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Human Resources, Poverty, and Regional Development

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Human development has moved to centre stage in development theory. Education makes an important contribution to economic growth, but achievement of mass education is important for a number of other reasons as well. Inequality of access to education is a serious issue everywhere, and serves to reinforce the inequality of income. Inequality is evident from the viewpoint of socio-economic background, of gender, and of regional disparities. In a poverty alleviation programme, tackling regional inequalities in education may be crucial, yet it raises many issues. Will expanding educational opportunities only result in frustration if appropriate jobs are not available? Is the key role of education in poor regions to enable educated young people to migrate elsewhere to find better jobs?

In international comparisons, Pakistan appears well behind comparable countries in educational development. “Path dependency” means that the legacy of past deficiencies in expanding education will adversely affect Pakistan’s development for decades to come, and what is done now in education will affect development for half a century. A simple projection shows that even with the highly optimistic assumption that by 2030, Pakistan will reach the enrolment rates currently achieved in the United States, the proportion of the working-age population in that year with no education or only primary school education would still be as high as 35 percent. This underlines the need for a strong drive to expand educational opportunity.

INTRODUCTION¹

Edi is growing up on a small farm in an isolated part of the poor Indonesian province of East Nusatenggara. His parents are not the poorest of the poor; they have a few head of livestock. They are illiterate, but they sense that education is the key to their children escaping poverty. There is a primary school in the village—not a very good one, to be sure. In Edi’s class, the blackboard is cracked, teaching aids are non-existent, the teacher is not well trained and has to do other things besides teach because of his intermittent receipt of what is, anyway, a very low salary.

Only naturally bright children and those whose parents are better off than most overcome this disadvantage and proceed to lower secondary school. This costs

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¹This section is based on field work conducted by the author and colleagues. For a more detailed analysis of the issues, see Jones *et al.* (1998).

a bit more—both school fees, uniforms, and snacks. Happily, Edi does not have to pay for transport. The school is only four kilometres away, so he can walk it in 40 minutes if he hurries. His parents are nervous about letting his sister walk so far to school, however, so they have withdrawn her.

This lower secondary school is better than the primary school that Edi endured. But there are not many textbooks, and the teacher is not very well trained. There is a lot of rote learning, a lot of teaching of national ideology and not enough reading, writing and arithmetic.

Edi is an intelligent boy, and he would like to continue to upper secondary school and perhaps even to tertiary education. But the nearest upper secondary school is a long way away—in the town, and transportation is too infrequent and expensive for daily travel to be an option. Edi must move to the town if he wants to continue in school. But he has no relatives in the town, so he must search for a family that will take him in while he goes to high school. Some of his friends found families that would do this, but only on the arrangement that they work as glorified household servants while not in school. Because they were always tired, and were given little time to study, their school performance was not satisfactory, and some of them had to drop out.

A few of them managed to graduate from upper secondary school, but the cost of enrolling in the province's government university was too high for the family to afford. If they had wanted to go to a better university in Java, the cost would have been even higher. A couple of students from Edi's district did make it all the way to university in Java, but they never returned.

Hasan lives in Jakarta. His father is a middle level civil servant, and he has managed to put Hasan and his siblings through high school and get Hasan enrolled in a reasonable university. Hasan is not as intelligent as Edi, but he has managed to get through, assisted by some paid coaching by teachers in their spare time. Through some contacts of his uncle, he has a good chance of finding work in a private firm after he graduates.

Perhaps you recognise parallels in the Pakistani context to the story of Edi and Hasan. The issue of inequality of access to education by socio-economic background is probably a universal phenomenon, but one with particularly serious implications for development in poor countries such as Indonesia and Pakistan. Aside from considerations of equity, there are important implications for productivity and for regional development when intelligent children miss out on educational opportunities simply because of their socio-economic background or their place of residence. Patterns of government expenditure on education, unfortunately, serve to reinforce, rather than offset, the inequalities of access just described. Substantial public resources are devoted to tertiary education, which is accessed almost exclusively by those from more advantaged socio-economic backgrounds.

It is important to recognise just how widespread the problem is. In my own country, the advantage gained by young people who can afford to go to expensive private schools is clearly demonstrated in the distribution of scores in the matriculation examination taken at the end of secondary school in the state of Victoria (see Figure 1). The tiny area of overlap in the distribution of scores of government school and private school pupils is really striking. It is highly unlikely that the 90 percent of public school students who score below the marks achieved by 80 percent of students in non-Catholic private schools are less intelligent than these students. It is more likely that they have more supportive home backgrounds and a higher level of motivation, and that the standard of teaching and facilities is better in the schools they attend.

Inequality of access to educational opportunity is just one of the issues of human resource development in developing countries. In this address, I will touch briefly on a number of others, particularly those related to regional development and poverty alleviation.

HUMAN CAPITAL IN DEVELOPMENT THEORY

Over the past 15 years, human development has moved towards centre stage in development theory, being incorporated into the mainstream of economic growth theory in studies such as those by Lucas (1988) and Romer (1986). The new theories endogenise the rate of technological advance through human capital accumulation, most notably through formal schooling or through informal skill development on the job. In the learning-by-doing models, moreover, the accumulation of human capital generates externalities. All of these models make the rate of physical capital accumulation an increasing function of the level of human capital, and some make the rate of human capital accumulation an increasing function of the level of human capital. Empirical support for the new endogenous theories of growth appears to be quite favourable [Ogawa *et al.* (1993), pp. 3-5; Barro (1991); Barro and Sala-I-Martin (1995), Chapter 12]. Importantly, the initial human capital situation appears to be important in subsequent economic growth; for a given level of GNP, large differences in initial human capital endowments imply very different current growth performance. In other words, the past history of schooling matters.

It is not the movement of this issue towards centre stage in development theory that is important. It could just as easily move away again as the dictates of theoretical fashion change. What is important is whether human capital is indeed crucial in development. There do seem to be obvious connections between economic growth and human development.

On the one hand, economic growth provides the resources to permit sustained improvements in human development. On the other, improvements in the quality of the labour force are an important contributor to economic growth [Ranis *et al.* (2000), p. 197].

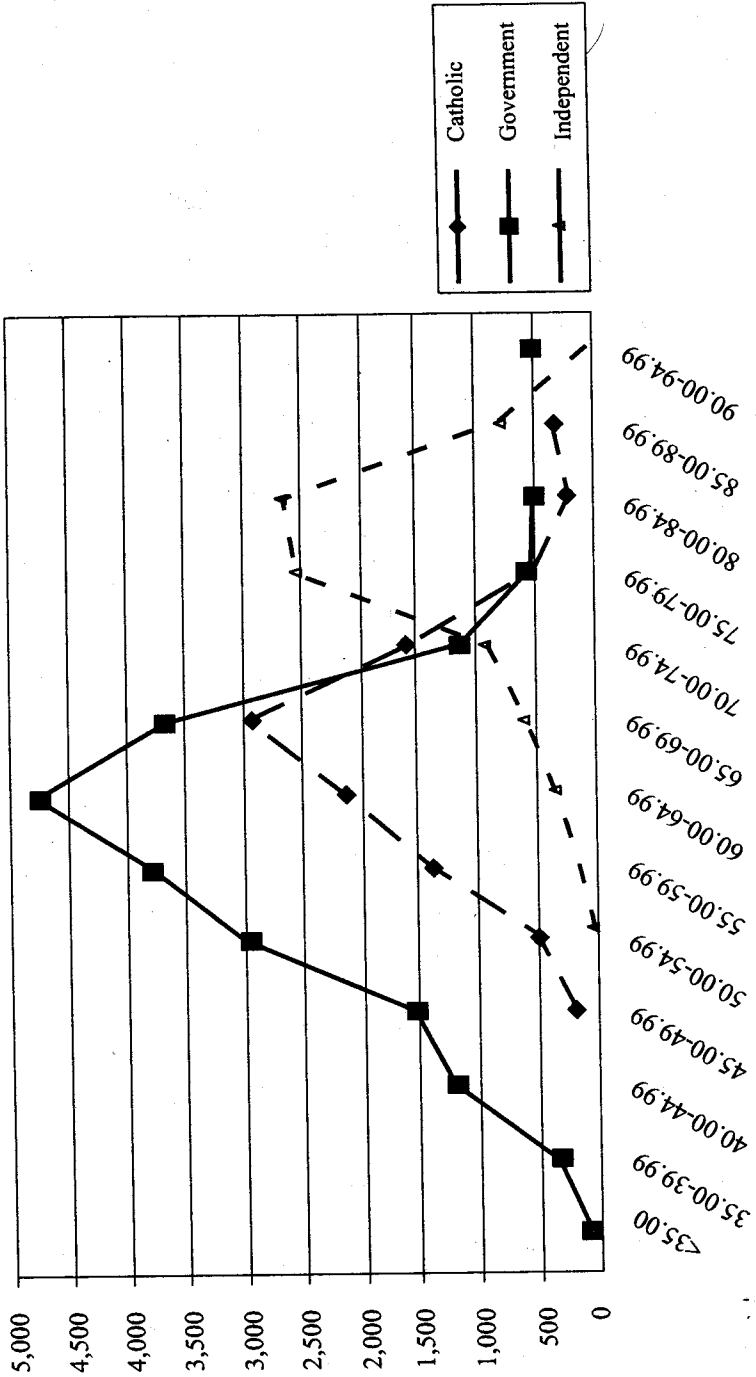


Fig. 1. Victoria, Australia: Matriculation Scores by Type of School, 1999.

But, as Ranis *et al.* note, while the two-way relationship between human development and economic growth may now be widely accepted, the specific factors linking them have not been systematically explored, and nor have priorities in the phasing of policy. The connections between human development and economic growth are not automatic, and their strength depends on a large range of factors—including, on the government side, the appropriateness of the economic policy setting, and the proportion of GNP devoted to priority social expenditure by the government; and on the household side, the more income households allocate to human development at a given income level. The latter is likely to be related to the level of female education and to female control over income within the household. There is now abundant evidence that education, particularly female, tends to improve infant survival and nutrition [Thomas (1990); Schultz (1993), pp. 68–73]. Where women control cash income, expenditure patterns appear to be geared relatively more towards human development inputs, such as food and education [Ranis *et al.* (2000), p. 198].

Ranis *et al.* (2000) hypothesise that economies can be on a mutually reinforcing upward spiral, with high levels of human development leading to high growth and high growth in turn further promoting human development. Unfortunately, they can also be on a downward spiral or stagnant situation in which poor performance in human development tends to lead to poor growth performance, which in turn depresses human development achievements. If the linkages between human development and economic growth are weak, lopsided development may result: for example, good economic growth may not bring about good human development if there is a low social expenditure ratio; and good human development performance may not generate good economic growth if investment rates are low. Lopsided development of this kind is unlikely to persist. Either the weakness in economic growth or human development will eventually act as a brake on the other, leading to the downward spiral already described, or the weak links will be strengthened, leading to the upward spiral.

Empirical investigation by Ranis *et al.* shows that a majority of countries are in the downward spiral category or the lopsided category where human development is not leading to strong economic growth. Those countries in the desirable upward spiral category are mostly in East Asia. Unfortunately, according to Ranis *et al.* categorisation, Pakistan over recent decades has fallen in categories either of lopsided development, under-emphasising human development, or the downward spiral. They note that Pakistan, like Egypt, had low public expenditure on education, partly due to heavy expenditure on the military, and its human development performance suffered especially from discrimination against females.

REGIONAL DIFFERENTIALS IN POVERTY AND HUMAN DEVELOPMENT

Not only do countries differ widely in their levels of poverty and human development, but regional differences within countries can be very marked. On the

whole, there appears to be a strong correlation between poverty and low levels of human development. This is evident in India, where Uttar Pradesh and Bihar, which “remain backwaters largely untouched by the economic energy rippling through other parts of the country” [Dhume (2000), p. 24] also happen to be among the states with the lowest levels of education [see also Saxena (1989)]. In Thailand, in the early 1970s, progression rates from lower to upper elementary school varied from less than 20 percent in some remote rural districts to over 80 percent in other more central districts [Bennett (1971)], with corresponding differences in the proportion of trained teachers. In Indonesia, too, enrolment and progression rates, examination scores and proportion of trained teachers tend to be lowest in the least advanced provinces and districts.

I confess to not knowing enough about regional development in Pakistan to be able to say much about such issues in relation to Pakistan. The data in Table 1 indicate quite wide urban-rural and inter-provincial differences in educational enrolment ratios, but by no means a perfect correlation between educational enrolment ratios and provincial per capita income levels. They indicate particularly wide gender differences in educational enrolment ratios in North West Frontier Province and Balochistan. Presumably even wider differences could be observed if the data were available for districts rather than for only four provinces that have wide differences in circumstances in their component regions.

It should also be noted that the gap between educational opportunities in different regions observed in quantitative data is likely to appear even wider if differences in quality of schooling are taken into account. This was hinted at in the introductory section of this address. It has also been stressed in the literature [e.g. Behrman and Birdsall (1983)].

The question is, what causes what? It could be argued that Ranis *et al.* downward spiral is operating in the poor provinces; lack of resources at the government and family levels make it hard to keep a high proportion of children in school, and the lack of well educated workers holds back development in these poor provinces.

But it is not quite as simple as this. If it were, finding the resources and educating the people would ensure more rapid development. However, in the province of East Nusatenggara in Indonesia, where I conducted fieldwork, the jobs available for those completing secondary school or tertiary education were very limited indeed. Such young people wanted government jobs, but the reality was that fewer than 10 percent of them could hope to find such jobs in the province. There were also very few large firms needing workers with completed secondary education, and relatively few opportunities for productive self-employment [Jones *et al.* (1998)]. Therefore raising secondary school enrolment ratios in the province was unlikely to have major direct effects in raising provincial productivity.

Table 1

Pakistan: Human Development Indicators, by Province

	Pakistan	Rural	Urban	Punjab	Sindh	NWFP	Balochistan
Per Capita Income (Rs) 1996-97	5903	5401	7137	6193	6432	4417	4994
Female LFPR	13.6	16.3	8.4	17.5	6.2	9.4	4.6
% Male Employment in Agriculture 1996-977	40.7	57.3	5.6	40.6	37.7	43.1	53.9
Dependency Ratio 1981	95.3	99.2	86.0	93.5	93.9	102.3	106.3
Dependency Ratio 1998	87.3	95.6	72.7				
Height/Age (% Stunted)	60.1	61.2	57.6	62.6	53.6	60.1	55.2
Weight/Height (%Wasted)	9.5	9.4	9.8	10.1	9.5	9.2	3.6
Adult Literacy Rate (Male)	59	52	73	57	65	20?	54
Adult Literacy Rate (Female)	31	20	56	34	35	56?	16
Primary School Gross Enrolment Ratio (Male)	76	70	95	81	64	82	68
(Female)	60	49	92	69	48	51	41
Secondary School Gross Enrolment Ratio (Male)	53	47	65	47	61	58	65
(Female)	27	13	55	27	39	13	14
Infant Mortality Rate	89	95	73	95	95	62	86
Child Mortality Rate (Male)	18						
(Female)	23						
Access to Safe Drink. Water (%)	22	9	50	18	29	27	20
Floor of House Brick/Cement 1996-97	33	22	58	38	32	15	15

Note: All figures for 1998-99 Pakistan Integrated Household Survey, unless otherwise stated.

A word here about the demand for education, which may be particularly relevant in relation to regional development issues. At the primary school level, once you have made enough school places available, you can ensure that most of these places will be filled, by the simple device of making education compulsory. But the further up the education system you go, the harder it is to enforce compulsory education. In Indonesia, the goal is to make education compulsory at the lower secondary level. So far, this is not possible, because there are not enough schools and teachers. But there are also strong indications that, compulsory or not, there will be resistance on the part of many parents to sending their children to lower secondary school, unless the quality of these schools is better than it is at the moment. The financial costs of schooling at this level are higher, as are the opportunity costs. In the regions, young people can get wage work in a whole range of activities without needing much education. And the well-paying jobs that a high school education might net them are few and far between.

The evidence about demand for lower secondary education no doubt varies widely across countries. To continue with the Indonesian example, however, from the late 1980s to the mid-1990s, lower secondary school enrolment ratios actually declined despite strong pressures to raise enrolment ratios at this level. The decline was concentrated in low-quality private schools that had opened in the hope of profiting from the expected growth in demand. Parents proved resistant to paying increasing school fees in these poor-quality schools.

THE HARD QUESTION: WILL RAISING HUMAN DEVELOPMENT IN POOR REGIONS REDUCE THEIR POVERTY?

A question that is at the core of regional poverty problems is: will raising human development in poor regions enable their economies to develop and perhaps narrow the poverty gap between themselves and richer provinces? A hard-nosed approach to answering this question is that, just as it is better to concentrate capital investment in wealthier provinces where its productivity is likely to be higher (a policy apparently followed in China, for example), so too should educational investments be concentrated in these provinces. Then people will move to the wealthier provinces, both to seek better educational opportunities and to seek work after finishing their education, leaving a smaller proportion of the national population in the provinces requiring transfer payments to maintain some kind of welfare standard.

The model of concentrating *capital* investment in the favoured regions of the country has downsides in terms of a trade-off of equity for growth, and potential social unrest. The model of concentrating *educational* investments in these favoured regions has similar downsides—costs of moving to the better opportunities and the uncertainties of finding work are borne by the people already disadvantaged by living in poorer regions.

The alternative, that of providing more education in the poorer provinces, however, could well lead to as great a volume of migration, because of the shortage of job opportunities for the better educated in the poorer province. But this is not necessarily an argument against expanding education in poorer provinces. Better educated workers at least have a better chance of assessing their prospects and finding employment niches after they have moved. Not only that, but there are other important reasons for expanding education in the poor provinces. Some of these are to do with indirect effects of education that are often under-valued in cost-benefit type calculus. One such indirect route to increased household incomes may be through the remittances sent by educated young people who had migrated to other provinces or overseas to obtain suitable work. Another may be increased incentive for investment in the province once more educated young workers are available, particularly in light of the lesser concerns about unionisation of labour in such provinces. Others include all the positive effects of education on child survival, nutrition, and lowered fertility that are well documented in the literature.

THE ISSUE OF GENDER AND SOCIO-ECONOMIC DISADVANTAGE

The Programme of Action agreed on at the International Conference on Population and Development in Cairo in 1993 gave considerable attention to the need to raise educational enrolment ratios for females. Indeed, it gave so much attention to this issue that John Knodel and I wrote a paper [Knodel and Jones (1996)] reminding readers that in significant swathes of the world (notably Latin America and South-East Asia), there is little difference between males and females in these enrolment ratios. We emphasised that in such regions, inequity of access to education by socio-economic background is far more important than inequity of access according to gender.

My only worry when writing that paper was that its message could be misinterpreted by planners in South Asian countries to mean that they could take a leisurely approach to expanding girls' education. Nothing could be further from the truth. In a country such as Pakistan, not only is inequality of access by socio-economic background a serious issue, but it is compounded by much lower levels of school enrolment for girls than for boys. Progress needs to be made on both fronts. I have already argued the case for improving access to schooling by children from poor families and those living in isolated areas. The case for expanding access by girls is the strong evidence that educating girls has an independent impact on child mortality, child health and nutrition, schooling and cognitive development of children, and reduced fertility [Schultz (1993); Bledsoe *et al.* (1999)]. In general, this impact is greater than that obtained by educating boys. It is not entirely captured by the educated individuals and their families, but has wider pay-offs to the society through pathways such as greater technological progress and faster economic growth.

Another more general effect of extending education to more of the female population seems to be increased participation of women in paid employment. This appears to be linked with the greater confidence education brings to women, its effect in breaking down attitudes favouring female seclusion, and the sheer economic loss involved in keeping educated women out of the workforce. This last effect could be crucial for Pakistan. Not only does Pakistan have very high dependency ratios as a result of its continuing high birth rates, but also these ratios underestimate real dependency, because a very low proportion of Pakistani women are in the workforce, at least as conventionally measured.

OVERCOMING PAKISTAN'S HUMAN DEVELOPMENT DEFICIENCIES

If we use other major Asian countries as comparators, Pakistan remains severely disadvantaged by its failure to achieve higher levels of human resource development. Limited schooling facilities thirty years ago are reflected in the poor educational level of today's labour force, in continuing high fertility rates, and in other ways. Failure to educate today's children will continue to affect the educational composition of the labour force 50 years from now.

The notion of path dependency is relevant here. Today's options are closely tied to past events. Path dependency, of course, arguably operates in many fields—for example, political development and economic structure. Perhaps the dead weight of the past is less deterministic in political development, where sharp discontinuities are at least theoretically possible. In terms of economic structure, path dependency is not quickly overcome: infrastructure or factories, once in place, are not so easily shifted, or closed down. But it may be in demographic terms that path dependency is hardest of all to escape. Cohorts move up the age pyramid with almost glacial speed: today's children will be in their prime working ages 30 years hence; today's prime workers will be the elderly 40 years down the track. The education of these cohorts is already determined. On-the-job training, and 'learning by doing' can alter their productivity, but adult education programmes that alter their basic literacy and numeracy are usually given greater rhetorical than practical support. Thus the education given to Pakistan's young people today will have a key bearing on the level of social and economic development that will be reached decades into the future.

A basis for considering the longer-term issues facing Pakistan because of the low level of school enrolment ratios at present is a projection of the educational attainment of Pakistan's population, on the assumption that adult education programmes will not basically affect the level of education reached by people as children. Lutz *et al.* (2000) have projected the educational attainment of the population of the world and various regions. I have used some of their results, and projected the educational attainment of Pakistan's population using similar assumptions. Two projections are used: one in which the highest level of education

attained by youth cohorts (aged 15–19 and 20–24) remains as it is in 2000; the other in which the levels attained increase in a linear fashion so that by the year 2030 they reach those currently obtaining in the United States (with all children receiving at least some primary education, 98 percent receiving at least some secondary education, and 55 percent entering tertiary education). This assumption is probably unrealistic in the case of Pakistan; over the 1990s, enrolment ratios do not appear to have risen very much.² To reach American levels of education in three decades would require a dramatic expansion of education at all levels, training of massive numbers of school teachers and lecturers, and sharply increased levels of government expenditure on education. But this does not matter—the projection is for illustrative purposes only.

The results of the projections are shown in Figure 2, which compares Pakistan with China. The differences are striking, and stem mainly from the much stronger educational base China has presently achieved. Therefore if the status quo is maintained over the next three decades, the overall educational attainment of China's adult population will not be too bad. By contrast, mere maintenance of the status quo in Pakistan will leave the adult population seriously educationally disadvantaged throughout the projection period.

The more striking finding, however, is that even if the unrealistically rapid progress required to reach American levels of enrolment rates by 2030 is achieved, the legacy of the current low educational enrolment ratios would still be holding down the average educational attainment levels of the adult population of Pakistan. The proportions of the well educated, while they will be rising sharply in the younger age groups, will remain very low in much of the year-2030 workforce, particularly those aged above 40, and particularly for women (Figure 3). Overall, the proportions of the year-2030 working age population with different levels of education would be as follows:

	China (%)	Pakistan (%)
No Education	4	18
Primary School	25	17
Secondary School	56	36
Tertiary Education	14	29

²School enrolments at ages 5-15 (6-15 in 1996-97) rose from 54.1 percent in 1990-91 to 59.8 percent in 1996-97, according to figures in two major demographic surveys conducted in those years [NIPS (1992), Table 3.6; Hakim *et al.* (1998), Table 3.6a]. Other data suggest an actual fall in net primary school enrolment ratios between 1991 and 1999 [Kazi *et al.* (2001), Figure 1], the outcome of rising enrolment ratio for girls but a declining ratio for boys [Federal Bureau of Statistics 1998, cited in Sathar *et al.* (forthcoming), p. 2].

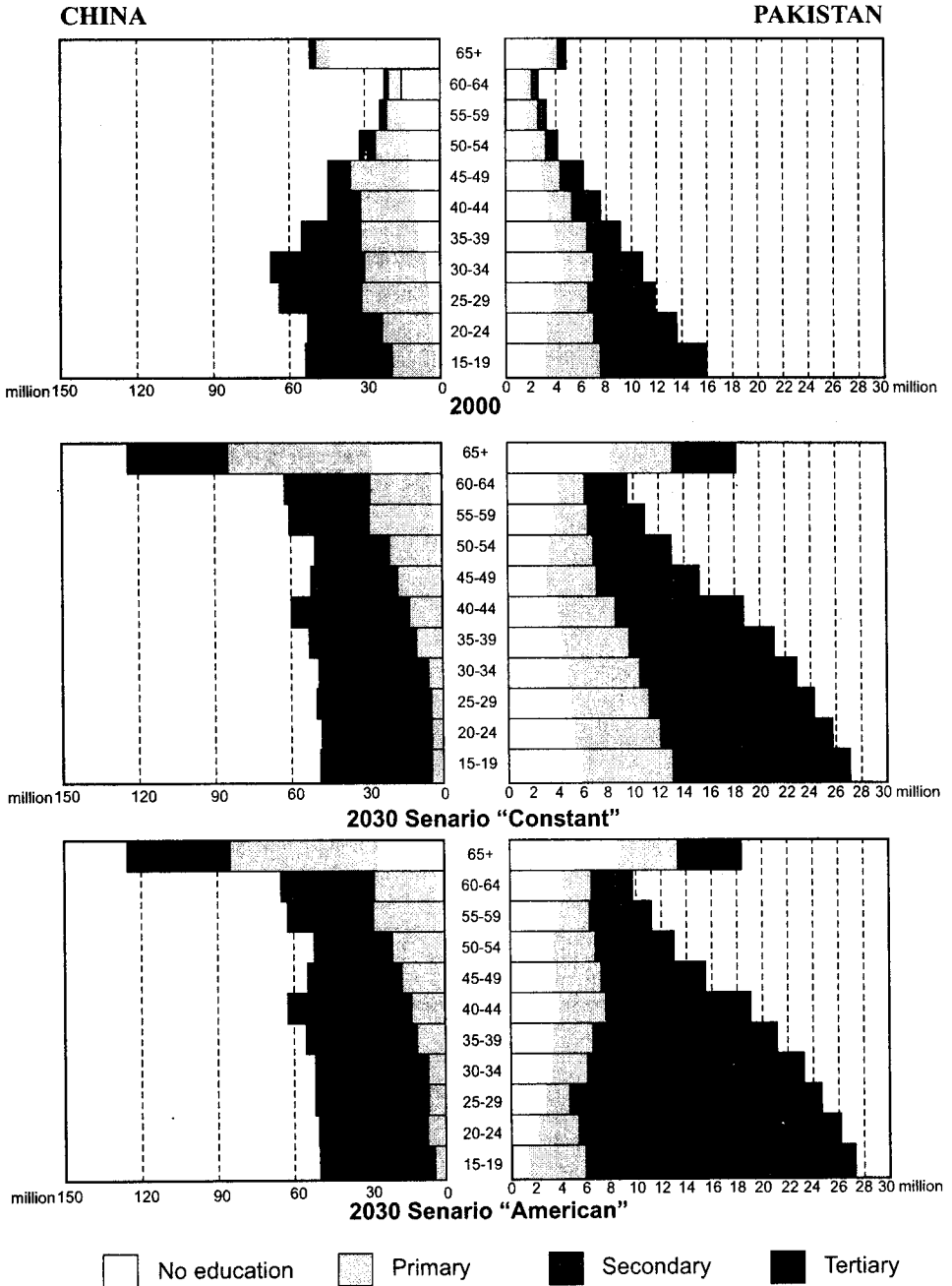


Fig. 2. Projection of Education Composition 2000–2030.

PAKISTAN

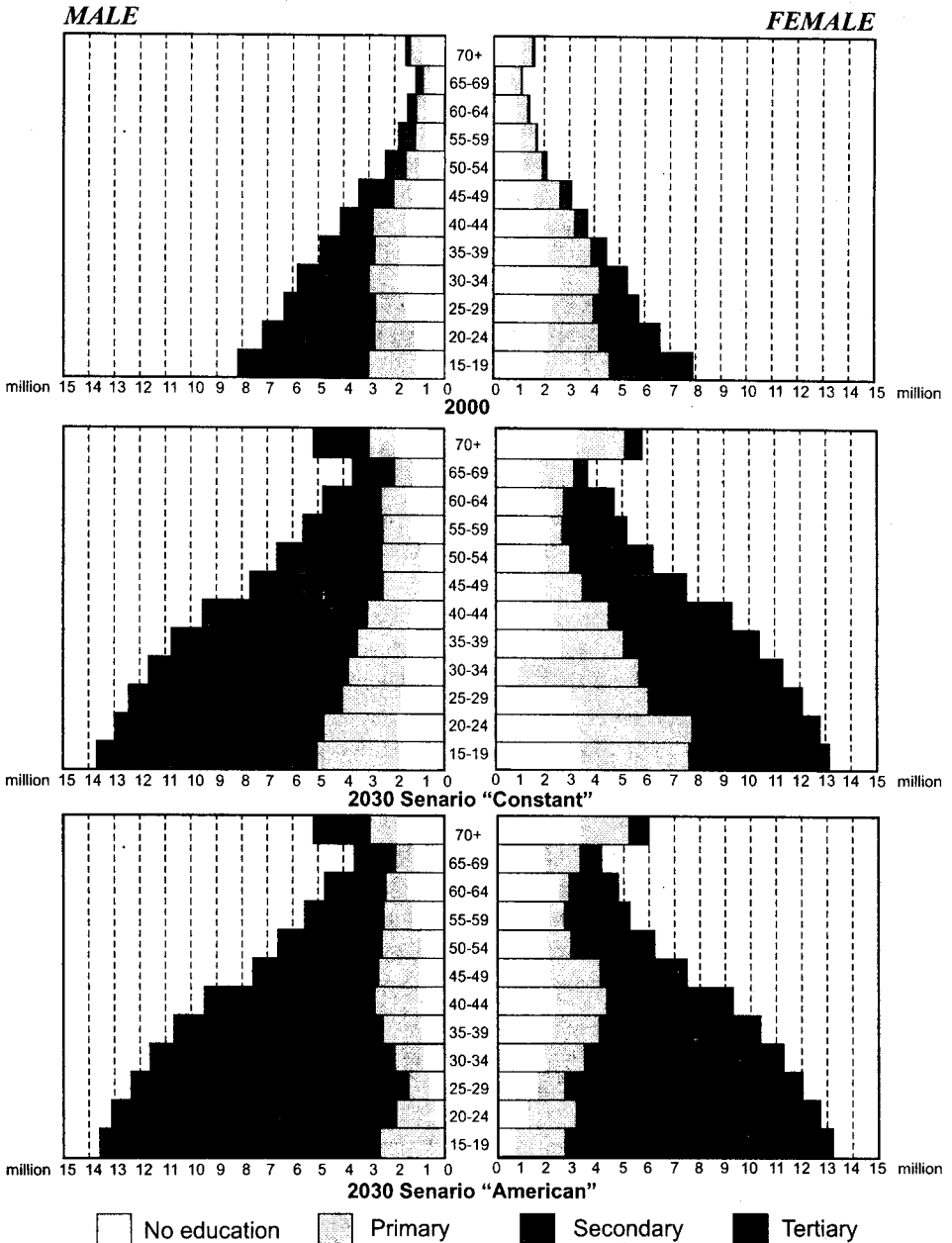


Fig. 3. Projection of Education Composition 2000–2030.

Interestingly, these projections reflect the fact that Pakistan at present exhibits a more heterogeneous pattern of educational experience than does China. Both the proportion of the uneducated and the proportion of the tertiary-educated are higher in Pakistan in the younger age groups,³ and this influences the distributions of educational attainment projected to 2030.⁴ The most striking aspect of the projection, however, is that 30 years from now, even if enormous strides are made in expanding all levels of the educational system, 35 percent of the adult population of Pakistan would still have either no education or primary school education (which includes religious education). In other words, the legacy of past under-investment in education cannot be quickly cast off.

TO WHAT EXTENT WILL PAKISTAN'S DEMOGRAPHIC SITUATION HINDER EDUCATIONAL ADVANCE?

Progress in raising the proportion of children moving to secondary schooling in Pakistan can be expected to be closely linked to progress in lowering fertility levels. There are mutually reinforcing feedbacks here [Jones (1990)]. Lowering of fertility makes it easier (after a small lag) to include higher proportions of children in the school system. Raising the educational level of young people—especially females—entering reproductive ages also tends to reduce fertility [Sathar and Mason (1993)].

Fertility in Pakistan did not decline much through the 1990s, whereas in Iran and Bangladesh, the 1990s was the period of very rapid declines in fertility (in Indonesia, it was the 1980s). Pakistan's population growth will therefore be much higher than that of the other countries. Even for the medium variant used by the United Nations in their projections, the fertility assumptions look extremely optimistic (a fall in TFR from 5 in 1995-2000 to 2.9 in 2015-20). For the low projection, TFR is assumed to reach 2.5 in that year. Yet even the low projection would give Pakistan much faster growth than the medium projection gives either Iran or Indonesia—almost a doubling in just 40 years, between 1995 and 2035.

There are enormous benefits to be gained by a continuation of the recent modest decline in fertility in Pakistan [Sathar and Casterline (1998)]. Some of these are clearly apparent in the size of the educational task. Population projections for Pakistan, Iran and Indonesia (see Figure 4) show that Iran and Indonesia are both experiencing declines in number of school-age children. But Pakistan is still facing an enormous task—a 60 percent growth in school-age children by 2025. The task

³It is possible that there is some inconsistency between the data used for Pakistan (projected from Hakim *et al.* (1998), (Table 3.5a) and the data from China. Strangely, the Chinese projections show no tertiary educated young people at ages 15-19.

⁴The higher proportions with tertiary education in Pakistan are also influenced by the younger age structure of the projected Pakistan population, meaning that the educational attainment of the adult population is more heavily weighted by the better-educated younger age groups.

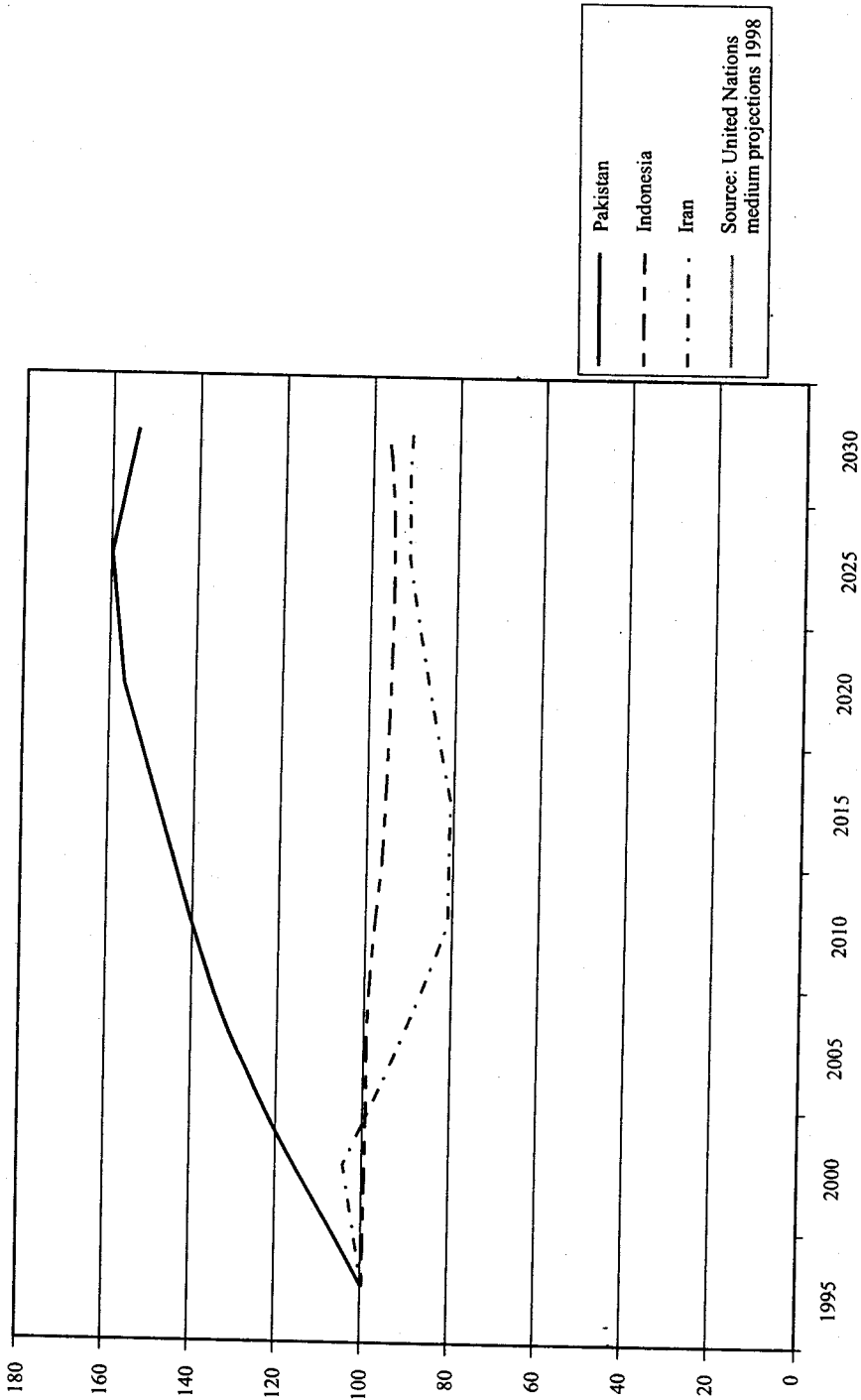


Fig. 4. Pakistan, Iran, Indonesia: Index of Growth of School-age Population (6-17), 1995=100.

facing Pakistan is even larger if it is kept in mind that it lags these other countries in enrolment ratios. As a telling example, if all three countries wished to achieve net enrolment ratios of 70 percent in the high school ages by the year 2010, this would not require any enrolment increase at all in Iran, a 24 percent increase in Indonesia, but a whopping 77 percent increase in Pakistan.⁵ The sharp differences stem from two sources: the rapid growth in numbers of school-age population in Pakistan, and its greater distance from achieving the 70 percent goal.

Much more could be said about demographic impacts on other aspects of human resource development and economic growth in Pakistan. Absorbing the growing labour force into productive employment will be a major challenge, particularly if educational levels of large numbers of labour force entrants remain low. In the era of globalisation, the Pakistani labour force needs to be internationally competitive. Yet despite facing problems of rapidly growing labour force, Pakistan also faces the problem of high dependency ratios—that is, the ratio of its dependent-age population to its working age population. These ratios are a third or a half as high again as those in countries of South-East Asia. And even these do not reflect the failure to utilise the female workforce in Pakistan. But this means Pakistan can reap great benefits in terms of falling dependency ratios if it can lower its fertility rate and bring more of its women into productive employment.

FINAL ASSESSMENT

Of all the challenges facing Pakistan, the need for human resource development appears to be one of the most crucial. Perhaps one indicator of the low priority given to human development is the poor state of Pakistan's educational statistics. These appear to be incomplete and conflicting from one source to another. Symbolic of the problem is the inclusion of Pakistan among relatively few countries showing a blank—indicating data not available—for net enrolment ratios in the World Bank's latest World Development Report. To make rapid progress in educational development in Pakistan will require action on a number of fronts: increased educational budgets, expansion of teacher training facilities, and building of new schools, to increase the capacity to accommodate more students; generation of increased demand for education; and support for programmes to lower fertility so that increasing numbers of children do not overwhelm the capacity to educate them. The generation of increased demand for education takes seven words to say, but major social and economic change to achieve. To ensure the appropriate emphasis on human resource development in Pakistan will require concerted action on the part of both government and civil society.

⁵The enrolment ratios on which these estimates are based are fairly rough, but the wide differences in required enrolment increases would certainly still hold if more refined estimates were available.

REFERENCES

- Barro, R. J. (1991) Economic Growth in a Cross-section of Countries. National Bureau of Economic Research, Cambridge. (NBER Working Paper No. 3120.)
- Barro, Robert J., and Xavier Sala-I-Martin (1995) *Economic Growth*. Cambridge: MIT Press.
- Behrman, Jere R., and Nancy Birdsall (1983) The Quality of Schooling: Quantity Alone is Misleading. *American Economic Review* 73:5 928–946.
- Bennett, Nicholas (1971) Economic Development and Equality of Educational Opportunity—the Development Fallacy and the Egalitarian Myth. Paper presented to the Fourth Session of the ECAFE Conference of Asian Economic Planners, 22 November–1 December, Bangkok.
- Bledsoe, Caroline H., John B. Casterline, Jennifer A. Johnson-Kuhn, and John G. Haaga (eds) (1999) *Critical Perspectives on Schooling and Fertility in the Developing World*. Washington, D. C.: National Research Council.
- Dhume, Sadanand (2000) The Trouble with Wealth. *Far Eastern Economic Review* (forthcoming).
- Federal Bureau of Statistics (1997) *PIHS, Pakistan Integrated Household Survey, Round 2, 1996-97*. Government of Pakistan, Islamabad.
- Hakim, Abdul, John Cleland, and Mansoor-ul-Hassan Bhatti (1998) *Pakistan Fertility and Family Planning Survey 1996-97*. Islamabad: National Institute of Population Studies.
- Jones, Gavin W. (1990) Population Dynamics and Educational and Health Planning. Background Papers for Training in Population, Human Resources and Development Planning No. 8, I.L.O., Geneva.
- Jones, Gavin W., Laila Nagib, Sumono, and Tri Handayani (1998) Issues in the Expansion of High School Education in Poor Regions: The Case of East Nusatenggara, Indonesia. *Bulletin of Indonesian Economic Studies* 34:3 59–84.
- Kazi, Shahnaz, Zareen Naqvi, and John Wall (2001) *Population, Poverty and Human Resource Development*. Washington, D. C.: The World Bank.
- Knodel, John, and Gavin W. Jones (1996) Post-Cairo Population Policy: Does Promoting Girls' Schooling Miss the Mark? *Population and Development Review* 22:4 683–702.
- Lucas, R. E. (1988) On the Mechanics of Economic Development. *Journal of Monetary Economics* 22: 3–42.
- Lutz, Wolfgang *et al.* (forthcoming) *The World's Changing Human Capital Stock: Population Forecasts by Educational Attainment*. Submitted for publication.
- National Institute of Population Studies and IRD/Macro International. *Pakistan Demographic and Health Survey 1990-1991*. Islamabad: National Institute of Population Studies.

- Ogawa, Naohiro, Gavin W. Jones, and Jeffrey G. Williamson (1993) Introduction. In Naohiro Ogawa, Gavin W. Jones and Jeffrey G. Williamson *Human Resources in Development Along the Asia-Pacific Rim*. Singapore: Oxford University Press.
- Ranis, Gustav, Frances Stewart, and Alejandro Ramirez (2000) Economic Growth and Human Development. *World Development* 28:2 197–219.
- Romer, P. A. (1986) Increasing Returns and Long-run Growth. *Journal of Political Economy* 94: 1002–37.
- Sathar, Zeba A, and John B. Casterline (1998) The Onset of Fertility Transition in Pakistan. *Population and Development Review* 24:4 773–796.
- Sathar, Zeba A., and Karen Oppenheim Mason (1993) How Female Education Affects Reproductive Behaviour in Urban Pakistan. *Asian and Pacific Population Forum* 6:4 93–103.
- Sathar, Zeba, Cynthia B. Lloyd, Cem Mete, and Minhaj ul Haque (forthcoming) Schooling Opportunities for Girls as a Stimulus for Fertility Change in Rural Pakistan. The Population Council. (Working Papers.)
- Saxena, Pradeep Kumar (1989) Human Capital Formation and Economic Development in India. In S. N. Singh *et al.* (eds) *Population Transition in India*. Vol. 1. Delhi: B. R. Publishing.
- Schultz, T. Paul (1993) Returns to Women's Education. In Elizabeth King and M. Anne Hill (eds) *Women's Education in Developing Countries: Barriers, Benefits and Policies*. Baltimore: Johns Hopkins University Press.
- Thomas, D. (1990) Intra-household Resource Allocation. An Inferential Approach. *Journal of Human Resources* 25:4 635–664.
- World Bank (2000) *World Development Report 2000-2001*. Oxford: Oxford University Press.

Comments

1.

It is difficult to provide an interesting discussion of a paper one really likes. This paper provides a well-balanced and nuanced description of the relationship between schooling, population growth and income growth and thus makes a valuable contribution to the assessment of human development policies. One of the themes of the paper is that household resources, geographic access to schools, the quality of the schools and a demand for schooled workers all matter with respect to the amount of schooling attainment one sees in an economy. This is in contrast to many policy prescriptions, which usually emphasise one specific barrier to schooling as if its removal alone were both necessary and sufficient to enhance schooling achievement. The most prevalent view is that the low quality of schools or lack of access to schools are key factors holding back schooling, but this ignores, for example, whether there is a well-functioning economy in which skills acquired in school are actually rewarded.

The paper also contains demographic projections that well illustrate the value of demographic methods. In this case they show that even under the most optimistic scenarios in which all conditions favourable to increased schooling are improved in Pakistan, because of demographic inertia the growth in average schooling attainment will be moderate. This does not mean of course that efforts should not be made to alter policies that affect schooling, only that expectations about the short-run should be dampened down.

I do have three brief comments on some of the details of the paper. First, I think that the discussion of the evidence concerning the non-market returns to increasing the schooling of women needs to be modified. The principal evidence is the pervasive finding that maternal schooling is positively related to children's schooling and health. What we do not know much about, however, is the mechanism through which this works, and this matters very much for predicting the consequences of a policy aimed at augmenting the schooling of women. One possibility is that mother's time spent with children is an important input in their human development, and that this time is more productive if the mother has more schooling. However, in many societies increased schooling for women has led to their greater labour force participation, with possible reductions in the time spend with children. Thus, it is not obvious what the net effect will be when women's schooling is increased.

There is some new evidence on the complex relationship between female schooling, female labour force participation and child outcomes. Behrman, Foster, Rosenzweig and Vashishtha (1999) show that in rural India after the onset of the “green revolution” rates of labour force participation of women outside the home remained at low levels and did not vary significantly with female schooling. In this setting, there was a strong relationship between maternal literacy and children’s study time and women who were literate commanded higher bride prices (paid lower dowry) in the marriage market in areas of India in which the returns to male schooling were higher—literate mothers were valuable “producers” of the human capital of boys. Thus, in a setting in which there are few opportunities for women to make use of their skills in the labour market, the returns to those skills are confined to the home and reflected in the next generation, but are nonetheless valuable as long as skills acquired by men (sons) are rewarded.

In contrast, in the United States where there is a strong positive relationship between labour force participation and schooling for women evidence based on mothers who are identical twins [Behrman and Rosenzweig (forthcoming)] suggests that once the fact that abilities are inherited is taken into account, increased maternal schooling is somewhat negatively related to children’s schooling attainment. The positive relationship one observes across generations in maternal schooling and child schooling in the United States thus appears to be due solely to the fact that high ability mothers tend to have high ability children. Increasing the schooling of women in the United States would therefore not raise the schooling level of the next generation, although it would have a return in the labour market. The same evidence suggests that increasing the schooling of fathers in the United States would increase the schooling attainment of children. The mechanism, though, is the time that mothers spend with children—the evidence suggests that the wives of more educated husbands tend to work less and spend more time with children. So, we cannot say what the consequences of increasing the schooling attainment of women would be in Pakistan—that depends on what happens in the labour market both in terms of the demand for skills and opportunities for the employment of women.

I like very much the section on regional inequality, particular its attention to both labour and capital mobility. Many analyses assume immobility of both factors. This assumption leads to policies that can lead to a substantial misallocation of resources—putting more resources in “depressed” areas in which the returns to such investments are low, for example. The analysis in the paper might be beneficial, however, from a clearer distinction between income, wealth and investment returns or opportunities. For example, the paper suggests that it might be desirable to concentrate investment in wealthier provinces. That could be, but only if such provinces have higher investment returns. In fact, provinces with high wealth might already have large capital stocks relative to labour and thus low returns to capital investment. Examining the spatial mobility of production factors and remittance

flows across areas and how mobility is affected by area-specific investments is an important area of research. Obviously, the limited province-specific data examined in the paper is just a preliminary look. The potential is great, however, with good data for a study of regional mobility.

The demographic projections contained in the last part of the paper are valuable, as I have noted, in showing the importance of demographic factors in assessing the future impact of policies. However, the analysis give the impression that high fertility is the cause of lower levels of schooling, and maybe even poverty. My own view is that there is no fundamental strong causal relationship between low levels of schooling levels, fertility and poverty. Rather, all three are symptoms of one very important, root factor—the lack of rewards from or returns to investments in skills in the economy. If the government creates an environment in which new ideas, technological innovation and capital investment can be rewarded so that the returns to schooling rise [Rosenzweig (1995)], households will respond by investing in skills and will also lower their family size in order to do so. Just as governments face higher expenses to improve schools and schooling infrastructure when there is a larger population of potential students, so too do households face a trade-off between numbers of children and investments in each child. The difference is that the evidence suggests that when households have incentives to invest in their children's skills, they can and do limit their fertility.

As emphasised in this paper achievements in human development and economic growth depend on many different policies, pertaining to school building, capital, labour markets and even international trade, as all of these factors affect the returns to investing in skills. This comprehensive, holistic analysis of human development and growth is the right basic approach and should form the basis for policy formulation in Pakistan and elsewhere.

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REFERENCES

- Behrman, Jere R., Andrew P. Foster, Mark R. Rosenzweig, and Prem Vashishtha (1999) Women's Schooling, Home Teaching, and Economic Growth. *Journal of Political Economy* 107:4 682–714.
- Behrman, Jere R., and Mark R. Rosenzweig (forthcoming) Does Increasing the Schooling of Women Increase the Schooling of the Next Generation? *American Economic Review*.
- Rosenzweig, Mark R. (1995) Why are There Returns to Schooling? *American Economic Review* 85:2 153–158.

2.

It is a privilege to be a discussant on Gavin Jones's paper on "Human Resources, Poverty, and Regional Development". I have admired Dr Jones research and I am at a disadvantage as a discussant because there is very little in his paper with which I disagree. In fact I whole heartily welcome the message he has carried forth today in his paper. But rather than merely congratulating him on an important and thought provoking piece I will try to the best of my ability to take some of his assertions forward, particularly by placing this lecture in the context of Pakistan's realities in 2001.

The problem as I see it is that Pakistan has clearly missed the opportunity, despite impressive economic growth up till the 80s to invest in human development. Our development policies were squarely based on the belief and expectation that economic growth was paramount and the benefits of economic well being would translate themselves into human resource development almost as an unquestionable sequence. THAT UNFORTUNATELY HAS NOT BEEN THE CASE. We all know the fall outs fairly well: low enrolment rates despite recent rises, IMR is still high and close to 90 per 1000 live births, and we still have a very uneducated labour force.

I remember in this very room, 8-9 years ago, 2 illustrious lectures by World Bank VP Lawrence Summers, and World Bank Director Nancy Birdsall the following years. Both echoed the same message all too clearly. Pakistan has under-invested in Human Resources, Human Development was a compelling necessity for Pakistan to sustain growth and also to ensure other important benefits such as lower fertility and mortality, which in turn would allow better investments in people. In plain terms it appears that Pakistan "bought" higher growth in the short run at the expense of development outcomes such as human development, political stability and well being in the long run.

The message which had been echoed with in Pakistan and by the Consortium of donors was accepted by GOP. The realisation was fairly profound, the policy instrument which came to be was the Social Action Programme starting in 1992 to redress the neglect of the social sectors. This programme is in its second phase at the moment. So the early 90s brought with them the radical change in government policy in the form of Human Development, raising public expenditures and protecting social sector spending. Education was the core of SAP particularly emphasising expansion of primary education.

While the donors have collectively promoted greater expenditures on education because of their expected positive outcomes on growth and other

development benefits, the problem was not so easily solvable. Basically I do not think (and that is perhaps the major difference in opinion between Gavin Jones and myself) that increasing educational enrolments is such a flexible policy lever. Let me step back briefly to education history. The politics of education is quite central to understand in the Pakistani contest. In 1947 we inherited a colonial tradition (where the elite was highly educated but the base was very small). The structure remains essentially unchanged as the base has not broadened ENOUGH. Urban elites have ensured high quality education for their children in private schools while the feudals in rural areas have had strong reasons to hinder the spread of education in their constituency because of its lessening their hold on availability of agricultural labour. But above all education and all Human Development has been sacrificed at the expense of huge defence outlays.

On the other hand what about private initiatives to supplement public education efforts? One problem has been that remaining a dominantly agricultural society and barring few spouts of demand of skilled labour in urban areas and the Middle East, the demand for a skilled labour force has been weak. There is still little educated youth boys (leave alone girls) can do in rural Pakistan.

In this context the SAP was the first jolt and Gavin Jones is reiterating the need to invest in human capital before its too late. The figures he provides us about catching up with enrolment rates in the next few decades are daunting if not seemingly impossible to achieve. But let us analyse a bit more why prospects are daunting? Pakistan clearly would like to move from a vicious cycle of poor human investments, low development, and economic returns to a virtuous circle of high investment in human capital, sustainable development etc. What is required of countries like Pakistan to move into an upward spiral from their current downwards spiral?

Is it enough to build new schools and increase the number of educational institutions? Here Gavin Jones poses an interesting choice: do we distribute resources evenly or do we locate them where there are better returns to schooling and deal with under served areas later? In one way this did happen with SAP which tended to favour the set up of schools (even though some of them were ghost schools) in Punjab, the already best endowed province. District differences are tremendous and reflect the heterogeneity in how different regions have different capacities to allocate and absorb resources. There are suggestions in the literature that devolution helps more effect distribution of resources towards human development. If this is so perhaps the devolution plan will help.

My other hunch is that schooling rates are better and schooling quality superior where the returns to schooling are perceived to be high. Urban/rural differences in Pakistan are a case in point but even within Punjab there are huge difference in enrolment rates in barani areas and between North and South Punjab. Regional patterns may represent different cultural affinities for development and for

education. Cultural differences may be more important than any other indices for education such as seen in the North-South divide in social indicators in neighbouring India.

But let us turn more seriously to the issue of differences in human resource development by class. The latest Pakistan Integrated Household Survey (1996-97) survey shows persistent inequalities by class, six years after the SAP. Just in the Punjab 49 percent of boys were fully immunised compared to 66 percent in the richest quintile; enrolment rates were correspondingly, 41 percent and 77 percent in the poorest and richest groups respectively. Inequalities by class and gender are even larger in the other provinces.

So the question is whether public policy by itself is sufficient to ensure that the poorer households are reached and that outcomes improve? Whereas public policy is aimed to ensure that there are more and better public services the question is whether the flow of resources is equitable and efficient and whether it reaches the poorest of the poor who it is intended to subsidise? I do not think public policy in a politically polarised country is generally able to achieve that aim and SAP was no exception.

Two points are important in this regard: Institutions determine the extent to which the poor can put pressure on government officials to allocate and use resources, but above all the delivery of public services to the poor suffers when they do not have leverage over policy-makers. In other words the poor suffer DISPROPORTIONATELY from failures and breakdown of governance and accountability.

Let me elaborate my point. Apart from the generalised increase in demand for education (which I think is the major change and opportunity for a turn around in social development), there has been a notable rise in demand for quality of education. In fact much of the rise and fall and differentials in enrolment rates reflect actual and perceived difference in quality of schools. While physical infrastructure, textbook availability is an important indicator of quality there are some which are critical. In a recent piece of research where we looked at quality indicators of rural schools we collected 30 or more indicators (such as pupil/teacher ration, experience of teachers, school infrastructure etc.) It was the indicator which measured the presence of the teacher on the day we visited the school which was most significant in explaining enrolments. Here private schools fare better. Even with less qualified less experienced teachers, private schools were preferred by parents because they demand the presence of a teacher more than in case of government schools.

Lastly, let me pick up and emphasise the point that human development alone is not enough, gender equality in human development is an absolute must. Gender inequalities in human development are far worse in Pakistan and Nepal than even the rest of Asia [HDR (2000)]. In Gustav Ranis and F. Stewart article quoted by G. Jones and where they discuss lopsided development, Pakistan is an outstanding case

of development which is lopsided towards economic development rather than human development. In particular they argue this is exacerbated by military expenditures and from gender discrimination.

The spin offs of redressing gender inequalities are huge. The loss extends from one generation to the next. As pointed out by Gavin Jones, a generation of educated mothers will turn around enrolments, it will change household expenditure and decisions in favour of reducing fertility and infant mortality and disparities by gender in children enrolment. The centrality of gender issues has struck me in every possible piece of research I have undertaken lately. For example in a study of investment in children and family building, the community level which triggered a rise in contraceptive prevalence (controlling for income, parental education, development) was the presence of a girls school not a boys school, nor total number of schools.

I think I will stop here I hope that the comments are helpful in taking the debate further from reiterating that we should invest in education to how we can do this given the complexities of trying to do this in the last 7-8 years. It is challenge for us and we are a decade wiser. We are faced with dwindling resources, but we have Sri Lanka and even Bangladesh in the region, which have a better record despite more adverse economic situation. So there are many lessons to draw from. We have finally started our fertility transition and despite all, we see a grounds well of demand for schooling expenditure for girls. So there is no reason why we cannot consider past failure carefully and move forward more vigorously.

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