent", *Indiaedunet*, 2 August 2010).

investors circumvent these restrictions by creating subsidiary companies that supply the non-profit entity with land, infrastructure and other services in return for rental and other fees which are then distributed to investors. Alternatively, schools and colleges that are not officially recognised simply exist in the informal sector of the economy. *De facto*, education has thus often become for profit.

Private schools are most common in urban areas and tend to attract students from higher socio-economic groups (Figure 7). However, spurred by demand from parents, large numbers of unaided private schools have also emerged in poor communities, as well as in rural areas, expanding private school access to relatively poor households. These schools are run on a low-cost model, allowing them to offer low tuition fees. For example, a survey of private schools in Delhi by Tooley and Dixon (2007) revealed that the median monthly tuition fee at unrecognised primary schools was a little over $2, at the time about 5% of the monthly wage for a breadwinner on the minimum wage. Operating costs of unaided private schools are often considerably lower than public schools owing to much lower teacher salaries, which account for the largest share of costs. As the gap between public and private school teacher salaries appears to have widened, the cost advantage of private schools has likely risen (Kingdon, 2010). In rural Uttar Pradesh, public teachers' salaries were already estimated to be 12 times higher than the private sector equivalent prior to large increases for public teachers under the recent 6th Pay Commission. The strong demand from parents, even those of modest means, for private school education reflects dissatisfaction with public schools and a view that private schools offer higher-quality education. One specific reason cited by parents for sending their children to a private school is a perception that teachers are less absent and more committed in private schools (Desai *et al.*, 2008).

Figure 7. Public and private school enrolment shares by household expenditure deciles



Source: NSSO, National Sample Survey 64th round.

A second reason is that private schools offer more instruction in English, which has been shown to raise earnings potential. For example, Azam *et al.* (2010) find that in India, after controlling for levels of education and other personal characteristics, hourly wages for workers fluent in English are 34% higher than those who speak no English. Thus, they conclude that the economic return to English fluency is approximately equal to the return for finishing secondary school.

Perceptions concerning the superiority of private schools have been confirmed by a number of school surveys (Muralidharan and Kremer, 2007, Tooley and Dixon, 2007, Desai *et al.*, 2008 and Goyal and

Pandey, 2009). These indicate that the provision of essential facilities at private schools, such as drinking water, toilets and blackboards, is in general no worse, and sometimes better, than in public schools. Teacher attendance and teaching activity is generally found to be higher in private schools, despite the higher pay and better teaching credentials of public school teachers. Raw test scores also tend to be higher in private schools. Whether this reflects student and/or parent characteristics, which might influence test scores as well as the choice of schools, or the more effective delivery of education has been the subject of several empirical studies (Goyal, 2009, Wu *et al*., 2009, ASER, 2010 and French and Kingdon, 2010). Generally, the results show that, after controlling for student and family factors and teaching inputs, scores in private schools are higher, indicating that private schools may indeed offer superior quality education. However, this advantage does not always hold and varies in magnitude across studies. On average it may therefore be relatively small.

In higher education, in India, as in other countries, the expansion of private education has been particularly strong in disciplines where start-up costs are relatively low, returns to graduates are high and the supply response from the public sector sluggish (Levy, 2008). Degree-conferring private colleges now dominate in a number of professional disciplines, including engineering, information technology, management and some allied health disciplines such as pharmacy. In VET, growth in private industrial training centres has been much faster than public-sector industrial training institutes. As this expansion has largely been driven by market forces, it has enabled the supply of tertiary education providers to become more closely aligned with the demands of the labour market. For vocationally-oriented degrees, in particular, students typically opt for the private sector if they are unable to secure a place at a public university or college. Hence, private providers have acted to absorb excess demand and have expanded access to those who can afford to pay in areas where labour market prospects are good. Private unaided institutions typically receive no financial support from the government and rely heavily on tuition fees as the main source of revenue. Fees are guided by state committees and operate on a multi-tier basis whereby a minimum percentage of places are required to be made available to disadvantaged students at a lower rate and the remaining places at a capped rate. Committees tend to set fees based on input costs whilst allowing "reasonable" surpluses, despite the official non-profit policy. As disadvantaged students are cross-subsided, fees for students required to pay the top rate exceed costs and are typically high relative to average household incomes (Carnoy *et al.*, 2010).

Ensuring widespread benefits requires appropriate government intervention

The rapid expansion in enrolments at lower levels, together with rising household incomes and India's relatively youthful demographic distribution imply that demand for education will continue to rise strongly over the medium term at all levels, but especially at secondary and tertiary levels. Indeed, if the government is successful in reaching its enrolment rate targets in 2017, the number of secondary students will rise by over 10 million, a more than 20% increase, and the number of tertiary students by over 12 million, more than double the current figure. This increase in demand will require a continued rapid expansion in the number of schools, colleges and universities. A significant portion of this growth is likely to be provided privately given both the desire of some households to choose a private education and their increasing ability to pay, as well as limits on the ability of governments to expand public provision at an adequate pace.

In order for the government's objective of a continued rapid rise in education participation to be met in an environment where private education is expanding, policies need to be framed to ensure access across all segments of the population. As noted, although low-cost private schools provide alternatives to the public system for relatively low income households, private schools often cater to more affluent students. Moreover, those at the bottom of the income distribution cannot afford to pay even low fees and will remain dependant on government support (Harma, 2009). One of the most significant provisions of the Right to Free Education Act is a requirement that all private schools allocate at least 25% of places in first

grade to government-funded students from disadvantaged backgrounds and ensure continued access on the same basis to these students until the completion of eighth grade. By allocating public funds to students rather than schools this provision has the hallmark of a voucher system which could improve choice and learning outcomes for a large number of disadvantaged students. Ultimately, however, the impact of the private school quota provision will depend on how state governments implement this and other provisions in the Act.[4]

The reimbursements to private schools will be set at the lower of the equivalent cost incurred at a public school or the full cost incurred by the host private school. If private schools continue to operate on a lower-cost basis than public schools, as is the norm now, governments stand to reap savings as students move to private schools. Whether private schools are fully reimbursed will depend on their own cost structure. Schools with operating costs the same or lower than public schools will be covered while those with higher operating costs will face funding gaps that will ultimately be borne by the families of fee-paying students. Since the higher-cost private schools cater to students from relatively affluent households this system of funding will result in wealthier households cross-subsiding poorer students. However, other provisions in the Act require adherence to a range of minimum standards concerning school infrastructure (including the provision of playgrounds) and teacher salaries, which may raise costs for all private schools considerably. Schools catering to poorer households and those in built-up urban areas, including slums, will be most adversely affected and potentially many could be forced to close, reducing the supply of schools. Therefore, some of the requirements in the Right to Free Education Act need to be implemented flexibly.

Government-funded places at private schools will be allocated by a lottery open to eligible students and the extent to which disadvantaged students benefit will depend heavily on the precise formulation of eligibility criteria. So far the indications are that they will focus on minority group status and household income. The private schools provision will likely lead to an increased mixing of students from different socio-economic backgrounds, particularly where students are granted access to elite private schools. Ultimately, greater classroom diversity should be beneficial. However, it may present additional challenges in ensuring that the learning environment can effectively cater to all students, especially publicly-funded students who are susceptible to being at a disadvantage given the importance of household factors in shaping the early development of skills. To maximise the benefit from switching to a private school, the government could consider a base-plus formula for funding whereby the reimbursement is at least partly linked to the performance of students who take part in the scheme.

In higher education, the expansion of privately-financed institutions has led to a significant shift in cost sharing towards households. From an efficiency and equity perspective this might be justified on the grounds that returns to higher education, in particular, are skewed towards private agents (Kijima, 2006). However, high upfront fees present a challenge for ensuring access to credit-constrained individuals, of which there are many in India in part due to low levels of financial development (Herd *et al*., 2011c). The government has adopted a two-prong approach to promote access to private higher education. First, as noted above, it has required private providers to adopt a multi-tier pricing arrangement with reduced fees for students from disadvantaged backgrounds. Second, it has promoted a loans scheme which is based on a government-designed model and operates through the commercial banking sector.

Under the loans scheme, all students who have gained admission to a recognised institution and course, as designated under official guidelines, are eligible to apply. The loans cover general and

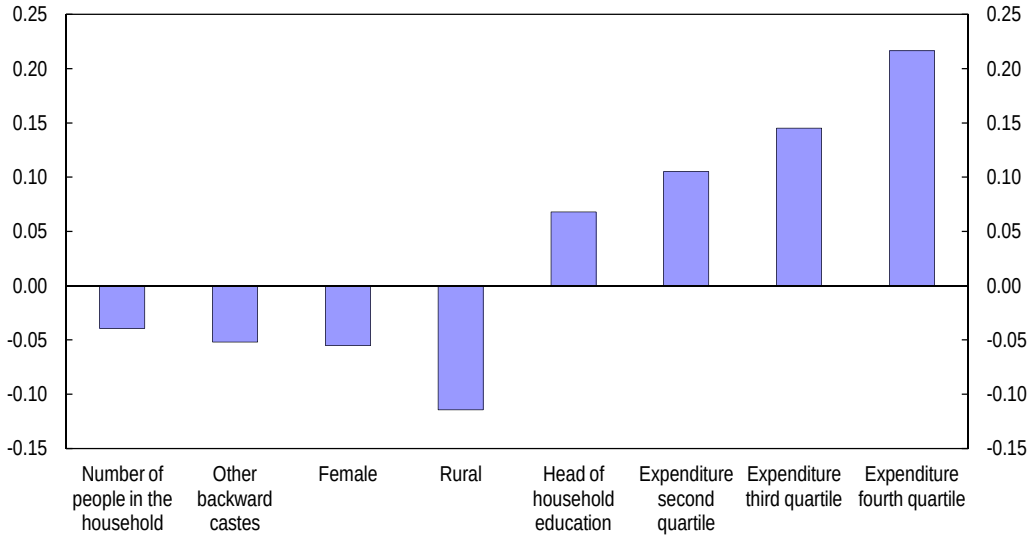
4. State governments are finalising implementation details. The legal validity of the Right to Free Education Act has been challenged by a private schools association on the grounds that it impinged on their rights to admit students of their choice ("Pvt School Association Challenges Validity of RTE Act in SC", *Times of India*, 23 March 2010).

specialised undergraduate diplomas and degrees as well as post-graduate qualifications. However, access to loans for most VET courses is less assured and subject to greater discretion by the banks. All students are assessed by individual banks against a range of creditworthiness criteria. The terms of loans are not based on strict commercial parameters but are less favourable to students than government loan schemes operating in a number of countries. Interest rates are set at the benchmark prime lending rate, which normally fluctuates between 10 and 15%, with a small penalty for larger loans, while the normal repayment period is between five and seven years. Loans of up to INR 400 000 (approximately $8 790) do not require collateral but do require a guarantor. A study of international student loan schemes by Shen and Ziderman (2009) confirms that the implicit subsidy of student loans in India, as reflected in the difference between what students receive and are required to repay, is relatively small. It was also found that the recovery ratio was relatively low, suggesting high default rates and/or inefficiencies in the management of loan portfolios.

Empirical analysis using 2007-08 NSS household data indicates that students from some officially designated minority groups (scheduled castes and tribes), are equally likely to progress to tertiary studies as their peers with similar socio-economic backgrounds, although students from other disadvantaged groups (other backward castes) are marginally less likely (Figure 8). However, for all students participation in higher education is strongly correlated with household affluence. Students from households in the top expenditure quartile are around 22 percentage points more likely to attend than those in the bottom quartile. Together these results suggest that policies have been effective in promoting access amongst some minority groups but that credit constraints may be imposing barriers to access for all students. Given the more commercial orientation of student loans in India the requirement of a guarantor likely prevents poorer students from obtaining finance. The government is considering increasing the implicit subsidy in loans by capping the applicable interest rate below market rates, with lower rates for students from low-income households, as well as providing loan guarantees. International evidence suggests that where tuition fees are deferred through a student loan scheme, participation is relatively insensitive to increases in tuition fees, indicating that the assurance of funding rather than the extent of subsidisation is most important for promoting access (Marcucci and Johnstone, 2009). The priority, for the government, therefore, should be to focus on removing barriers to finance, rather than lowering its cost. In this vein, the government could consider establishing a government loans system as an alternative to the existing scheme for some or selected students, including those seeking VET qualifications. Loan repayments could be made income-contingent, especially for qualifications that would likely lead to employment in the formal sector, including undergraduate and post-graduate degrees. A government loans system could expand access and provide greater flexibility to set eligibility criteria and the terms of repayment in order to meet access and cost-sharing objectives (OECD, 2007).

Figure 8. Factors influencing the probability of tertiary attendance conditional on the completion of secondary school

2007-08



Note: Columns represent marginal effects from a probit regression where the dependent variable is equal to one if a person is currently attending a tertiary course and zero if they have completed secondary but are not pursuing tertiary studies. The regression sample includes 6 535 observations. All variables significant at the 10% level or higher are reported, except for state dummy variables. Dummy variables for scheduled castes, tribes and Muslims were found to be insignificant. Marginal effects for expenditure variables are based on dummy variables for monthly household expenditure quartiles. They indicate the marginal probability of attending tertiary studies for members of a household in higher expenditure quartiles compared to those in the lowest quartile. Analysis based on household data from National Sample Survey 64th Round.

Source: OECD calculations.

Improving school performance requires reforms as well as resources

Teacher accountability and incentives need to be improved

Teachers are critical in shaping learning outcomes and efforts to lift the overall quality of education need to consider ways to improve teacher effectiveness. In India high rates of teacher absence and low levels of effort have long been recognised as having a major deleterious impact on school learning (PROBE, 1999). Although teacher absence rates seem to be declining, they remain relatively high (ASER, 2011). As noted above, there appear to be significant differences in teacher attendance and observable efforts between public and private schools, which may largely reflect differences in employment arrangements. Whereas regular public school teachers are normally employed by state governments on permanent contracts, teachers in private schools are employed at the school level on fixed-term contracts. Teachers in private schools therefore face a stronger accountability mechanism: indeed, in a survey of 3 000 public schools there was only one instance of a head teacher dismissing a teacher for repeated absence, whereas in a sample of around 600 private schools, 35 head teachers had at some point dismissed a teacher for repeated absence (Muralidharan and Kremer, 2007). This difference in incentives may be compounded by the fact that private school teachers are more likely to hail from the local community and hence have a greater stake in ensuring positive outcomes for students.

Evidence on the impact of contract or "para-teachers", which have been recruited in large numbers by some state governments to fill shortfalls, is consistent with evidence on the effectiveness of private school teachers and further reinforces the importance of effective accountability mechanisms. Para-teachers are recruited locally, normally on a fixed-term contract, to work in public schools and typically have lower

credentials, at least in terms of teacher qualifications (Pandey, 2006). Part of the rationale for recruiting para-teachers was to assist regular teachers but in practice para-teachers often perform the same function as regular teachers, despite being paid a fraction of regular teacher salaries. Atherton and Kingdon (2010) report that contract teachers are more effective than regular teachers in Uttar Pradesh and at least as effective in Bihar.

Moving away from permanent contracts and increasing monitoring for public school teachers would likely have a significant positive impact on teacher effort and ultimately the quality of education. Politically, however, this is likely to be very difficult. At the very least, mechanisms for dismissal due to repeated absence without sound reasons or unsatisfactory performance must be strengthened. For new teachers, longer probation periods involving progressively-longer fixed-term contracts, subject to continued strong performance, could also be implemented. Para-teachers could also be offered the same arrangement (and salaries), subject to a sufficient upgrading of qualifications and a proven track record, thereby providing a way out of the dual labour market in the public system which does not seem to be sustainable.[5] A long-running policy experiment in India has found that monitoring teacher attendance whilst also providing financial rewards for regular attendance and penalties for poor attendance can lead to significant improvements in both attendance and student learning (Duflo *et al.*, 2010). Given the already considerable advantage of public school salaries compared with private schools, offering additional financial rewards for regular attendance is difficult to justify. However, better attendance monitoring coupled with financial incentives for strong performance and penalties for poor performance, seems to be advisable.

Accountability can also be strengthened by increasing community involvement in school management and providing beneficiaries, including parents and other local members of the community, authority to play a role in selecting teachers as well as an appropriate mandate to punish or reward good performance. Such beneficiaries may have a considerable informational advantage over remotely located government officials in monitoring teacher performance and understanding the needs of local students. Under the *Sarva Shiksha Abhiyan* initiative the government promoted greater community involvement through the formation of school management committees (SMC), comprising parents, head teachers and village leaders. These bodies were empowered to monitor teacher performance, report back to government officials and request additional resources. The Right to Free Education Act builds on this by requiring all schools to have an SMC. Awareness of the functions of SMCs in India appears to vary widely and in some cases is very poor (Pandey *et al.*, 2008). Furthermore, policy experiments indicate that providing more information on the functions of SMCs as well as training may not be a panacea for addressing these problems (Banerjee *et al.*, 2010). This may reflect disillusionment linked to the limited remit of SMCs and evidence from other emerging economies indicates that empowering SMCs to make important decisions such as hiring teachers can lead to positive outcomes (Duflo *et al*., 2007). Increasing the authority of SMCs should therefore be considered.

Ensuring effective tracking of student performance is also central to lifting the performance of teachers and the system more broadly. Diagnostic testing can help teacher effectiveness by identifying weaknesses in student learning, thereby enabling teachers to better focus their efforts. In addition, diagnostic information can help to improve teacher motivation through improved goal orientation and by providing evidence on student improvement. In some parts of India grade-ten exams, which were judged by the authorities to be creating undue pressure on students, have been scrapped and replaced with a system of continual and comprehensive assessment which is also increasingly being adopted at lower levels. These reforms have the potential to create a better atmosphere for learning, but it is essential that

5. In late 2009, 142 000 para-teachers in Bihar, where many para-teachers have been recruited, went on strike demanding higher wages and better conditions ("Half-baked Instructors", *Hindustan Times*, 30 December 2009).

methods of assessment provide accurate information on learning progress to teachers, school administrators and, above all, students and parents.

The results from a policy experiment in India provide evidence on the effectiveness of low-stakes testing and performance pay (Muralidharan and Sundararaman 2010a, 2011). The impact of providing teachers with diagnostic information on students, designed to help teachers improve learning outcomes, and performance pay for teachers linked to student test scores was assessed. In schools where diagnostic information alone was provided no change in students test scores were observed, including amongst weaker and stronger students. In contrast, in schools where performance pay was introduced alongside the diagnostic information, student test scores improved significantly. Hence, improving diagnostic feedback to teachers may help, but only if accompanied by appropriate incentives to improve teacher effort. Reforms to assessment procedures may therefore need to be complemented with other changes to ensure their effectiveness.

Increasing resources can help improve instructional quality

Despite the strong rise in recruitment, the increase in the number of teachers in primary schools has failed to keep pace with the growth of the number of students, with the average student-teacher ratio rising from 43 in 2000-01 to 47 in 2007-08. In the coming years, the government intends to reduce it sharply, with the Right to Free Education Act stipulating a maximum student-teacher ratio of 30:1 in primary schools. The impact of class size on learning is a subject of keen debate, but recent international evidence points to a weak negative correlation between class size and student learning achievement (Hanushek and Woessmann, 2010). There is also evidence that the effects of class size vary across countries, with stronger adverse effects in less advanced economies where classes are generally larger and teachers less well trained (Altinok and Kingdon, 2009). Additional teaching resources could also contribute to building a more systematic and effective remedial learning system, which is needed in both government and private schools (Banerji and Mukherjee, 2008). The need is particularly acute given the continued push to reduce the number of out-of-school-children, which has led to a rise in the number of over-age children, particularly at lower levels of schooling.

A related issue important in the Indian context concerns the extent of multi-grading, where one teacher is required to teach two or more classes simultaneously. In India, average school sizes are small, reflecting low levels of urbanisation as well as long-standing policies of prioritising close access to elementary schools across the country (Kochar, 2007). Figures from the DISE database indicate that on average elementary schools employ 4½ teachers with around one quarter of schools having less than three teachers and one in ten only one teacher (NUEPA, 2010). Given chronic problems of poor attendance the effective number of teachers is likely to be considerably lower. Therefore many schools are insufficiently staffed to ensure at least one teacher for each grade, necessitating multi-grade classes. The national ASER Survey confirms that the incidence of multi-grading is high with second grade students sitting with children from other grades in over half of all schools surveyed (ASER, 2011). Other surveys indicate that in Uttar Pradesh and Bihar multi-grade classes are the norm and also that the incidence of multi-grade classes is unstable (Kingdon and Banerji, 2009). On repeated visits, around 49% of children were always sitting in classes that were multi-grade, a further 44% were sitting in either mono- or multi-grade classes and only 7% always in a mono-grade class. International comparisons confirm that the incidence of multi-grading is high in India compared with both advanced and other emerging economies (Mulkeen and Higgins, 2009).

Multi-grading can offer advantages for cognitive and social development by exposing students to more advanced material than would normally be the case in mono-grade classes and encouraging self-directed learning and increased learning and interaction with children of different ages (Little, 2006). However, on the downside, multi-grading can effectively reduce instructional time for individual students,

particularly if teachers adopt a segmented approach to teaching where instructional time is effectively divided up between different grade curricula. There are several features of the Indian context which suggests multi-grading is likely to exert a deleterious effect on learning and results from empirical studies support this conjecture (Jacob *et al.*, 2008 and Goyal, 2009). First, Indian school curricula tend to be text-book based and grade specific. This makes it more difficult for teachers to adopt inclusive, flexible methods in a multi-grade classroom and increases the likelihood of reductions in instructional time for any given grade. Furthermore, the significant proportion of very small schools means that many classes cover more than two grades, exacerbating this reduction in grade-specific instruction. Second, generally poor quality teacher training with inadequate attention to the specific challenges of multi-grade teaching are likely to mean many teachers are ill-equipped for the challenges of multi-grade classes. Third, although the availability of teaching aids is improving, Indian schools are still generally not well resourced, especially for grade-specific materials, reducing the extent to which teacher time can be substituted with other inputs. Moreover, some of the beneficial effects associated with peer learning are likely to be diluted on account of the relatively homogenous student populations in small rural schools (Kochar, 2007).

Evaluations of programmes in India indicate that additional teaching resources can have a significant positive impact. In a recent experiment in Andhra Pradesh an additional contract teacher was allocated to a sample of government schools and test scores of students monitored over a two-year period and then compared to students in similar schools that did not receive an additional teacher (Muralidharan and Sundararaman, 2010b). At the end of the trial it was found that scores at the schools benefitting from the additional teacher were on average 0.13 to 0.15 standard deviations higher. Improvements were larger amongst first-grade students and in more remote schools, where students are presumably more disadvantaged. A separate study examined the impact of a remedial education programme in Gujarat and Maharashtra which hired young local women with only secondary school qualifications to assist struggling students. The scheme was found to lift scores by around 0.28 standard deviations in the second year (Banerjee *et al*., 2007). Neither of these schemes made use of regular teachers and the instructors were paid a fraction of regular teacher salaries. This highlights the cost effective gains that can be achieved from employing non-specialist teachers. As governments seek to reduce student-teacher ratios it is important that they consider the cost effectiveness of achieving this objective with regular teachers against recruiting more remedial and contract teachers.

Teacher development pathways need to be made more accessible and more effective

While greater accountability would improve the effectiveness of teaching, indicators of poor skill development amongst teachers across the system suggest that the framework for teacher development needs to be strengthened. For example, one survey found that less than half of teachers could provide the correct definition of difficult words and meaningfully summarise fourth-grade text, while four out of five teachers admitted to having problems with their students' math queries (Kingdon and Banerji, 2009). The importance of better teacher education is further supported by empirical evidence from India indicating that better-qualified teachers are more effective, conditional on the type of employment contract (Atherton and Kingdon, 2010). The Indian classroom is a challenging environment for even well-qualified teachers given large class sizes and the high proportion of first-generation learners. NSS figures indicate that in 2007-08 over half of all mothers of students were illiterate, suggesting that many students may not be receiving much additional academic assistance outside the formal education system. The diversity of students requires tailored interventions even when resources are lacking. Under the Right to Free Education Act the government is aiming to standardise the age profile for each school grade at the elementary level and has allocated funding for remedial education to accelerate the progression between grades for late starters. Over time this should result in greater age-grade standardisation, but multi-grading and a high proportion of first generation learners is likely to remain a reality in a large number of small schools. Many teachers are ill-prepared for the challenges, with 44% of teachers in India lacking any tertiary qualifications (Mehta, 2010). This is low not only by OECD standards, where all but a very small

minority hold some kind of tertiary qualification, but also emerging economies such as Brazil and Malaysia, where 91% and 99% of teachers respectively hold tertiary qualifications (OECD, 2009).

The formal teacher education system, which provides pre-service training, faces a number of weaknesses that reflect broader problems with the tertiary education system (see below). A central body, the National Council for Teacher Education, has authority for setting national standards for teacher education but enforcement varies widely across states and in most states there is a shortage of training institutions (Rajya Sabha Secretariat, 2010). A recent survey highlighted a number of specific deficiencies in teacher training institutions (World Bank, 2009). Colleges are often poorly resourced and faculty tend to work in isolation and undertake very little research while the approach to training lacks innovation and students appear to show little initiative. A further problem is that curricula are often outdated and faculty lack appropriate qualifications and experience in the classroom to be effective teacher trainers. Wide-ranging reforms of the higher education sector focussed on lifting quality should go a considerable way to improving the quality of pre-service teacher training.

However, an effective professional development pathway for teachers must also incorporate access to continual training which focuses on learning activities pertinent to the classroom (OECD, 2005). The need for effective in-service training is particularly strong in India given the rapid expansion of the teaching workforce which has inevitably led to the recruitment of less qualified and experienced teachers. Under the *Sarva Shiksha Abhiyan* initiative funding has been allocated to provide in-service training of up to 20 days for all elementary teachers, as well as separate training for untrained teachers and an induction scheme for new recruits. However, only 35% of teachers in recognised schools reported that they had undertaken any in-service training in 2008-09 (NUEPA, 2010). Moreover, while welcoming the opportunity to undertake such training, teachers tend to find that techniques are not always suited to the realities of their classrooms, particularly with respect to over-crowding and multi-grading (Mooij, 2008). There is a need for governments to closely monitor, evaluate and alter current in-service programmes as required to ensure their effectiveness and access for all teachers, including in secondary schools. In addition, over the medium term, induction programmes should be expanded to incorporate a formal mentoring system, as exists in many countries, to help ease the adjustment to the classroom for junior teachers.

Lifting vocational and tertiary education quality requires wide-ranging reforms

More effective regulation is needed

The regulatory regime for vocational and higher education in India is complex and unwieldy. The large number of regulatory stakeholders has given rise to overlapping responsibilities, creating uncertainty and administrative burdens. Both the central and state governments have direct responsibilities for public universities and colleges, which are managed through their education and other ministries. The University Grants Commission (UGC), a central government statutory authority, has responsibility for nationwide standards setting and coordination for universities and non-specialised colleges, while the All India Council for Technical Education (AICTE) performs similar functions for technical colleges. In addition, several professional councils, some of which operate at both the central and state levels, have authority for specific disciplines including a number of vocational fields and medicine. Universities also play a direct oversight role. The very large number of public and private colleges are governed through a system of university affiliation whereby universities set the curriculum that colleges are required to adopt and have responsibility for setting and administering examinations. As all colleges offering degree level courses are required to be affiliated with universities, they are indirectly subject to the same government regulations covering universities. In the VET system standards are, for the most part, regulated by a central authority, the National Council for Vocational Training (NCVT) which operates under the auspices of the Ministry of Labour and Employment, as well as state-level counterparts. There would be merit in making the NCVT an autonomous authority so that accountability for enforcing standards is more clearly defined.

The regulatory system is also highly prescriptive. In tertiary education, over the years the main standard-setting agencies, notably the UGC and AICTE, have issued a number of regulations and rules covering a wide range of academic standards that all recognised institutions are required to meet (Agarwal, 2009). These include minimum qualifications for academic staff, requirements for staff promotion and workloads and standards of instruction. Such regulations have diluted accountability and promoted standardisation, thereby discouraging innovation and diversity. One manifestation of this is that curricula are often outdated and difficult to reform, even in the top universities. For example, in 2008 the syllabus for mathematics at Delhi University, one of the most prestigious universities in the country, was updated for the first time in over 18 years, despite the opposition of faculty members (Indiresan, 2009). At the same time the regulatory framework has had difficulty coping with the challenge of maintaining adherence to such rigorous norms in an environment where the number of institutions has expanded rapidly. Political interference and instances of corruption, especially concerning entry and changes in institutional status, have also been a problem (Kapur and Mehta, 2008).

Regulations governing the entry of new providers also need be reformed to avoid discrimination against the entry of larger institutions. A feature of the Indian higher education system is the very large number of small affiliated colleges, many of which have only a few hundred students. Given that the provision of higher education is often characterised by economies of scale and scope, this may be sub-optimal from the point of view of system-wide economic efficiency (Green and Johnes, 2009). A fragmented system such as the one in India may also impose higher oversight costs for regulators, given the need to evaluate and monitor a larger number of providers. As it stands the regulatory framework discriminates against larger providers owing to higher entry barriers. Whereas an affiliated college can be established by approval of the relevant regulator, universities require an Act of the Parliament or State Legislature, a far more cumbersome process. This exacerbates high non-regulatory barriers for universities. A college can be established with little capital using rented office space and employing a handful of staff members, some of whom may be hired on a temporary basis. In contrast, universities require major investments in infrastructure and face the added burden of acquiring land, which is particularly difficult in urban areas. Moving towards a process where the entry of a university can be authorised through a regulatory, rather than a parliamentary instrument, could help shape a more efficient higher education system over the longer term. At the same time, governments could consider the scope for merging smaller public colleges, particularly in large urban and other well-served areas.

There is a need for greater institutional autonomy, which has been shown to be closely associated with university performance internationally – in fact, many world class universities operate with few regulatory constraints (Aghion *et al.*, 2010). Within India it is revealing that some of the strongest higher-education institutions, including the IITs and IIMs, operate within a much lighter regulatory framework. Reports from the National Knowledge Commission and more recently the Yash Pal Committee recommended that the government replace the existing multi-agency structure with a single national regulator. Legislation is presently before Parliament to create such an authority, the National Commission for Higher Education and Research (NCHER), which would merge the function of the UGC, AICTE and other associated authorities. While reducing regulatory overlap it is unclear that the establishment of the NCHER will address deeper issues concerning the need to reduce stifling regulation. The intention is that the NCHER will operate at a greater distance from government and adopt a less prescriptive approach but changes to limit the scope of regulation have not been legislated. Whether a different approach emerges under a new institutional arrangement remains to be seen.

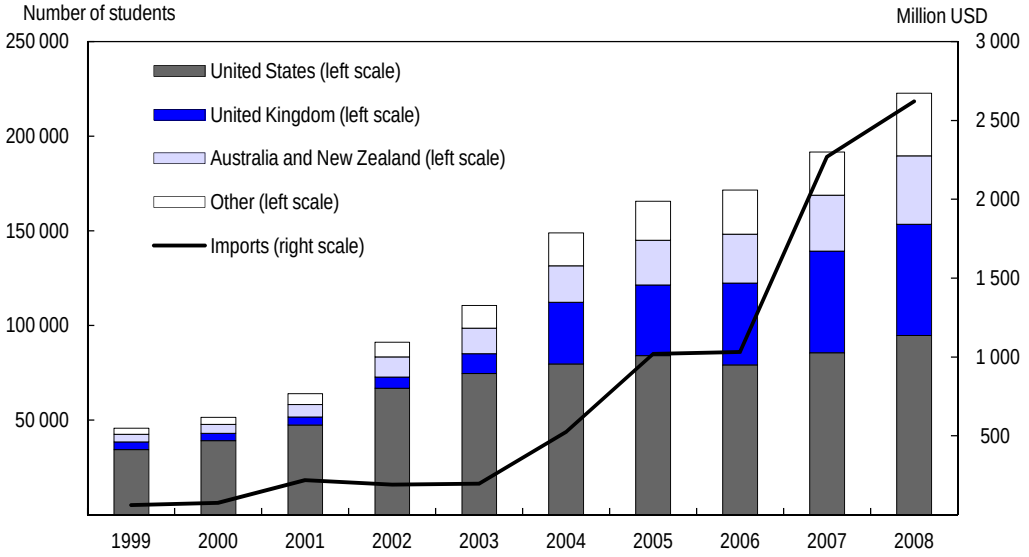
The intention of the college affiliation system was to ensure that larger, better resourced universities could support the development of small, fledging institutions while ensuring common teaching and assessment standards; in theory, universities are required to provide affiliated colleges with assistance across a broad spectrum. In practice, with the rapid expansion of higher education, some universities now have up to 800 affiliated colleges, some of which operate at a considerable physical distance (UGC, 2011).

Providing adequate support to effectively foster the development of all weaker colleges therefore poses a problem which will only worsen given the regulatory bias towards the entry of colleges. At the same time, the system is holding back those colleges which have the capacity to stand alone and push ahead with innovative courses and management practices. Recognising this problem, the government has granted some colleges a special autonomous status which provides them with greater freedom to set their own syllabi and conduct examinations. However, this process is evolving slowly: only 218 out of tens of thousands of colleges are currently classified by the UGC as autonomous, concentrated in a small number of states. Autonomous status needs to be offered to a larger number of stronger colleges, selected as those which scored well under national accreditation processes. Going further, autonomous colleges with a proven track record need to be given the opportunity to be upgraded to university status thereby moving to the maximum level of autonomy allowed under the regulatory system.

Lack of institutional autonomy is a particularly severe constraint on the development of a more dynamic and effective VET system. Government authorities have tended to adopt a hands-on approach to the running of industrial training institutes, which represent a major component of the VET system, leaving little scope or incentive for management to introduce innovations in curricula or course delivery (Majumdar, 2008). In this segment, institutional flexibility and close collaboration with industry is particularly important for ensuring quality and relevance (OECD, 2010b). This includes the need for effective "buy-in" from the private sector. Under the government's recent Centres for Excellence initiative it is seeking to devolve some authority and encourage stronger linkages to the workplace through management committees that comprise industry representatives. Critically, however, the government has retained controls over curricula, which is likely to slow efforts to modernise course offerings. In order to make the VET system more demand driven, and to lift quality more generally, the government should broaden the powers of management committees.

The government is also in the process of devising a regulatory structure for foreign education providers. Currently, 100% FDI in education is permitted but there is no framework for recognising foreign providers, effectively preventing their entry. The aim of reforms in this area is to entice high-quality universities to offer their own degrees in India. In doing so the government aims to benefit from the trend of foreign universities opening campuses abroad. Demand for foreign qualifications has been growing strongly amongst Indian students and India now ranks second only to China as a source of foreign students (Figure 9). The vast majority of these choose to study in English-speaking OECD countries with well developed markets for international education and high tuition fees, matching or exceeding the highest fees levied by private institutions in India (OECD, 2010a). Consequently, Indian imports of education services have been rising rapidly and amounted to $2.3 billion in 2009-10.

Figure 9. Indian students studying abroad and education service imports



Note: Data presented on a calendar year basis. Imports of education services can take any of four modes as defined under the General Agreement on Trade in Services (GATS). Data on the value of each mode of education trade is unavailable but given the number of students travelling abroad and cost of fees charged to foreign students in advanced countries it is likely that trade under mode 2, consumption abroad, represents by far the most important category.

Source: OECD and RBI.

Under the proposed reforms, guidelines on the mode of entry for foreign universities are clear and regulatory barriers appear to be low. However, foreign providers are required to be non-profit institutions and must maintain a minimum INR 500 million (approximately $11 million) capital fund. Existing restrictions on the repatriation of capital have been maintained. Moreover, it is unclear how existing rules and regulations concerning the operation of domestic higher education institutions will be applied, in particular whether tuition fees would be subject to regulation. Together these restrictions and potential ambiguities, as well as the challenges that domestic institutions face in finding suitable land for development and high-quality faculty, are likely to discourage foreign institutions. This is particularly so for the top calibre universities which are often self-regulating in their home countries and have been offered significant incentives to establish branch campuses in other countries (Box 3). Even if there is some foreign entry into the market it is unlikely that this will dramatically boost capacity or stem the outflow of students. There are many reasons why students choose to study abroad beyond the motivation to earn a foreign qualification, including the desire to gain international experience (IOM, 2008). A further motive, which appears to be strong in the case of Indian students, is to migrate (Baruch *et al.*, 2007). The reforms also fail to address a regulatory gap concerning the treatment of partnerships between Indian and foreign institutions, including joint programmes. A survey of these types of collaborations indicates that several Indian institutions offer foreign degrees in India, often outside the regulatory and quality assurance framework (UKIERI, 2008). Given the demand for foreign qualifications and the cost effectiveness of this mode of delivery, it is likely that these types of arrangements will proliferate; the government thus needs to ensure effective oversight.

Box 3. Internationally mobile university campuses and programmes

International student mobility continues to be the most important form of higher education internationalisation. However, international programme mobility, the second most common mode of cross-border higher education, and institutional mobility have both expanded rapidly since the late 1990s. Programme mobility typically involves the traditional face-to-face form of instruction which is either provided fully by a foreign institution or in partnership with local institutions. It may also involve students travelling abroad to undertake part of a programme at a foreign facility. Institutional mobility is a more nascent mode which represents a direct foreign investment by an education provider or company and includes the establishment of foreign branch campuses. For students, there are several attractions to these alternative modes of delivery, notably lower costs owing to both generally lower tuition fees and living expenses (which are invariably lower at home). Generally, programme and institutional mobility operates in accordance with government regulations where the student resides, to ensure compatibility with the local education system. Institutional mobility involves considerable financial costs and risks, given the substantial capital expenditure involved and the possibility of reputational damage if the venture is a failure, particularly for elite institutions. Direct financial costs are considerably lower for programme mobility. However, as the foreign institution is likely to lose at least some control over programme delivery the risk of reputational damage caused by poor quality may be high, particularly when the programme is undertaken through a franchise.

In some emerging economies, governments have actively encouraged universities with an international standing to establish partnerships with local universities and/or establish foreign campuses. This is motivated by a desire to leverage the research and teaching quality of foreign institutions to boost local capacity, both to expand opportunities for local students and increase the quality of local higher education institutions, sometimes with a view to creating an education industry that will ultimately attract foreign students. In this respect two of the most active countries have been the United Arab Emirates and Singapore, which has set a goal to attract 150 000 foreign students by 2015. In 2000 the government of Dubai established a "Knowledge Village" where several foreign universities have since established a campus. This initiative is located within a special economic zone that offers a number of financial incentives for foreign investors including 100% full repatriation of capital (including profits) and tax exemptions. In Singapore, the government has provided direct financial support to attract foreign universities, including $310 million for a medical school collaboration between the National University of Singapore and Duke University. Despite governments providing considerable incentives for foreign campuses and other collaborations, these have not always been successful and in some cases costly. For example, in Singapore, the first private foreign university, which was established by the University of New South Wales with financial assistance from the Singapore government, closed after only two months due to a failure to meet student intake targets, resulting in financial losses for both the government and the university. Also in Singapore, a research facility established with Johns Hopkins University closed due to failures to meet research goals, despite financial support from the government, while Warwick University withdrew plans to establish a foreign campus citing concerns over academic freedom.

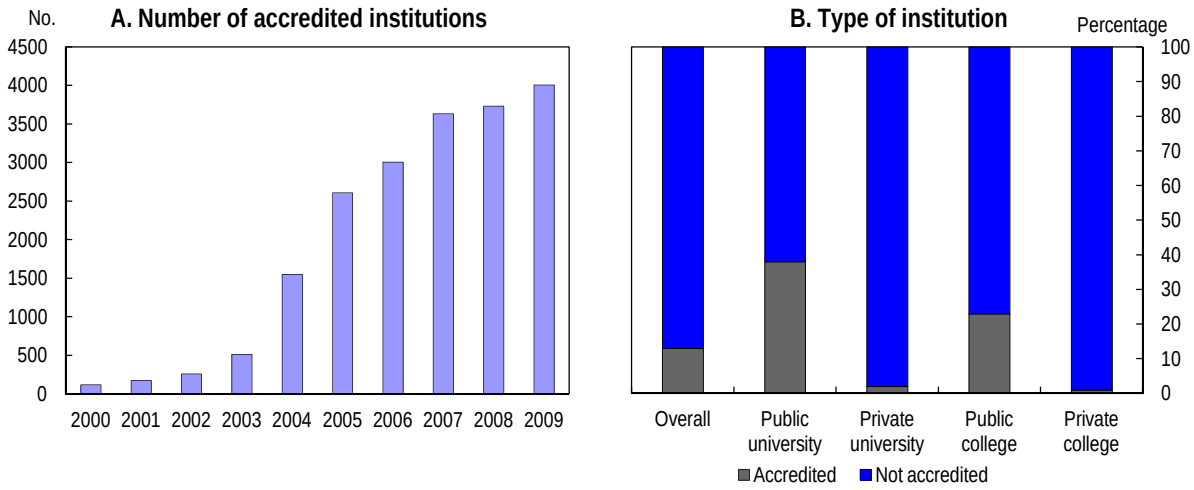
Source: Kapur and Crowley (2008), Vincent-Lancrin (2009) and Ng and Tan (2010).

Stronger quality assurance and better incentives are needed to boost performance

Effective quality assurance mechanisms are an important element of the policy framework, particularly in a country like India where the higher education sector is undergoing rapid change and expansion and there is a widespread need to lift teaching and research standards. They are also an important complement to reforms which decentralise control and provide greater autonomy at the institutional level by improving managerial accountability. In India a two-tier quality assurance framework exists whereby the entry of new institutions and/or programmes requires government approval and accreditation and assessment are provided by two principal quality assurance agencies, the National Accreditation and Assessment Council (NAAC) and the National Board of Accreditation (NBA). As in many other countries, the activities of these government accreditation agencies are complemented by demand-driven league tables published by media companies and other private organisations (Salmi and Saroyan, 2007). NAAC accreditation seeks to evaluate the standard of outputs as well as the effectiveness of processes and therefore provides a sound approach for improving quality. The number of assessed and accredited institutions rose sharply in the 2000s (Figure 10, Panel A). Nevertheless, as accreditation has not been made mandatory in all states, only around one third of universities and one fifth of colleges are

covered (PRS, 2010). Moreover, coverage has been lowest amongst private colleges, the fastest growing segment of the market and the one where arguably independent evaluation is most needed (Figure 10, Panel B).

Figure 10. Institutions assessed and accredited by the NAAC



Source: Agarwal (2009) and NAAC.

The government is seeking a major overhaul of the quality assurance framework and has proposed new legislation that would result in a system of mandatory periodic assessment and accreditation. The structure of accreditation agencies would change significantly, moving away from the current reliance on two government agencies to one where new non-profit accreditation agencies would be free to enter the market, subject to registration and continual monitoring by a new statutory authority. Colleges and universities would be liable for covering the fees associated with accreditation and would be subject to financial penalties if found to be operating without accreditation. The proposed reforms have the potential to dramatically expand accreditation capacity and could give rise to specialisation in accreditation, which could improve effectiveness. Nevertheless, it is unclear whether large numbers of new accreditation agencies will in fact emerge, particularly given the absence of a profit motive. The government will need to closely monitor implementation and, if new accreditation agencies fail to materialise, ensure that the NAAC and NBA are sufficiently resourced to cope with the likely surge in demand.

Government funding arrangements need to be reformed to provide better incentives for stronger performance. Currently, most government funding for both VET and tertiary education is institution-based and input-driven. Public universities and colleges tend to be inefficiently managed with often high ratios of non-academic to academic staff (Agarwal, 2009). They also have little incentive to seek other sources of revenue as these are sometimes offset by lower public allocations. Public VET institutes are allocated the same funding irrespective of their teaching and research quality or drop-out rate (World Bank, 2008). Under the UGC's Colleges with Potential for Excellence Scheme, grants are offered to high-performing colleges with larger amounts available for NAAC-accredited institutions. However, the coverage of the scheme is low, offering funding to a maximum of 246 out of over 25 000 colleges. Moreover, there appears to be ambivalence towards the scheme on the part of management in some colleges.[6] To add impetus to changes in the higher education quality assessment framework in India the government should consider tying more funding to outcomes, as is the practice in a number of countries (OECD, 2008). Given the current heavy bias towards institution-based funding, increasing the proportion of competitive, project-

6. "Few Colleges Apply for UGC Potential for Excellence Scheme", *The Times of India*, 7 October 2010.

based funding, as is the growing trend in some OECD countries, would also likely lift research productivity (Box, 2010). In the VET sector, allowing more scope for institutions to provide commercial services would boost revenue and improve knowledge of industry needs.

Competition between higher-education institutions for students and funding is important to promote quality. On the surface, there appears to be intense competition in the tertiary-education sector in India, with a large number of private operators and relatively low barriers to entry, at least in the case of small colleges. In practice, competition is less intense and therefore less effective as a promoter of quality for two reasons. First, even with the rapid expansion in supply, the strength of demand and increase in enrolments has tilted the balance of market power in favour of providers, especially in the university sector. Second, the higher education market suffers from a number of imperfections that are particularly large in the Indian context. Chief amongst these are information asymmetries where consumers of education may not be well positioned to accurately judge the quality of the service on offer before making a commitment. It is difficult for Indian students to make informed decisions given the small size of colleges, especially when many have been in existence for only a short time and lack a proven track record.

Compounding this problem, private providers spend heavily on advertising, some of which has been found to be misleading.[7] The government has proposed new legislation designed to crack down on false advertising and other forms of malpractice. The AICTE recently introduced a mandatory public disclosure requirement for all institutions under its purview. The information is to be made available publicly and includes fees charged, pass rates for recent cohorts and background on faculty members. In the VET sector the government has established the National Vocational Training Information Service, an internet-based system that provides basic information on courses offered by industrial training institutes and centres. These types of initiatives ensure a minimum level of information is available to prospective students at a low administrative cost and should be expanded to all institutions and sectors. To reduce the cost of comparing institutions the government could collate information provided by all institutions in a national, publicly available database along the lines of the National Center for Educational Statistics in the United States.

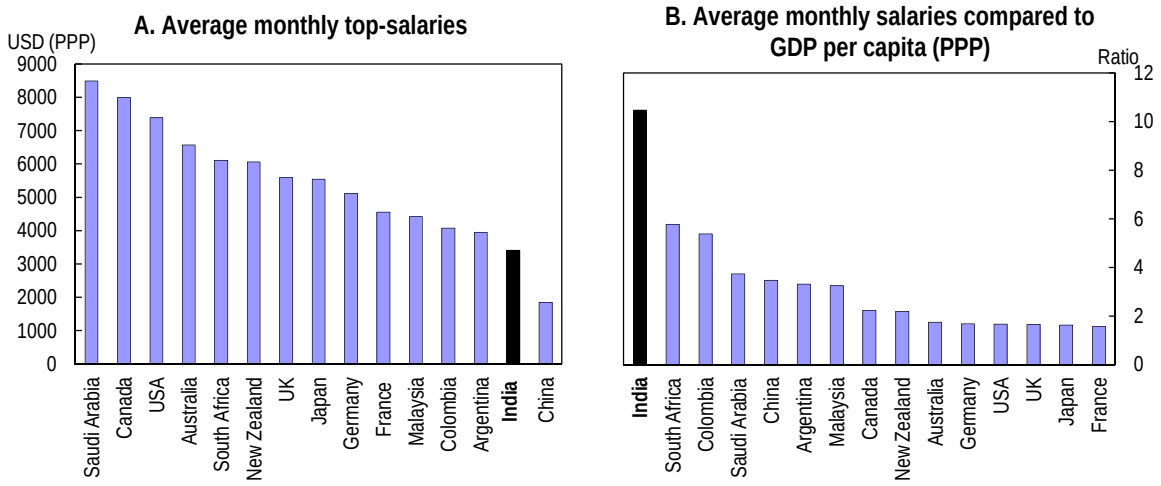
Academic workforce issues need attention

The quality of any higher education system depends heavily on its ability to attract and retain productive and committed academic staff. In India, the higher education system faces the dual challenge of lifting the productivity of academic staff, particularly with respect to research performance, whilst ensuring that institutions are adequately staffed and have access to an expanding pool of young academics to meet the growing demand for tertiary education. A recent survey indicates that significant faculty shortages already exist, with around half of all academic posts at universities found to be vacant, and similarly high vacancy rates in colleges, especially within the rapidly growing private unaided segment (Chadha *et al*., 2008). This shortage has forced institutions to rely heavily on part-time and temporary contract workers to fill teaching vacancies, and around one in four university lectures are now employed on this basis. The proportion of contract lectures is even higher in colleges and many smaller colleges lack any kind of core faculty (Gupta and Parekh, 2009). Faculty shortages partly reflect the inability of the higher education system to provide adequate places for post-graduate training. Most colleges focus on undergraduate education and even in many universities research capacity is weak. Teaching loads are high, even for senior staff, and many of the most capable researchers are located in specialised research institutions which largely operate in isolation from the higher education system (Basant and Mukhopadhyay, 2009).

7. Market analysis from AdEx India showed that education providers were the largest source of advertising revenue in the print media in the first half of 2010.

Governments need to ensure that remuneration and working conditions in academia are competitive so as to attract high quality candidates into the profession. Like other public organisations, universities and colleges now face stiffer competition for skilled workers from the private sector, where salaries are rising rapidly. More attractive salaries and working conditions on offer in universities abroad compound the problem faced by Indian higher education institutions, particularly given the prevalence of English in the Indian system. Following the outcome of the 6th Pay Commission, the UGC recommended significant increases in academic remuneration at all levels. Even so, salaries compare poorly with those on offer in many other countries (Figure 11, Panel A). However, by domestic standards salaries appear to be attractive, being several multiples of average per-capita incomes (Figure 11, Panel B). The competitiveness of salaries, at least domestically, is confirmed by surveys which report that the outflow of academics from the education sector is generally low, although higher in some more market-oriented disciplines such as science and engineering and also amongst junior faculty (Chadha *et al*., 2008). To improve international competitiveness authorities should consider implementing a special scheme with considerably higher remuneration and more flexible employment arrangements for internationally renowned scholars. Those employed under the scheme would provide leadership in research and post-graduate training, thereby boosting the pool of quality faculty over the longer-term, as well as lifting research capacity more generally. As the scheme would target a relatively small number of scholars it need not be particularly costly and could initially be run on a trial basis before being scaled up. Such initiatives have been adopted in other advanced and emerging economies, including in China where the leading universities have the flexibility to offer much higher salaries and in some cases allow staff to hold part-time appointments abroad (Altbach, 2009).

Figure 11. International comparison of academic salaries



Note: Average monthly top salaries based on professorial salaries. For India, average salaries are based on the average of assistant and full professor salaries. Salary data for India are based on UGC guidelines issued in 2008, following a review stemming from the 6th Pay Commission, and include basic additional academic and transport allowances but not rental assistance and other special allowances which depend on location. Salaries are calculated using World Bank PPP exchange rates. For other countries data refer to the period 2004 to 2007.

Source: Rumbley *et al*. (2008) and World Bank, World Development Indicators.

The current system of recruitment and promotion in India does not reward talent enough and needs to be reformed to promote greater meritocracy. A common practice in India is for universities to hire their own graduates which can create problems for building a productive and independent academic culture and in some cases applicants for academic jobs have been expected to provide payments to the hiring authority (Altbach, 2009). Experience is often a key factor determining promotion prospects, with UGC guidelines specifying minimum number of years of service as a key criterion for advancement at all levels. As part of

broader reforms to provide greater institutional autonomy and accountability, control over recruitment needs to be decentralised to the institutional level where management will be better placed to reward effort. There also needs to be a move away from the current indiscriminate use of permanent contracts, as is the practice in an increasing number of OECD countries (OECD, 2009). Instead, better career pathways which provide opportunities and rewards for promising young academics need to be devised. One option is to fund more temporary post-doctorate positions, which enable younger workers to establish their research credentials before becoming eligible for longer-term contracts.

Conclusion

Against a background of sustained rapid economic growth, rising public and private spending has ensured a marked expansion of the Indian education system. Considerable progress has been made in lifting enrolment and reducing gender disparities and the goal of universal enrolment at the elementary level is moving closer to fruition. However, high drop-out rates and low student attendance continue to hold back progress. Moreover, enrolment rates at secondary and tertiary levels compare poorly internationally. Large disparities in enrolment across states persist and some official minority groups continue to be disadvantaged. The Right to Education Act, complemented by other initiatives to encourage attendance, should provide a renewed impetus to raising enrolments. However, introducing other targeted programmes, including those designed to improve the health of children, may also be needed. The private sector share of enrolments, which is already greater than a half at the tertiary level, is likely to continue and policies need to ensure access across all segments of the population. The government has implemented reforms that require private schools to allocate one quarter of places to government-funded students. Ideally, these places should be allocated to the most economically disadvantaged students. To help improve access to higher education government loan guarantees should be provided for eligible students to alleviate credit constraints. Introducing a government loans scheme for all or some students, with an income-contingent repayment system where feasible, would also have merit.

Despite the progress made in lifting enrolments, test results for school children point to widespread shortcomings in educational achievement and efforts need to focus on improving outcomes. Teacher effectiveness needs to be enhanced by strengthening accountability and incentives. Problems with teacher absence endure and employment arrangements for public school teachers need to be reformed by strengthening dismissal provisions for teachers who are not performing satisfactorily. Local communities should also be empowered to have a greater say in the recruitment process. Increasing teacher resources and improving teacher development can help lift instructional quality. Student-teacher ratios are high, and teachers are often required to teach children in different grades simultaneously. This tends to reduce the teaching time available to each student. The government's goal of reducing student-teacher ratios should help lift instructional quality. Where appropriate contract teachers should be employed to complement regular teachers so as to ensure this expansion is achieved in the most cost effective manner. At the same time teacher development pathways, including pre- and in-service training, need to be made more accessible and effective.

Some Indian tertiary education institutions compare favourably in international rankings but on the whole many graduates appear to be inadequately trained for the workforce. Regulation is often ineffective, restricting choice and hampering entry and innovation. Several recent reform proposals could help in this regard. A proposed new umbrella regulator – the National Council for Higher Education and Research – could reduce overlap between regulatory agencies. However it would need to adopt a lighter regulatory touch and allow universities and colleges more autonomy. Vocational training institutions also need to be granted more managerial autonomy while linkages with industry need to be further strengthened to ensure quality improvements and ensure programme relevance. Separate reforms could simplify procedures for foreign educational institutions to operate in India but other requirements and restrictions may deter some providers. The regulations governing programmes offered jointly by Indian and foreign institutions also

have to be clarified. The need for effective quality assurance mechanisms is particularly strong in India given the rapid expansion of private providers. The government is moving to a mandatory accreditation system and opening the market to new accreditation agencies, which should improve coverage.

Finally, funding and recruitment arrangements in higher education need to be reformed. A greater proportion of public funding should be linked to the outcomes from quality assurance assessments in order to strengthen incentives for higher performance. This could be complemented by more project-based funding, allocated on a competitive basis, to encourage stronger research performance. The government also needs to do more to ensure sufficient growth in the academic workforce. Widespread faculty shortages already exist and there is a heavy reliance on contract teaching to fill teaching vacancies. As research and post-graduate training capacity in many institutions is weak, there is a risk that the supply of young academics will continue to be inadequate. Remuneration is competitive by local standards but not so internationally and avenues for recruiting and retaining top-performing academics should be explored. The current focus on experience, particularly years of service, as a criterion for promotion may discourage capable young faculty and needs to be reconsidered.

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