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TERTIARY EDUCATION IN THE PHILIPPINES: Individual Rationality and Social Myopia

by

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A B S T R A C T

This paper analyzes the phenomena of large volumes of college enrolment, educated unemployment and "job mismatch". It reviews the structure of tertiary education in the Philippines, the investment behavior in schooling by individual households and the labor market in the Philippines. It concludes that the high rates of educated unemployment and job mismatch results from the expected response of household investment behaviour to the dualistic structure of the labor market. The solution to the problems, therefore, are to be found in industrial rather than education policy.

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Cayetano Paderanga, Jr.[1]

One of the most pressing problems of the Philippines today is unemployment. The number of unemployed workers has been estimated at 2,003 million as of October 1988, the most recent period for which the information is available. This is 8.5 percent out of a total labor force of 23.5 million. At the same time, the underemployment rate was measured at 35 percent for 1986 representing a worsening from 1956, when labor force surveys started, when unemployment was measured at 14 percent and the underemployment rate was 21 percent[2] (Table 1). Finding a long-term approach to employing its labor force is an urgent task for the country.

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[2]The rates are not directly comparable because 1956 figures use 10 to 65 years to be in the labor force and the past week as the reference period. After 1976 the labor force was redefined to include only those 15 to 65 years old and the past quarter as the reference period. More comparable but much earlier information for 1976 give the unemployment and underemployment rates as 5 percent and 10.6%, respectively.

Table 1

Labor Force, Employment, Underemployment and Unemployment: 1956-88

Year	LF	Employment	Underemployment	Unemployment	Employment	Underemployment	Unemployment
	(In Thousands)				(As Percentage of the LF)		
1956	8561	7702	1832	859	90.0	21.4	10.0
1957	8829	8199	...	630	92.9	...	7.1
1958	8976	8329	1921	647	92.8	21.4	7.2
1959	9116	8575	1614	540	94.1	17.7	5.9
1960	9116	8539	1996	577	93.7	21.9	6.3
1961	9713	9095	2388	618	93.6	24.5	6.4
1962	10266	9603	2413	662	93.5	23.5	6.5
1963	10233	9764	2855	469	95.4	27.9	4.6
1964	11296	10572	2937	724	93.6	26.0	6.4
1965	10764	10101	2486	663	93.8	23.1	6.2
1966	11757	10936	2681	821	93.0	22.8	7.0
1967	11776	10867	3062	909	92.3	26.0	7.7
1968	11371	10471	2797	900	92.1	24.6	7.9
1969	12046	11235	2289	811	93.3	19.0	6.7
1970	12297	11358	...	939	92.4	...	7.6
1971	13233	12534	1808	699	94.7	13.6	5.3
1972	13294	13217	1582	77	99.4	11.3	0.6
1973	13472	13262	1657	210	98.4	12.3	1.6
1974	15284	14479	1468	729	95.2	9.6	4.8
1975	15161	14517	1925	644	95.8	12.7	4.2
1976	16244	15427	1624	817	95.0	10.0	5.0
1977	15882	14334	2685	668	95.5	17.9	4.5
1978	16811	16181	3345	710	95.8	19.9	4.2
1979	16945	16233	...	712	95.8	...	4.2
1980	17388	16434	3565	874	95.6	20.6	5.0
1981	18422	17452	4483	970	94.7	23.9	5.3
1982	18473	17371	4711	1102	94.0	25.5	6.0
1983	20311	19212	6053	1099	94.6	29.8	4.4
1984	20969	19673	7633	1296	93.8	36.4	6.2
1985	21318	19801	4733	1517	92.9	22.2	7.1
1986	21570	20595	5524	2396	88.9	25.6	11.1
1987	22890	20795	5034	2175	90.9	22.0	9.1
1988	23506	21503	5547	2003	91.5	27.6	8.5

Sources: Canlas (1987), Table 7.
DOLE, Employment Report, 1988.
For underemployment rate: PSSH, series # 3-11 for 1956-62; Yearbook of Labor Statistics, 1973 for 1963-70; Paderanga (1988, Table 23) for 1971-80 and Employment Report, 1988 for 1981-87.

One feature of the Philippine employment problem is the large amount of educated unemployment. Of the unemployed, 40 percent have complete or incomplete tertiary education. The unemployment rate for those with college education is 2.7% (Table 2). This is not a recent phenomenon. For example, the data for 1976 show a similar level of under-utilization for highly educated workers. Yet, the influx of students into institutions of higher learning continues unabated. Since the second World War, the number of tertiary level schools has increased by 90.6% (Table 3) and enrolment has grown from 154,223 to 1,115,832, an increase of 86% (Table 4).

It would seem that the high level of unemployment for those with higher learning has not registered in the consciousness of students. Finding the roots of this problem is important because this is a potential point of dissatisfaction, dangerous for political stability and the continued expenditure, both public and private, in higher education is a heavy cost. Finally, the phenomenon may be manifestations of more deep-seated flaws in our pattern of development, with serious implications for public policy.

Policy Dilemma

In 1986 the problem of labor under-utilization was divided into two parts: conjunctural and structural (Alburo, et al: 11). The former could be eliminated with appropriate monetary and fiscal policies. The latter was the large residual of under-utilized labor traceable to the structure of the economy. Trying

Table 2

Number of Employed & Unemployed Persons By Highest Grade Completed:
1977-86
(In 000)

continued...

ear	Total	No Grade Completed	Elementary			High School			College			Not Reported
			Total	1st-5th grade	Grad.	Total	1st-3rd year	Grad.	Total	Under-grad	Grad	
976												
loyed	14238	943	7725	4173	3552	3017	1588	1429	2443	1217	1226	110
mployed	780	18	288	118	170	264	133	131	202	111	91	8
977												
loyed	14334	983	7698	4231	3467	3277	1663	1614	2291	1024	1267	85
mployed	666	17	260	112	148	225	113	112	163	93	70	3
978												
loyed	16118	1048	8549	4640	3909	3918	1998	1920	2545	1111	1434	59
mployed	693	21	270	112	158	222	108	114	176	107	69	3
loyed	16434	1051	8584	4601	3983	4020	2001	2019	2726	1195	1531	53
mployed	874	33	306	149	157	299	137	162	238	140	98	7
981												
loyed	17452	1051	9164	4850	4314	4271	2153	2118	2941	1304	1637	25
mployed	970	32	323	141	182	336	161	175	279	163	116	1

Table 2

Number of Employed & Unemployed Persons By Highest Grade Completed:
1977-86
(In 000)

concluded...

Year	Total	No Grade Completed	Elementary			High School			College			Not Report
			Total	1st-5th grade	Grad.	Total	1st-3rd year	Grad.	Total	Under-grad	Grad	
1982												
Employed	17371	945	8979	4717	4262	4344	2129	2215	3081	1402	1679	
Unemployed	1102	32	335	164	171	378	161	217	356	201	155	
1983												
Employed	19366	1078	9883	5171	4712	5035	2565	2470	3355	1558	1797	
Unemployed	1003	15	268	122	146	360	134	226	359	207	152	
1984												
Employed	19632	1056	9897	4979	4918	5192	2475	2717	3474	1573	1901	
Unemployed	1548	23	393	146	247	576	228	348	555	309	246	
1985												
Employed	19801	979	9859	5015	4844	5403	2469	2934	3554	1577	1977	
Unemployed	1517	16	330	131	199	621	204	417	551	296	255	
1986												
Employed	20595	1087	10191	5036	5155	5791	2650	3141	3596	1627	1969	
Unemployed	1472	25	327	128	199	529	193	336	588	286	302	

Source: BOLE, Yearbook of Labor Statistics, various issues.

Number of Public & Private Schools (Tertiary Level): SY 1945-46 to 1986-87

	Total	Public	Private
1945-46	110	5	105
1946-47	89	12	77
1947-48	225	12	213
1948-49	309	13	296
1949-50	377	14	363
1950-51	416	15	401
1951-52	426	15	411
1952-53	425	15	410
1953-54	405	16	389
1954-55	382	26	356
1955-56	379	28	351
1956-57	388	31	357
1957-58	279	38	241
1958-59	387	38	349
1959-60	407	41	366
1960-61	384	45	339
1961-62	408	43	365
1962-63	435	36	399
1963-64	470	36	434
1964-65	499	36	463
1965-66	527	87	440
1966-67	669	111	558
1967-68	715	47	668
1968-69	785	110	595
1969-70	689	94	595
1970-71	634	37	597
1971-72	591	37	554
1972-73	613	44	569
1973-74	628	44	584
1974-75	646	85	561
1975-76	754	126	628
1976-77	817	168	649
1977-78	938	229	709
1978-79	947	333	614
1979-80	997	290	707
1980-81	1016	294	722
1981-82	1038	316	722
1982-83	1063	324	739
1983-84	1157	319	838
1984-85	1175	359	816
1985-86	1078	293	785
1986-87	1169	351	818

Source: NEDA, Philippine Statistical Yearbook, 1986 and 1987.

Table 4

Enrolment In Government and Private Schools (Tertiary Education): SY 1954-55 to SY 1986-87

School Year	Tertiary		
	Total	Gov't	Priv
1954-55	154,233	...	154,233
1959-60	239,525	...	239,525
1964-65	381,439	...	381,439
1969-70	638,000	65,000	573,000
1970-71	681,000	67,000	584,000
1971-72	686,000	72,000	614,000
1972-73	743,000	76,000	667,000
1973-74	791,000	89,000	702,000
1974-75	712,000	98,000	614,000
1975-76	772,000	106,000	666,000
1976-77	799,000	114,000	685,000
1977-78	833,000	123,000	710,000
1978-79	1,129,000	152,000	977,000
1979-80	1,289,000	184,000	1,105,000
1980-81	1,254,000	185,000	1,069,000
1981-82	1,307,000	179,000	1,128,000
1982-83	1,349,000	194,000	1,155,000
1983-84	1,391,000	211,000	1,180,000
1984-85	1,504,000	230,000	1,274,000
1985-86	...	...	...
1986-87	1,115,032	...	...

Sources: NEDA, Philippine Statistical Yearbook, 1974 and 1988.
DECS, Philippine Education Indicators, 1965-85.

to climb out of the recession of 1984 and 1985, the government could go for a "quick fix" that would immediately solve conjunctural labor under-utilization. However, this would increase the cost of subsequent industrial restructuring in order to solve structural under-utilization. The alternative was to start modifying the industrial structure which would require more deliberate moves and, therefore, slower resuscitation of industries. This would avoid the extra cost of reviving industries that would disappear with more appropriate policies anyway.

The economic recovery in 1987 and 1988 decreased the open unemployment rate from 11.1% in 1986 to 8.5% at the end of 1988. During that period, underemployment remained high, fluctuating between 26% and 24% (Table 1). The remaining high levels of open unemployment indicated a major portion of the employment problem to be structural. The pattern of educated labor unemployment corroborate this inference.

In the following sections, the labor utilization problem for educated labor and its relationship to tertiary education will be explored. Section 2 reviews the various concepts of the labor force and labor utilization. Section 3 examines the household model of investment in educations, labor supply and job search. Section 4 summarizes these various strands into a picture of the interrelationship between tertiary education and the employment of skilled labor in the Philippines. Section 5, contains some suggestions for policy.

I. PRODUCTION AND EMPLOYMENT OF TERTIARY GRADUATES

A. The Tertiary Education Sector[3]

The tertiary education sector in the Philippines is dominated by privately managed, privately funded institutions, although public institutions have had relatively rapid growth in the past fifteen years. Because of this, the sector supplies a large "quantity" of education at low cost to the public treasury. Almost all secondary school graduates enter some kind of post-secondary programs and about 35% of the age cohort is in college, approximately the same rate as in most European countries and Japan. In contrast to many other developing countries, the participation rate is as high for females as for males. Females constitute over 50% of almost all college and university enrollments.

One of the system's main strengths is its diversity in content, quality and price, but most programs are job-oriented, with heavy concentration in business, engineering, teaching or nursing. Both non-degree courses of one or two years' duration and four-year bachelors' degree courses are available, with curricula offering transition form the former to the latter if students are able to pass the NCEE. Part-time as well as full-time programs are offered and the system provides easy reentry, second chances and second choices. As a result, the system offers a wide array of choices to students with varying backgrounds, preferences and financing capabilities. It is flexible enough, for example, to allow a student with little means to

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[3]Largely based on World Bank (1988).

acquire an inexpensive college degree, work at a low-paying job, and then enrol part-time in his preferred profession.

The weaknesses are related to its advantages, that is to its being mostly privately funded. Quantity is often offered at the expense of quality: college faculty are poorly paid and trained, only a minority having any graduate training. Libraries and laboratories are non-existent or ill-equipped in most institutions and expensive products such as science education, graduate training and research are only minimally provided. It also means that potential students from low-income families cannot afford higher education and those who can attend the lowest-cost, lowest-quality institutions.

As mentioned earlier, the system is dominated by the private sector. Eighty-five percent of all college and university students attend private institutions which are run with virtually no subsidy from the government (Table 5). Both for-profit and nonprofit private schools are permitted. And the paucity of slots in public educational institutions combined with a high private rate of return, led to an excess demand for higher education, making it a profitable industry for private investment during much of the period since independence.

The rest of this section presents, first, the differences between the public and private sectors in such variables as size, product mix, cost, quality, price, student background and future labor market experience.

The Private Sector

Table 5

Enrolment in Public and Private Tertiary Education:
SY 1965-66 to 1984-85
(In 000s)

Year	Public		Private		Total
	Number	Percent	Number	Percent	
1965-66	59	11.20	468	88.80	527
1966-67	61	11.01	493	88.99	554
1967-68	62	10.32	539	89.68	601
1968-69	62	9.89	565	90.11	627
1969-70	65	10.19	573	89.81	638
1970-71	67	10.29	584	89.71	651
1971-72	72	10.50	614	89.50	686
1972-73	76	10.23	667	89.77	743
1973-74	89	11.25	702	88.75	791
1974-75	98	13.76	614	86.24	712
1975-76	106	13.73	666	86.27	772
1976-77	114	14.27	685	85.73	799
1977-78	123	14.77	710	85.23	833
1978-79	152	13.46	977	86.54	1129
1979-80	184	15.22	1025	84.78	1209
1980-81	185	14.73	1069	85.25	1254
1981-82	179	13.78	1120	86.30	1387
1982-83	194	14.38	1155	85.62	1349
1983-84	211	15.17	1180	84.83	1391
1984-85	230	15.29	1274	84.71	1504

NOTE: No data available for SY 1985-86; for SY 1986-87 the total enrolment is 1,135,832.

Source: MECS, Philippine Education Indicators, 1965-85.

There are two types of private institutions, nonprofit and for-profit. Nonprofit schools are not permitted to distribute dividends or sell shares of ownerships. They are predominantly religious in origin but a substantial group of secular non-profit institutions exists. For-profits are permitted to distribute dividends (but not all avail themselves of this opportunity and in many cases the profits are small). In the Philippines, the non-profit institutions are called non-stock corporations while the for-profits are called stock corporations (whose shares are sometimes traded on the stock exchange) or proprietary businesses, and this terminology will be adopted in the rest of this chapter.

Because they largely depend on tuition and fees, private schools are vocation-oriented. Over 90% of all enrollments are in vocation-oriented programs. Most popular are business and engineering, which together attract over half the student body. Only 4% of all students major in the humanities, social science, natural science and mathematics. Moreover, many private schools teach engineering chiefly, as a theoretical subject. Engineering graduates are perceived to be generally book-oriented, attuned more to solving textbook rather than practical problems.

Faculty salaries are low, with most faculty members receiving less than the national poverty line[4]. Although firms information is not available, data from the Private Education Retirement Annuity Association and discussions by World Bank authors

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[4]The national poverty line measures the needs of a family which, typically, includes more than one income earner.

with several institutions indicate that monthly salaries range between ₱1,400 and ₱5,000 with most clustered below ₱2,000. Most faculty members (71%) have only a bachelor's degree[5]. There are very few PhD's in private schools and a large portion of these are graduate degrees in education. The very low rate of graduate training for faculty members is related to their low salaries and the absence of subsidies to graduate programs. Faculty members will acquire costly graduate degrees only if their training is subsidized or if a sufficient wage premium is paid to cover the costs. Both of these are minuscule absent in the private sector.

Labor costs are lowered further by hiring part-time faculty. They are cheaper because they typically paid less per course and are not entitled to fringe benefits. The student faculty ration is also higher in proprietary institutions than in the public sector, as is the student-administrative staff ration, with the non-stock institutions in between. Since size has been constrained by government regulations, heavy teaching loads (20-30 hours per week in the private sector) are used to attain their high faculty-student ratio. These two factors contribute to less commitment by the faculty to their students, very little research and further training.

Vertical integration is another characteristic of higher education in the Philippines (Table 6). Two-thirds of all tertiary schools (which are predominantly private) have affiliat-

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[5] This is for the whole tertiary education system. Only 4% have a PhD and these are heavily concentrated at the University of the Philippines and a few other chartered state institutions.

Table 6

Vertical Integration

	Number of IHLs offering:					
	HS /a and nondegree voc-tech	Nondegree voc-tech only	Elem. and HS and BS/BA b/	HS and BS/BA b/	BS/BA only /c	Total
Public						
Chartered	8	8	29	42	7	78
Nonchartered	66	19	5	74	18	182
Total Public	66	19	34	116	25	260
	(25)	(7)	(13)	(45)	(10)	
Private						
Catholic	1	4	107	36	28	176
Protestant	3	0	13	7	5	28
Secular nonprofit	7	40	34	28	28	129
Total Nonprofit	11	44	154	63	61	333
	(3)	(13)	(46)	(19)	(18)	
Stock	11	62	59	53	40	225
Proprietary	3	77	23	18	18	139
Total For-Profit	14	139	82	71	58	364
	(4)	(38)	(23)	(20)	(16)	
Total Private	25	83	236	134	119	697
	(4)	(26)	(34)	(19)	(17)	
GRAND TOTAL	91	282	270	250	144	957
	(10)	(21)	(28)	(26)	(15)	

a/ HS = high school.
b/ Virtually all of these schools also offer nondegree vocational technical courses.
c/ Most of these IHLs also offer graduate degree programs.

Note: Figures in parentheses are row percentages.

Source: World Bank (December 1988), Annex Tabble A4.7.

ed elementary and secondary schools which share their buildings and facilities, and most others (mainly proprietary institutions) offer only non-degree post-secondary vocational courses. Only 15% of the institutions are degree-granting schools with no affiliated schools.

Through the various methods described above, private schools, especially proprietary institutions, lower their costs. Additional economies are achieved with respect to supplies and other current expenditures. As a result, labor cost per student is only one third as high in private as in public tertiary schools, while current cost per student is only 40% as high and can be covered by the tuition fee which averaged ₱1,415 per year (Table 7).

The Public Sector

The public sector is subdivided into several categories: the University of the Philippines (UP) established in 1908 to provide high quality higher education to a select few and, since expanded, to become a system with nine autonomous campuses; the more recently chartered public institutions established as a political response to the popular demand for mass higher education with a statutory base that gives them considerable autonomy; and the unchartered colleges and community colleges that are directly supervised by Department of Education, Culture and Sports (DECS).

Within the public sector, there also exists a diversity in programs. The University of the Philippines has a large graduate

component (21%) while the unchartered institutions have a heavy non-degree component (40%). This is consistent with the origin and intended consumers of these institutions. UP was established as a high-quality selective university while the newer public colleges are nonselective, catering to a mass rather than an elite clientele. The evidence points to a lesser ability by public tertiary schools compared to their private counterparts to produce graduates at low cost (Table 7). While the private sector dominates higher education, 20% of all enrollments are in the public sector which spend about half of all funds spent in tertiary education (Table 8).

All studies show large variations within the public sector. The University of the Philippines is at the top of the hierarchy, enrolling 10% of the students and receiving one-third of the total budget of the entire system with an average operating expenditure per student of ₱21,000 in 1986. At the lower end, several schools spend less than one-tenth of this amount. The newer state colleges tend to spend much less per student, take in a student body with from poorer family backgrounds and lower NCEE scores and their graduates tend to earn less in the future (Arcelo and Sanyal, 1987).

Many state colleges have substantial secondary programs, often sharing buildings and facilities with college courses. Overall, 32% of their enrollment are at the elementary and secondary levels. In many instances, this exceeds 50%. While this many enable lower costs through fuller utilization of facilities, it may also downgrade the quality of higher educa-

Table 7

Expenditures, Tuition And Assets Per
Tertiary Student, 1984-85

	(1) Expenditures per student on personnel	(2) Total current expenditures per student	(3) Capital outlays per student	(4) Total assets per student: Manila	(5) Total assets per student: outside Manila	(6) Tuition per student	(7) Tuition - expenditures per student
Public							
Chartered	2,618	3,627	988	n.a.	n.a.	579	0.2
Unchartered	2,728	3,896	875	n.a.	n.a.	208	0.1
Total Public	2,538	3,492	899	n.a.	n.a.	478	0.1
Private							
Sectarian nonprofit	1,135	2,885	934	2,788	1,288	1,842	0.9
Secular nonprofit	671	1,168	688	1,188	2,188	1,164	1.8
For-profit	688	1,128	388	1,388	388	1,245	1.1
Total Private	839	1,418	683	1,688	988	1,418	1.6
GRAND TOTAL	1,898	1,748	649	n.a.	n.a.	1,278	0.7

n.a. = not available.

Source: World Bank, (December 1988), Annex Table A.4.11.

Table 8

Current Expenditures On Higher Education By Source, 1987
(in billion pesos)

	Income of IHLs				Books, supplies, transport expenditures by students	Total
	From gov't.	From tuition	Other sources	Total income		
Public IHLs	2.2	0.2	0.1	2.5	0.5	3.0
Private IHLs	-	2.3	0.2	2.5	2.3	4.8
Total	2.2	2.5	0.3	5.0	2.8	7.8

Source: World Bank (December 1988), Annex Table A.4.14.

tion. These state colleges also tend to be small, many with fewer than 1,000 students. While economies of scale have not been investigated for public schools, evidence from selected private schools in Metro Manila suggests that colleges with this number of students may be suboptimal[6].

Comparing the two sectors

The differences between the two tertiary education sectors can be briefly summarized as follows: the private sector through low salaries, use of part-timers and teaching loads resulting in high student-faculty ratios produce graduates at much lower cost than the public sector. The latter, at least among its higher quality institutions, concentrate on the basic courses such as the humanities and physical sciences more than private institutions who tend to emphasize vocation-oriented courses.

B. Tertiary Graduates and their employment

Two indicators often used to measure graduates' performance in the labor market are the gross rate of unemployment and the rate of "mismatch" between their training and their actual work or profession. The former demonstrates their general acceptability to the final "users" of education, the employers[7]. A secular, persistent trend can be discerned even with complica-

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[6] World Bank (1988): 90.

[7] This uses a narrow description of the benefits from education and is used to portray what some sectors consider to be the main use of formal schooling.

tions by different phases of the business cycle. Mismatch, for some, denotes the ability of the education sector to respond to demands by the labor market. The volume of mismatches is taken as a sign that the educational system is not training the right kinds of workers. There is also waste in form of unused training or further training of the worker in his new field.

The data on employment of tertiary graduates show that the level of unemployment has not changed much over the last decade and a half (Table 2). Data on the number of tertiary graduates for selected years since 1970 to 1987, the year with the most recent data, show that the labor market is absorbing only a small portion of the additional workers with college degrees and beyond (Table 9).

The other measure of the educational system's adequacy in responding to the labor market is the amount of "mismatch" between the training and actual occupation of workers. Domingo (1974) indicates that in some occupations the percentage of workers with training geared for "higher" occupations (under-utilized) plus workers with training geared for "lower" occupations (over-utilized) can be as high as 86%. This is true for proprietors and managers and farmers, for example. The fact that miners and quarrymen have a total of 100% over and under-utilized may be due to absence of specific training for this occupation points to the weakness of this kind of analysis but that will be discussed later.

Table 9

Ratio Of Change In Employment By Highest Grade Completed To Total Tertiary Graduates: SY 1977-1978 to SY 1986-1987

	Tertiary Graduates	Additional Employment	Change in employment/ Tertiary graduates
1977-78	103,625	167,000	1.61
1979-80	111,884	...	
1981-82	163,577	42,000	0.26
1982-83	167,604	118,000	0.71
1983-84	164,831	104,000	0.63
1984-85	254,899	76,000	0.30
1986-87	191,362	189,000	0.99

Sources of basic data: NEDA, Philippine Statistical Yearbook, various issues.
DECS, Bureau of Higher Education.

Table 10

Classification Of Male Household Heads By Occupation
By Place Of Residence And Utilization Using Education-
Occupation Compatability Test

OCCUPATIONAL GROUPS	Utilization: Utilized: U+	Utilized: U	Underutilized: -U	Total (N)	Total %
	%	%	%		
URBAN					
Professionals	11.1	82.2	6.7	(540)	100.0
Gov't Off. & Admin.	22.2	77.8	-	(36)	100.0
Proprietors, Managers	42.1	13.5	44.4	(332)	100.0
Clerical Workers	39.6	14.8	45.6	(676)	100.0
Sales	53.3	6.5	40.2	(368)	100.0
Transport	48.2	10.6	41.2	(688)	100.0
Craftsmen	41.3	10.6	48.1	(1,396)	100.0
Manual Workers	55.1	2.0	42.9	(196)	100.0
Service Workers	28.7	29.9	41.5	(636)	100.0
Miners & Quarrymen	50.0	-	50.0	(24)	100.0
Farmers	52.1	13.8	34.2	(968)	100.0
Total	48.7	22.0	37.3	(6,864)	100.0
RURAL					
Professionals	-	100.0	-	(192)	100.0
Gov't Off. & Admin.	20.0	80.0	-	(60)	100.0
Proprietors, Managers	34.8	30.4	34.8	(276)	100.0
Clerical Workers	28.6	14.3	57.1	(252)	100.0
Sales	33.3	22.2	44.4	(324)	100.0
Transport	36.1	30.6	33.3	(432)	100.0
Craftsmen	47.5	16.2	36.2	(960)	100.0
Manual Workers	47.6	4.8	47.6	(252)	100.0
Service Workers	40.7	7.4	51.8	(324)	100.0
Miners & Quarrymen	37.5	12.5	50.0	(96)	100.0
Farmers	41.7	19.0	39.3	(14,244)	100.0
Total	40.9	20.0	39.1	(17,412)	100.0

Source: Domingo (April 1974), Table IV.62.

Another published[8] study bearing on the issue of mismatch is Arcelo and Sanyal (1987). In that study, they found out that at least a third of all graduates obtain work outside their fields. However, this same study arrived at the following conclusions:

a) the students' expectations with respect to income, employment, waiting period and returns to education were impressively realistic. Their experiences in the labor market also confirmed expectations. This realism is indicative of the merit and effectiveness of an informal word-of-mouth communication network.

b) the fact that the waiting period is much shorter (only two months in HELMS II compared to 6.3 months in HELMS I 1978 survey), that income and the return to education are higher show that there have been some improvements in the labor market situation for college graduates.

c) The empirical data do not lend support to the much talked about problem of the educated unemployed and the frustration of graduates. If graduates are the source of social discontent, it is not because of the economic variables discussed here, viz. employment, income and other related variables. The reason must lie outside this domain.

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[8] Some tracer studies on some graduates of various programs may have been done or in process by some agencies in connection with funding requirements but these are not yet readily available or apply to other skill classes. For example, the tracer studies made by the National Manpower and Youth Council (NMYC) refer to graduates of their post-secondary vocational programs.

II. Concepts of Labor Absorption and Unemployment

Domingo (1974) offers a proposed expansion of current labor force concepts and a tentative measurement of under and over utilization which provides a convenient framework for discussing some aspects of tertiary education outcomes. Recent literature have substantially qualified the applicability of orthodox employment concepts developed for more formal settings. Hauser (1972) traces the history of the terms "work" and employment in data series on the labor force. He summarizes some of the more serious misgivings about the "modern approach" to the measurement of the labor force. He ends with a proposed classification which considers peculiarities of work in developing countries which was further refined by Domingo (1974) for the Philippines.

Under Domingo's classification, the Philippine labor force could be classified according to the following scheme.[9]

	Total labor force	100%
I.	Not in the labor force	
II.	In the labor force	LFPR [10]%
	A. Utilized Adequately	
	B. Utilized Inadequately	
	a) By unemployment	U [11]

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[9] Adapted from Domingo (1974), p. 16.

[10] LFPR - labor force participation rate.

[11] U - unemployment rate.

b) By hours of work

c) by income

d) by mismatched occupation

The test for the totally unemployed follows the current method of including those without work and actively seeking work. The test for labor under-utilization according to income is by comparison with a level of income determined

(a) by reference to some fixed level of real income,[12] in which case "development over time is judged with reference to the increase or decrease in the proportion of low income workers over time."[13], or

(b) by using a cut-off point for a specific portion (say lowest 30%) belonging to the lower end of the empirical income distribution. An increase or decrease in the cut-off is then indicative of improvement or worsening.[14]

Underemployment by hours of work distinguishes two types of underemployment: visible underemployment where a worker works less than the legal full-time number hours and want more work; and invisible underemployment, where a worker works full time and still wants more work. In the literature, the number of these visibly and invisibly underemployed (according to work hours) are adjusted to a full-time equivalent figure. Finally, under-

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[12] perhaps with the use of a reference basket of basic commodities and services.

[13] Domingo (1974), p. 76.

[14] Ibid, p. 77.

utilization by mismatched occupation is based on whether an individual's occupation "matches" his education. Domingo (1974), using an empirically derived matrix of education and occupation categories, concludes that in 1968 about 40% of Filipino workers were under-utilized according to mismatched occupation with the rate as high as 80% in some occupations e.g. general clerks (Table 11).

III. Household Schooling Decisions

The preceding discussion provides a convenient framework for discussing the tertiary education sector's accomplishments, especially it relates to the labor market success for its graduates. As a preliminary step, we explore a model for the individual or household's decision to enter and proceed with formal studies.

In discussing household choices on how much to invest on formal education for a particular child, a decision model coming from human capital research which is very closely associated with the early economics of education is often used. The basic approach of these early studies (e.g. Becker, 1967, and Weisbrod, 1972) is to treat the schooling decision as an economic investment decision. Studies in recent years have sufficiently expanded the definitions of benefits and costs which are explicitly considered as to justify the classification of the early human capital models as a subdivision of this overall literature. However, the general approach of thinking of it as a choice

Table II
Classification Of Urban Workers Utilization
And By Occupation

Occupation	Utilized %	Under-Utilized %	Total (N)	Total %
Medical Workers	100.0	-	(48)	100.0
Professors	100.0	-	(8)	100.0
Social Scientists	100.0	-	(66)	100.0
Engineering	100.0	-	(88)	100.0
Lawyers	100.0	-	(72)	100.0
Government Officials	100.0	-	(36)	100.0
Natural Scientists	100.0	-	(12)	100.0
Instructors	100.0	-	(172)	100.0
Bookkeepers	75.0	25.0	(96)	100.0
Other Nat. Scientists	50.0	50.0	(32)	100.0
General Clerks	45.4	54.6	(344)	100.0
Stenographers	61.1	38.9	(72)	100.0
Protective Services	60.0	40.0	(300)	100.0
Other Professions	58.3	41.7	(48)	100.0
Proprietors	55.6	44.4	(532)	100.0
Wholesale Salesmen	52.2	47.8	(92)	100.0
Clerical & Related in Transp.	44.0	56.0	(100)	100.0
Skilled Craftsmen	92.9	7.1	(56)	100.0
Craftsmen in Const. & Maint.	49.3	50.7	(276)	100.0
Cutters, Sewers	61.6	39.2	(136)	100.0
Spinners, Weavers	56.0	50.0	(24)	100.0
Retail Salesmen	62.3	37.7	(276)	100.0
Locomotive, Shipworkers	50.0	50.0	(56)	100.0
Workers in Non-Prod. Mech.	70.6	29.4	(68)	100.0
Service-Waiters	61.7	38.3	(198)	100.0
Drivers	59.6	40.4	(64)	100.0
Collectors, Transp. & Com.	81.2	18.8	(64)	100.0
Service in Priv. HH	66.7	33.3	(12)	100.0
Carpenters	70.7	29.3	(300)	100.0
Mechanics & Metal Workers	52.1	47.9	(284)	100.0
Other Craftsmen	55.1	44.9	(196)	100.0
Food & Copra Workers	64.3	35.7	(56)	100.0
Loggers	66.7	33.3	(24)	100.0
Barbers, Beauticians	42.1	57.9	(76)	100.0
Manual Workers & Laborers	57.1	42.9	(196)	100.0
Miners, Quarrymen	50.0	50.0	(24)	100.0
Farm Owners	72.0	28.0	(328)	100.0
Farm Managers	50.0	50.0	(8)	100.0
Farm Part-Owners	80.0	20.0	(48)	100.0
Fishermen	55.6	44.4	(216)	100.0
Farm Tenants	63.3	36.7	(316)	100.0
Farm Laborers	85.7	14.3	(29)	100.0
TOTAL	62.7	37.3	(6,864)	100.0

Source: Domingo, (1974) Table IV.66.

Table 12

Waiting Period After Actively Looking For Work By Type Of Colleges

	UP			UP		
	N	%	C.P.	N	%	C.P.
Less than 1 month	113	54.6	54.6	40	39.2	39.2
1-2 months	64	30.9	85.5	34	33.3	72.5
3-4 months	14	6.8	92.3	16	15.7	88.2
5-6 months	14	6.8	99.1	7	6.9	95.1
7-12 months	2	0.9	100.0	6	4.9	100.0
1-2 years	0	-				

	Protestants			Proprietary		
	N	%	C.P.	N	%	C.P.
Less than 1 month	10	29.4	29.4	66	28.2	28.2
1-2 months	7	20.6	50.0	88	37.6	65.8
3-4 months	7	20.6	70.6	33	14.1	79.9
5-6 months	4	11.8	82.4	25	10.7	90.6
7-12 months	5	14.7	97.1	19	8.1	98.7
1-2 years	1	2.9	100.0			

	Other State Colleges, Arts and Trades & Gov't Colleges		
	N	%	C.P.
Less than 1 month	32	46.38	46.38
1-2 months	20	28.98	75.36
3-4 months	6	8.70	84.06
5-6 months	4	5.80	89.86
7-12 months	7	10.14	100.00

C.P. = Cumulative Percentage

Source: Arcelo and Sanyal, (1987) Table 3.23.

decided by balancing discounted benefits and costs in a capital rationing framework groups these kinds of studies as one strand of work. The main competition to this broad framework, is the "radical approach" which uses a structural model and views the educational system and its complementary institutions like the labor market as instruments by which a dominant group maintains its hold over society.[15] The former model is used in this paper to help elucidate some of the labor market accomplishment of the tertiary education sector.

The schooling investment model starts by examining the benefits received by individuals and households. Benefits from schooling may be classified according to the timing of the benefits relative to the period when the investments are made, into consumption and capital benefits or, according to whether the benefits are pecuniary benefits or not. Consumption benefits are those which are bought for their own benefits and often occur in the period when the expenditures are made while capital benefits are those which lead to increase a person's ability to produce output. These normally occur in a period later than when the expenditure is made.[16] Pecuniary benefits refer to an increase in financial inflow such as wages or to a decrease in financial outflows, while non-pecuniary benefits do not entail financial flows. An example of non-pecuniary benefits may be

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[15] See for example Bowles and Gintis (1975).

[16] More accurately, consumption expenditures are those made in order to get immediate benefits; capital expenditures are incurred with the aim of increasing a household's ability to earn income.

heightened ability to enjoy books or plays. Overlaps between these two methods of classifying may lead to other sub-classifications which are not discussed.

The benefits gives rise to the following formulation of benefits from schooling at a certain period, t.

(1) $$V_t = C_t + W_t$$

V_t = value of schooling at time t

C_t = consumption benefits

W_t = additional income due to schooling

Ct may involve pecuniary and non-pecuniary benefits. Wt may occur in a manner that is not easy to quantify financially as when a person's earning capacity in school may increase not because of skills learned but through access to a network connected with certain elite schools.[17]

The increase in income generating capacity can be placed in a framework that incorporates all sources of earning power. This will also place the role of formal schooling in career development in a more realistic perspective. Three major types of training are recognized. First is training acquired through formal education. A person normally come to his job with this completed, although ways of acquiring schooling part-time and on

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[17] However, this may be difficult to disentangle from human capital increments even if a researcher desires. Whether there is real output growth for society as a whole is not discussed.

official company leaves are available. Second are short-term training programs.

Companies often finance these programs although workers sometimes share in the cost. Finally, there is training that is acquired on the job either informally or through organized work arrangements. One example of the latter is the almost ritualized assignment of executive trainees to all departments for short periods of time.

The skills acquired by a worker through the programs mentioned above can be broadly applicable, occupation-specific or company-specific. General skills like communication skills, mathematical facility, how to dress, etc., are mostly acquired through formal schooling. Occupation-specific skills such as how to prepare an accounting worksheet or to prepare wills are also be acquired in the same way, although on-the-job training may provide some of this knowledge. These skills have value outside specific companies and can be recouped by the worker whenever he works. Companies are understandably wary of investing funds in training whose benefits could disappear with the resignation of an employee and are willing to finance broadly applicable programs. Firm-specific skills include knowing where the tools are kept, "learning the ropes" and knowing whom to see for specific problems, or knowing the peculiar quirks of branch managers so as to get the best efforts from all of them. These skills range from simple to very complicated and from low to very-high incremental values as in the knowledge of managing people. Since, these capabilities have little direct value

outside, a company is more willing to finance their acquisition.

A review of the type of skills and how they may be acquired help as to understand how they may be financed (by the worker or company), how they may be acquired during the lifetime of the worker, and perhaps more important, how workers with seemingly identical educational and career backgrounds can differ substantially in earning capacity. Together with "tastes" and individual differences in consumption benefits derived from activities and occupations, these factors help explain why persons with identical backgrounds and strengths may be performing different tasks. Aside from these, life-cycle phases of careers to be discussed later on may introduce other discrepancies. Conversely, all of these factors indicate how individuals with different backgrounds may occupy identical positions.

The foregoing discussion highlights the breadth of the conceptual model, capable of incorporating pecuniary and non-pecuniary, consumption and investment aspects of the household's schooling decision. In empirical work, however, some aspects which are difficult to observe and quantify such as tastes and consumption benefits have been dropped without drastic harm to the models ability to explain important phenomena (e.g. Hansen, 1963, and Mincer, 1962). The same practice is followed here partly for the same reasons and also because the pecuniary and investment aspects already explain a major portion of what observers notice. We therefore, rewrite equation one as

(1') $$V_t = W_t$$

W_t = incremental income due to schooling and training investments.

Income increments are influenced by the amount of training and schooling acquired by the individual

(2) $W_t = f(S, OTJ, TP)$

S = number of years of schooling

OTJ = amount of out-of-job training

TP = accumulated length of training programs joined by the worker.

The household or individual maximizes his lifetime satisfaction by choosing the level of investment at which the capitalized value of excess of his income over his training costs is maximized

(3) Maximize

$$\sum_{t=1} \frac{[C^t + W^t]}{(1+r)^t} - \sum_{t=1} \frac{E^t}{(1+r)^t} = U$$

where:

E_t = expenditures on training, including the opportunity cost of being in school or training programs

r = the discount rate that the individual uses to translate future to present values

L = individual's expected lifetime.

Here the individual's decision is characterized as being a one-time decision where the surveys at the start of his career[18] what his earning power would be in each occupation given his natural talent, his family background, and other factors. Given a similar set of factors, the resources available to him for further training is also indicated. An individual's ability to finance himself is shown in some respects by the discount (interest) rate that applies to him. Richer individuals face lower effective interest rates indicating the relative ease for them in procuring the resources for training. Poor households face higher rates and are less able to send children to school. Thus, given the benefits would be the individual's ability to function in our society. The ability to read, write and do simple arithmetic, for example, are of direct use to the individual. There are, of course, income increments (Yt) for a worker who possesses elementary education skills. The expenditures for the household consists of direct cash outlays like tuition, books, stipend, etc. and opportunity costs of foregoing income that could have been earned by the child.

In some sense, the household makes this decisions every

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[18] This may happen at grade one or later but the dilemma is rendered most by the following discussion.

year, but may be visualized as deciding explicitly at critical points like after graduation from grade and high school. The essence of the decision remains the same although the decision after high school includes the choice of profession which may incorporate the choice over the opportunities and costs of education, the household will choose the training that maximizes the individual's capitalized lifetime satisfaction. Everything else the same, poorer individual's tend to stop at lower levels of schooling and training due to higher rates of effective interest.

Another way of visualizing the procedure to think of individual as deciding at each juncture if the net value of proceeding the next grade or year is worth the sacrifice. That is, he decides to continue for another year if

$$(4) \qquad \sum_{t=q}^{G} \frac{(C^t + W^t)}{(1+r)^t} - \sum_{t=1}^{G} \frac{E^t}{(1+r)^t} > 0$$

where:

q = previous grade or year

G = succeeding grade or year

For example, the household may make the decision when the child is around 7 years old,[19] whether to send him to grade school. This process is repeated at each juncture. It is usual to think of schooling as having distinct subdivisions, elementary, secon-

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[19] Legally, they don't have a choice in the Philippines. Elementary education is mandatory.

dary and college. The choice of occupation usually also determines the length of additional schooling (e.g. deciding whether to go to medical or law school).

Another way of characterizing the process is to think of the household as estimating a rate of return from each activity and comparing that to a required rate of return. If the computed rate of return is greater than or equal to the required rate, then the educational or training investment is undertaken. The implicit rate of return (r^*) is that interest rate which equates the value of benefits and costs that is,

$$\text{(5a)} \quad r^*: \quad \sum_{t=g}^{G} \frac{C^t + W^t}{(1 + r)^t} - \sum_{t=g}^{G} \frac{E^t}{(1 + r)^t} = 0$$

r^* = computed rate of return (which equates the benefits and costs).

Empirically, it has been found that the rate of return diminishes as the relevant grade increases, that is, r^* for grade school is higher than r^* for high school or college. Another way to describe this phenomenon is to say that r^* diminishes with the amount of education and training invested on an individual. This is perhaps to be expected. During the lower years, the opportunity cost of a worker with a small stock of human capital is less. Besides as more and more human capital is invested in an individual additional increments in income may be harder to come by. Finally, a situation where higher years of schooling have

higher rates of return cannot persist indefinitely. If that were so, it would be best for all individuals to continue on to higher years. But when the happens, the supply of lower-schooled workers will become scarce while higher-schooled workers would be a surplus. When that happens, wages of lower-school workers will increase; those of higher schooled workers will decline. This will, in turn, bring out a decrease in rate of return to higher years of schooling and an increase to that of lower years.

Analytically the household's decision process is done in three steps. First, it computes the implied rate of return (r') at each juncture. The resulting household demand curve for investment in schooling (training) is downward sloping for the reasons mentioned above. Aside from the interest rate, each household's investment demand is affected other factors like innate ability of the child (A), the household's social network, etc., which influence the child's ability to profit from schooling. By raising the child's income increments these factors affect the family's expectations of the return from schooling. Equation (6a) expresses and figure (1) illustrates this downward-sloping demand for investment.

(6a) $d(I) = f(r^*; A, N, \ldots)$

where:

d(I) - demand for schooling

A - child's innate ability

N - household's social network

Ability, social network and other factors influence on investment demand is shown by shifting the whole demand curve. Thus brighter children represented by the curve d(r*3) will be expected to make better use of schooling and will invest more than a slower child (represented by d(r*1)). A more powerful social network will operate similarly.

The supply curve of investible funds, on the other hand, slopes upward. That is, as the amount of investment in training increases the required rate of return (r') increases. The supply curve is also a function of household characteristics such as its wealth

(6b) $S(I) = f(r, Y, \ldots)$

where:

S(I) - the amount of investment funds available

Y - the household's wealth

This is necessary because increasing funds for training increasingly takes funds from other investment activities and from the household's consumption itself. Thus, the opportunity cost rises as the amount of investment increases, that is, the required rate of return (r') increases as the investment volume rises. This is shown in figure 2. Wealth's influence on the amount of investible funds is shown by shifts in the supply curve for funds. Thus, a wealthy household, with easy access to investible funds because of the presence of collateral or from internal savings, will be able to obtain more funds at lower rates as shown by the s(r4) curve in figure 5. A poorer household has a higher supply curve,

s(r1), indicating harder time obtaining funds. The wealthier household will, therefore, invest more, I(4), on their child than a poorer household, I(1).

Finally, the household invests up to the point where the computed r* just equals the required r'. In equilibrium, the household chooses that rate of return which equates its demand for investment in schooling and the amount that it is willing to spend on it.

(6c) $S(I) = d(I)$.

This is shown in as the rate determined by the intersection of the investment demand and the supply of investible funds curves in figure 3.

Factors Affecting Investment Demand and Supply of Funds

Household and individual characteristics affect the decision to invest in schooling (and training). For example, schooling is combined with other factors as it is applied in productive activity. The incremental effect of schooling is, therefore, affected by the quality of these other factors. One factor frequently mentioned is the child's innate ability. Schooling combined with higher innate abilities result in larger increments in productivity, leading to higher wage increments due to schooling[20]. Larger wage increments, upon examination of equations (4)

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[20]The "screening hypothesis" attributes the whole increment in productivity to differences in innate ability. Schooling merely provides a filter that uncovers the ability differentials and leads to better worker assignment. See, for example, Spence (1972), Arrow (1973), and Stiglitz (1975).

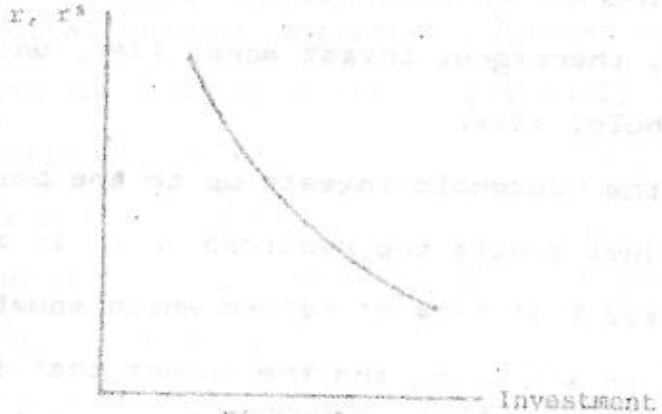

Figure 1

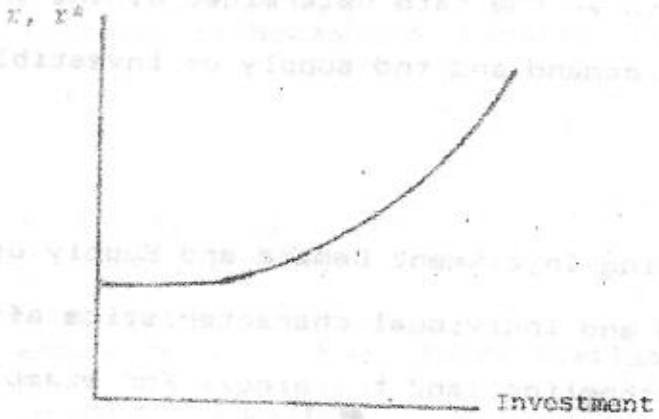

Figure 2

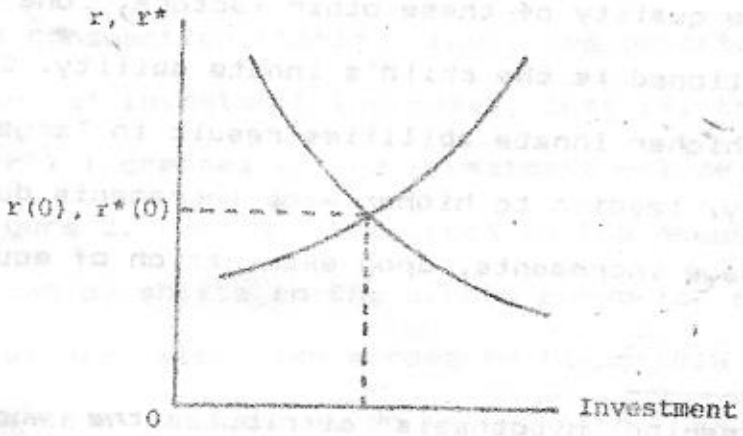

Figure 3

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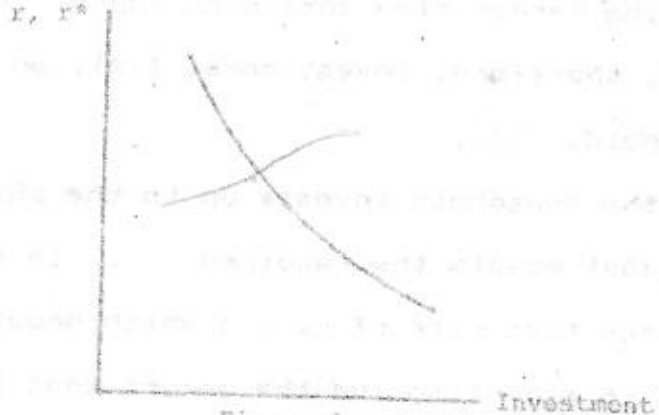

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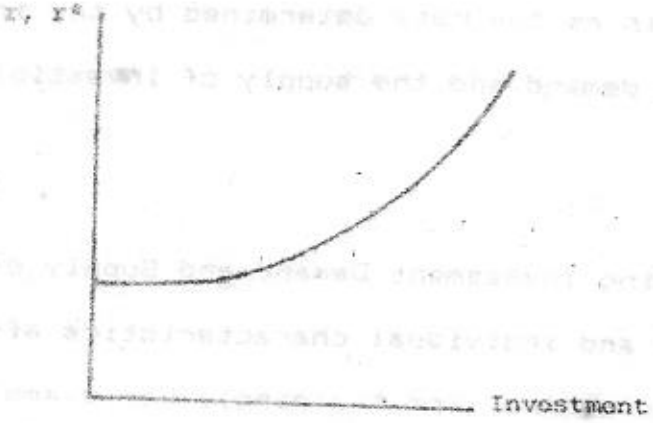

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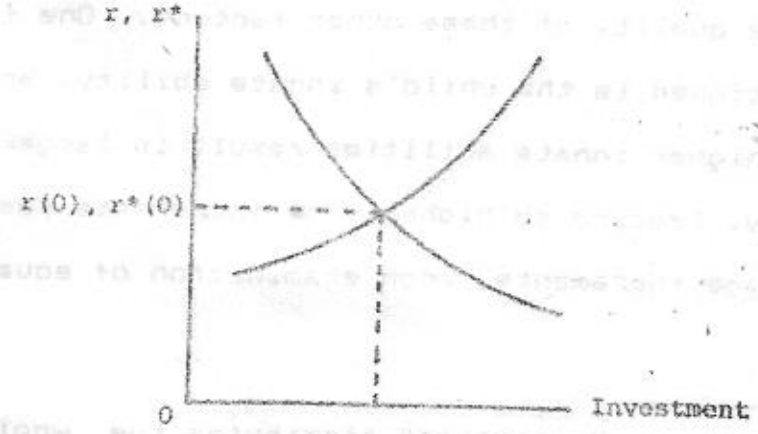

Figure 3

and (5a), are indicated by upward shifts in the whole investment demand curve as shown in figure 4. Thus, individuals with higher innate abilities tend to target higher levels of schooling. Other factors such as differences in the wage environments in different places have the same effect.

Factors affecting the supply of investible funds influence the investment in schooling and training similarly. Differences in household wealth is illustrative. Richer households find it easier to raise funds for schooling whether it decides to raise the funds internally from its resources or by borrowing. Access to the financial market afforded by the presence of more reliable collateral decreases the effective interest rate to the household. In our analysis, this is illustrated by a shift of the supply curve of investible funds to the right. This shifts the point of intersection to the right, signifying an increase in human capital investment by the household. Figure 5 shows this effect. Thus, richer individuals tend to obtain higher levels of formal schooling even if equipped with average innate ability. Other factors may be analyzed in the same manner, as appropriate movements in the demand and supply for schooling and training investment.

IV. THE PHILIPPINE LABOR MARKET

Jobs for tertiary (and other) graduates are generated by the labor market which is in turn largely influenced by the industrial structure. In the Philippines, the industrial structure has

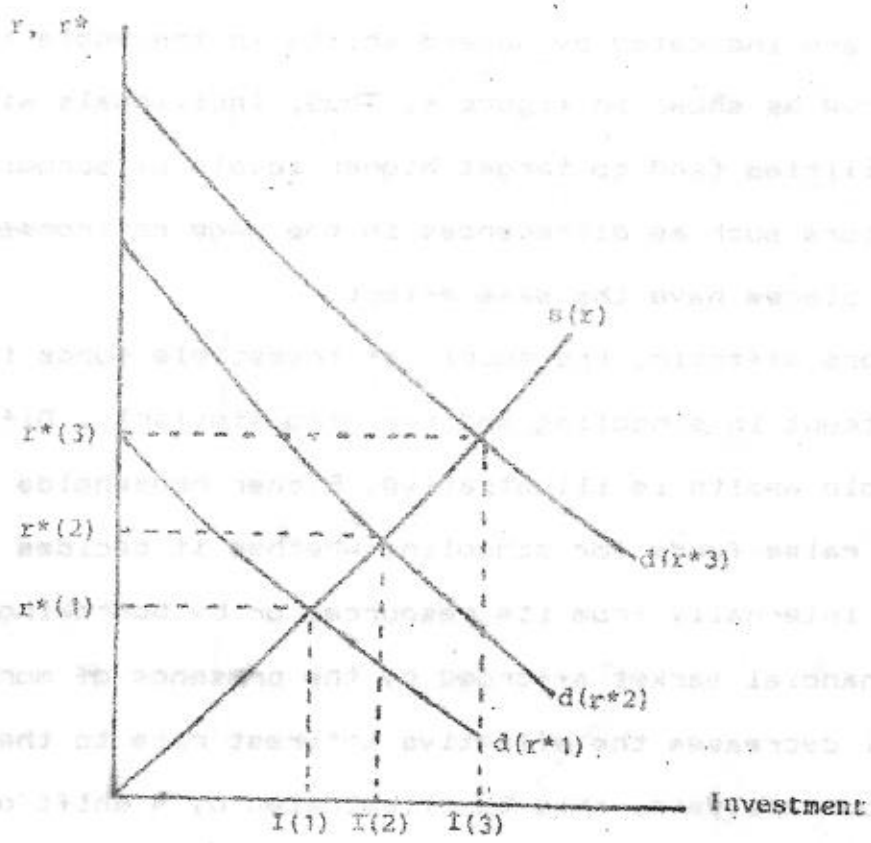

Figure 4

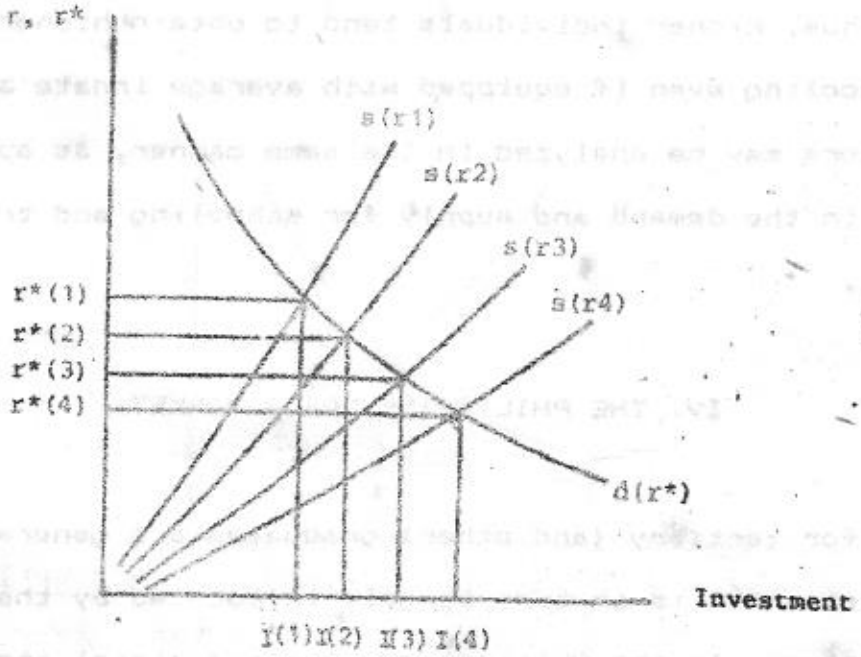

Figure 5

been described as dualistic (Paderanga, 1968) and badly distorted (ILO, 1974: 16; Bautista, Power and Associates, 1979: 9 - 11). There is a formal sector made mostly of import-substituting industries heavily protected from both domestic and foreign competition and an informal sector composed mostly by the agricultural and export industries. The latter is made up mostly of firms which have survived the heavy penalties imposed by the protective structure and operate in an environment where costs are pared down to the minimum and where there is little room for excess returns to the various factors. For example, the sector on the average is unable to pay much more than subsistence in a labor maker with a large pool of unemployed. The formal sector on the other hand, enjoys excess returns due to the heavy protection it enjoys. Factors of production in this sector, including labor, share in the abnormal returns allowed by the protective system. As a consequence, the average worker in the formal sector receives a premium over that received by an employee in the informal sector.

(7) $W_f > W_i$.

where

W_f - wage in the formal sector

W_i - wage in the informal sector

A worker in the formal sector, therefore, earns more than an identical employee in the informal sector. Since this difference will persist over the economic lifetimes of the workers, the cumulative difference can be large and workers are willing to invest substantial amounts on themselves if this can increase

their chances of becoming part of the formal sector. Ordinarily, this wage differential would induce two changes. First, sectors where wages are relatively low would enjoy competitive advantages and would grow faster than the rest of the economy. Second, the wage differential would induce more workers to shift to the protected sector, leading to a decrease in their wages. However, government policies, at the expense of the low-wage industries, prevent the deterioration of the protected sector's position by protecting them from competition. As a result, the growth differential does not turn in favor of the unprotected sector. At the same time labor unions and government labor laws which are enforceable in the protected sector, ensure that workers in the sector are able to partake of the abnormal returns and prevent the erosion of their wage premium. One way this wage premium is preserved is through the highly capital intensive processes in the sector induced by policies which also limit the number of workers employed.

The continuing wage differential has an effect on the human capital investment decision of households. It creates a wedge between the wages in the informal and the protected sectors which persist. The lifetime incomes between the two sectors, therefore, also differ assuming full employment in both sectors.

$$U_f = \sum_{t=1}^{L} \frac{(C^t + W_f^t)}{(1+r)^t} - \sum_{t=1}^{L} \frac{(E_f^t)}{(1+r)^t} \qquad (8)$$

$$U_i = \sum_{t=1}^{L} \frac{(C^t + W_i^t)}{(1+r)^t} - \sum_{t=1}^{L} \frac{(E_i^t)}{(1+r)^t}$$

and

$$U_f \geq U_i$$
$$E_f > E_i$$

Because of the income differential, households aspire to have their children work in the protected sector. They are willing to invest more on their children as long as this increases the chances of being employed in that sector. One way of increasing the probability is by increasing the number of credentials for getting into the formal sector. That includes acquiring more and more years of formal schooling and other training. This is especially true in the case of government jobs where the procedures are more formalistic. However, there are two realities that the household must contend with. First, there is a cost to increasing the probability of joining the formal sector. Second, because there are many more applicants than formal sector jobs there is a very high probability that a job-seeker will experience an initial period of unemployment. In some cases, this period may be substantial.

The segmented labor market merges the occupational and industrial choice of workers. By the choice of occupations (white-collar against blue-collar) and years of schooling the probability of admission into formal sector industries is also increased. Thus, households still think the choice between occupations (and, therefore, industries) and among number of years of schooling as an investment decision. But now households incorporate the expected period of initial unemployment in their calculations. The household decision is now based on a modified

decision process where the expected formal wage incorporating the expected period of unemployment is used. During this time, the worker may be earning low wages in odd jobs in the informal sector.

$$(9) \qquad \bar{W}_f = a*W_f^u + b*W_f^e$$

where

$\bar{W}_f$ - weighted average of formal sector wage

W_f^u - wage while unemployed in formal sector

a - proportion of time unemployed in formal sector

W_f^e - wage in formal sector

b - proportion of time employed in formal sector

With this modification, the household investment decision in equation (8) is modified by introducing the weighted formal sector wage. The household now invests in formal schooling until the rate of return is equal to the household's interest rate.

Look for r*:

$$(10) \qquad U_f = \sum_{t=1}^{L} \frac{(\bar{W}_f^t + W_i^t)}{(1+r)^t} - \sum_{t=1}^{L} \frac{(E_f^t - E_i^t)}{(1+r)^t}$$

such that

$$r^* = r$$

This feature is graphically illustrated in figure 6 where the demand for investment in formal schooling, d(r), is a weighted average of two investment demand curves, $d(r_u)$ when the individual is unemployed and $d(r_w)$ if the individual is employed in the formal sector. Thus, while those who are currently unemployed will exhibit an apparent rate of return of r', having invested

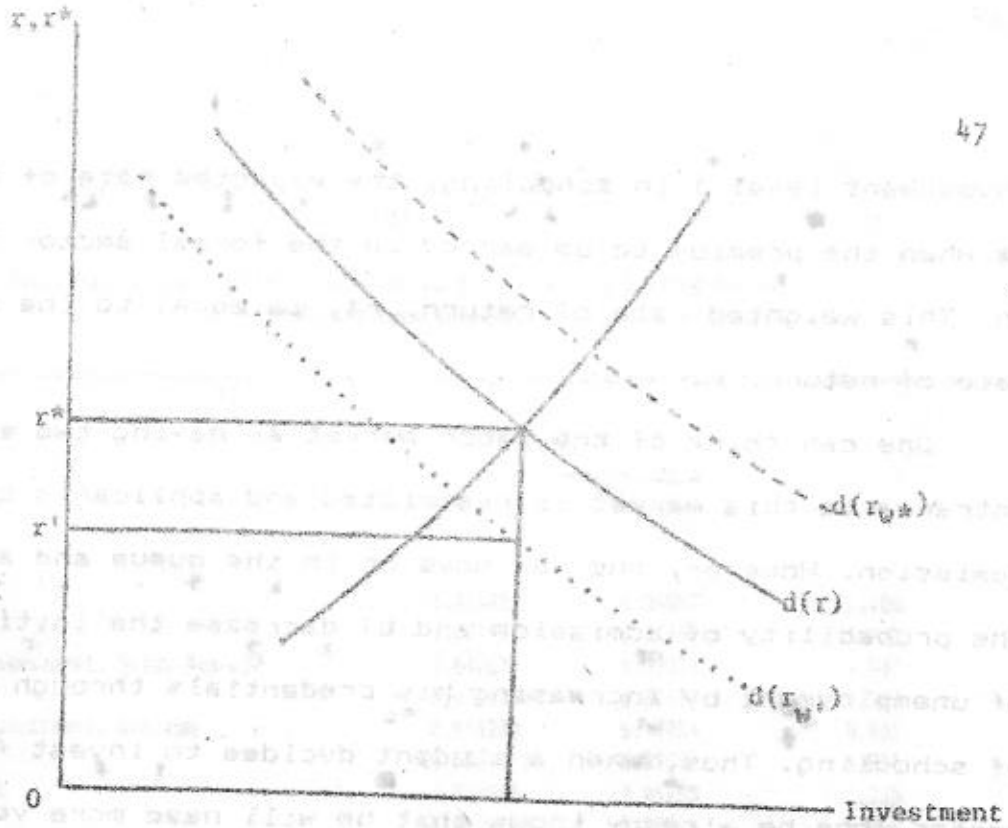

Figure 6

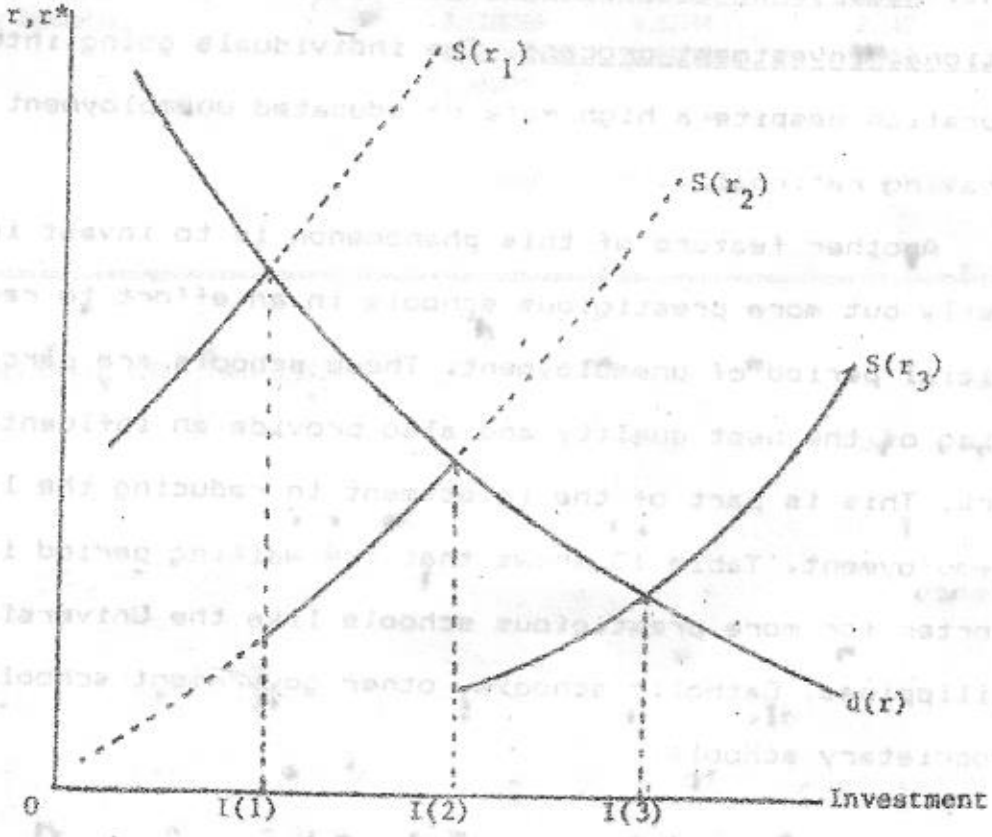

Figure 7

investment level I in schooling, the expected rate of return is r* when the premium to be earned in the formal sector is factored in. This weighted rate of return, r*, is equal to the required rate of return, r.

One can think of the labor market as having two segments. Entrance to this market is restricted and applicants queue for admission. However, one can move up in the queue and a) increase the probability of admission and b) decrease the initial period of unemployment by increasing his credentials through more years of schooling. Thus, when a student decides to invest for formal sector jobs he already knows that he will need more years of schooling and that there will be an initial period of unemployment. Acceptance of a period of unemployment is part of a rational investment process. The individuals going into tertiary education despite a high rate of educated unemployment are behaving rationally.

Another feature of this phenomenon is to invest in more costly but more prestigious schools in an effort to reduce the initial period of unemployment. These schools are perceived as being of the best quality and also provide an influential network. This is part of the investment in reducing the length of unemployment. Table 13 shows that the waiting period is, in fact, shorter for more prestigious schools like the University of the Philippines, Catholic schools, other government schools and proprietary schools.

Mismatch

Table 13

Variables In The Regression Model On Factors Affecting Waiting Period
(All Employed Graduates)

Variables	B	BETA	F
G.P.	-1.465431	-0.24897	7.488
Protestant	1.58199	0.11949	4.762
Academic Self-Assessment: Below Average	3.847076	0.17371	1.882
Sex: Female	0.4381289	0.07479	3.128
Academic Self-Assessment: Average	2.348234	0.44854	0.881
Catholic	-0.8839672	-0.09992	1.874
Other Government	-0.838815	-0.09233	1.858
Proprietary	-0.5428188	-0.09815	0.966
NCEE Score	-0.8191727E-02	-0.03793	0.648
One Year After Graduation	0.8321575	0.05386	0.748
Academic Self-Assessment: Above Average	2.28651	0.39522	0.786
Academic Self-Assessment: Excellent	1.948446	0.09667	0.478
Two Years After Graduation	0.1328286	0.02344	0.142
PARING	-0.2481713E05	-0.08918	0.018
(Constant)	1.986492		
	F = 3.65388	DF = 14 544	R^2 = 0.08599

Source: Arcelo and Sanyal, (1987) Table 3.24.

Table 14

Mean Income of Employed Graduates by Occupational Classification And Type Of College

	U.P.	Other Gov't Colleges	Catholic	Protestant	Proprietary	Foundation	Total
1. Professional, Technical and Related Workers	1587.08	696.99	1032.35	937.07	935.85	1142.33	1098.41
2. Administrative, Exec. & Managerial Workers	2302.68	-	984.72	-	1353.33	-	1941.15
3. Clerical Workers	1152.62	940.00	1009.43	686.53	852.69	-	982.95
4. Sales Workers	1802.00	208.00	1125.00	900.00	1033.86	60.00	1179.31
5. Service Workers	-	-	-	-	751.67	-	901.00
6. Agricultural Workers	995.00	504.40	-	-	494.00	649.53	696.87
7. Prod'n. Transportation & Related Workers	3287.25	580.00	893.67	364.00	1017.38	-	1145.56
8. Unclassified	1787.00	775.00	-	-	408.50	-	969.00
Total	4562.20	687.43	1020.50	892.19	928.83	987.56	1096.67

Source: Arcelo and Sanyal (1987), Table 4.6.

Table 15

Variables In The Regression Model: All Graduates

VARIABLES		B	BETA	F
V1301	U.P. System	0.8181784	0.31478	56.076
V127	Father's Gross Monthly Income	0.1081616	0.16393	14.736
V0082	Female	-0.2999198	-0.12668	8.751
V1325	Law & Foreign Service	1.067597	0.16859	20.462
V2068	Financing & Business Services	0.3581795	0.11678	9.859
V1323	Engineering & Technology	0.4938513	0.15931	14.0
V2052	Admin., Exec., Managerial Workers	0.7284384	0.13082	11.853
V1341	Two Years After Graduation	0.2088671	0.12491	11.471
V263	Waiting Period	-0.8446348E-01	-0.09089	5.881
V22041	Type-Firm = National Government	-0.3461677	-0.09077	4.699
V1236	Agricultural & Related Workers (Father's)	-0.2217646	-0.06366	2.414
V1002	Married	0.2935156	0.08979	5.431
V00313	Region XIII	-0.1654447	-0.03283	0.595
V270	Factor Job-Gov't Placement Office	-0.7532687E-01	-0.06960	3.172
V2034	Sales Workers	-0.2800133	-0.044836	1.027
V1232	Admin., Exec. & Managerial Workers (Father's)	0.193181	0.05832	2.387
V2057	Prod., Trans. Operators & Labourers	-0.3400036	-0.0462	1.451
V0031	Region I	0.3566597	0.05056	1.703
V0034	Region IV	0.1144214	0.04402	0.957
V0039	Region IX	-0.6294529	-0.03687	0.969
V1324	Food Nutrition and Dietetics	-0.2534737	-0.03291	0.761
V2047	Type-Firm = Single Proprietorship	-0.1122481	-0.02866	0.575
V2065	Construction	-0.8442372E-01	0.0283	0.349
V1321	Agricultural	-0.5027343E-01	0.01878	0.178
V101	Age (As of last birthday)	-0.9604144E-01	0.02868	0.517
V123	Prod., Trans. Operators & Labourers (Father's)	-0.9606702E-01	0.02714	0.481
V2061	Agriculture, Fishery & Forestry	2.415822	-0.0186	0.169
	(Constant)	2.415822		
		F = 15.29498	DF = 27,394	R^2 = 0.51175

Source: Arcelo and Sanyal (1983), Table 4.14.

Occupation Of The Spouse Of The Unemployed

	Total		Male		Female	
	#	%	#	%	#	%
1. Professional, Technical & Related Workers	13	27.7	2	40.0	11	26.2
2. Administrative, Exec., & Managerial Workers	2	4.3	-	-	2	4.8
3. Clerical Workers	10	21.3	-	-	10	23.8
4. Sales Workers	4	8.5	1	20.0	3	7.1
5. Service Workers	2	4.3	1	20.0	1	2.4
6. Agriculture	2	4.3	-	-	2	4.8
7. Prod'n., Transportation & Related Workers	8	17.3	-	-	8	19.0
8. Unclassified	1	2.1	-	-	1	2.4
9. Armed Forces	3	6.4	-	-	3	7.1
10. Housewife or Non-Working Husband	2	4.3	1	20.0	1	2.4
Total	47	100.0	5	100.0	42	100.0

Source: Arcelo and Sanyal (1987), Table 5.4.

The foregoing discussion serves as a background for analyzing the phenomenon of mismatch between the training of graduates and their current jobs. The analyses explains why students may "load up" on credentials in order to reduce their time in the queue for formal sector jobs. This leads to "genuine" cases of mismatch as what counts may not be the exact training but the number of credentials. However, in our analysis this behavior is completely rational on the part of the students. Three explanations for apparent inconsistencies between workers' training and their present occupation are given. These are meant only to qualify rather than eliminate the possibility of occupational mismatch.

The first qualification comes from the interrelationship among company-specific skills, on-the-job training, and broader skills which accrue to schooling and other training of more general application. A particular job requirements bits and pieces of company-specific, profession or occupation-specific, and broader skills. Among those belonging to the latter include skills in smooth interpersonal relationships (SIR), minimum knowledge of dress and conduct, and rudimentary skills required for participating in an industrial society such as arithmetic and typing skills. Profession or occupation-specific skills include the ability, say, of an accountant to complete the bookkeeping cycle and prepare financial statements or the ability to draw detailed road building plans for civil engineers. In some cases, rudimentary skills in a profession may be necessary and easy to acquire for a broadly trained person. This may be the case of

rudimentary bookkeeping for all managers. One example of company-specific skills is that given earlier in this paper.

A worker's career in a company and in general goes through several stages. As he goes up the hierarchy, jobs require a changing combination of skills. Thus, a position high up in the hierarchy of an agricultural machinery firm would be that of the manager or vice-president for marketing. While technically a sales position, this job almost requires the holder to be a mechanical engineer in order to discuss technical machinery details with clients. Besides, the normal process of promoting from the ranks of the sales force which would be made up of mechanical engineers or technicians dictates a high probability that this will happen.

As a worker goes up the hierarchy, his job requires more and more company-specific and broad skills compared to his entry job which may highly concentrated on his initial training. Since broad skills such as SIR and communication ability do not depend on professional training and company-specific knowledge may be acquired by anybody in the firm, it is highly probable that individuals move into positions not directly related to his original training. Situations like these which would be picked up as "mismatches" in job analyses may be quite numerous.

A second source of mismatch come from the breadth and ambiguity of occupational and job classifications. In some cases, the job itself may be amenable to training of various types. For example, the job classification "manager" may require completely different skills depending on the industry. Second, the rigidity

in changing job and function descriptions such as in the government may lead management to keep people in old plantilla positions even when new duties and functions have been assigned.

Finally, apparent mismatch may arise because the worker is engaged in "sequential human capital investment" rather than a one-shot lifetime decision. This arises because individuals (or their families) may not actually possess the resources for schooling investments at the start of tertiary schooling. With perfect capital markets, there would be no problem as the individual just borrows the required amount at the current interest rate. However, this transaction is bedeviled by asymmetric information. Since the lender does not possess all the information about the student (e.g. ability and study habits), his perceived risk is much higher than otherwise. As a result of the premium that would be imposed, student loans are not affordable. Thus, the supply curve of funds available to the individual is $S(r_1)$ in figure (7) which is based on his physical possessions and earning capacity with high school education. As a result, the optimal investment at that point is I(1) which may represent lower-quality schooling or low-cost degrees.

Upon completion of a cheap, low-cost degree, however, the individual's future income stream is raised, increasing his borrowing capacity represented by $S(r_2)$. At this stage, the individual's optimal investment level has risen to I(2) and he acts accordingly by taking a second degree. Perhaps, a more higher-level and more expensive bachelor's degree (a change of degree or school). After completing this level, his supply curve

of funds may shift further to $S(r_3)$ and he may increase his schooling investment even further to I(3). Thus, over his career an individual may shift "occupations" a few times. He may even be willing to take opportunistic jobs just to implement this sequential human capital investment. At those times when the worker is at a transition stage, or at an intentional though temporary mismatch, he may be counted as a lifetime mismatch by cross-section job analyses.

The individual may also lack information about his own abilities at the start. For example, a worker from a disadvantaged schooling background may only gradually discover his true abilities as he achieves higher levels. He may sequentially move his demand curve from $d(r^*_1)$ to $d(r^*_3)$ in figure (8). Using the same reasoning as above, his optimal levels of schooling may move from I(1) to I(3).

V. Interpretation and Recommendation

The most salient characteristics of the labor market in the Philippines are the high rates of open unemployment and underemployment of educated labor (Table 2), the high percentage of "under-utilized" skilled labor (Table 11), and the continuing increases of college enrolment in the face of the first two facts. This features are not new and have disturbed observers and policy makers alike for many years.

Various solutions have been proposed. Two stand out. Belonging to the first type are proposals that call for national

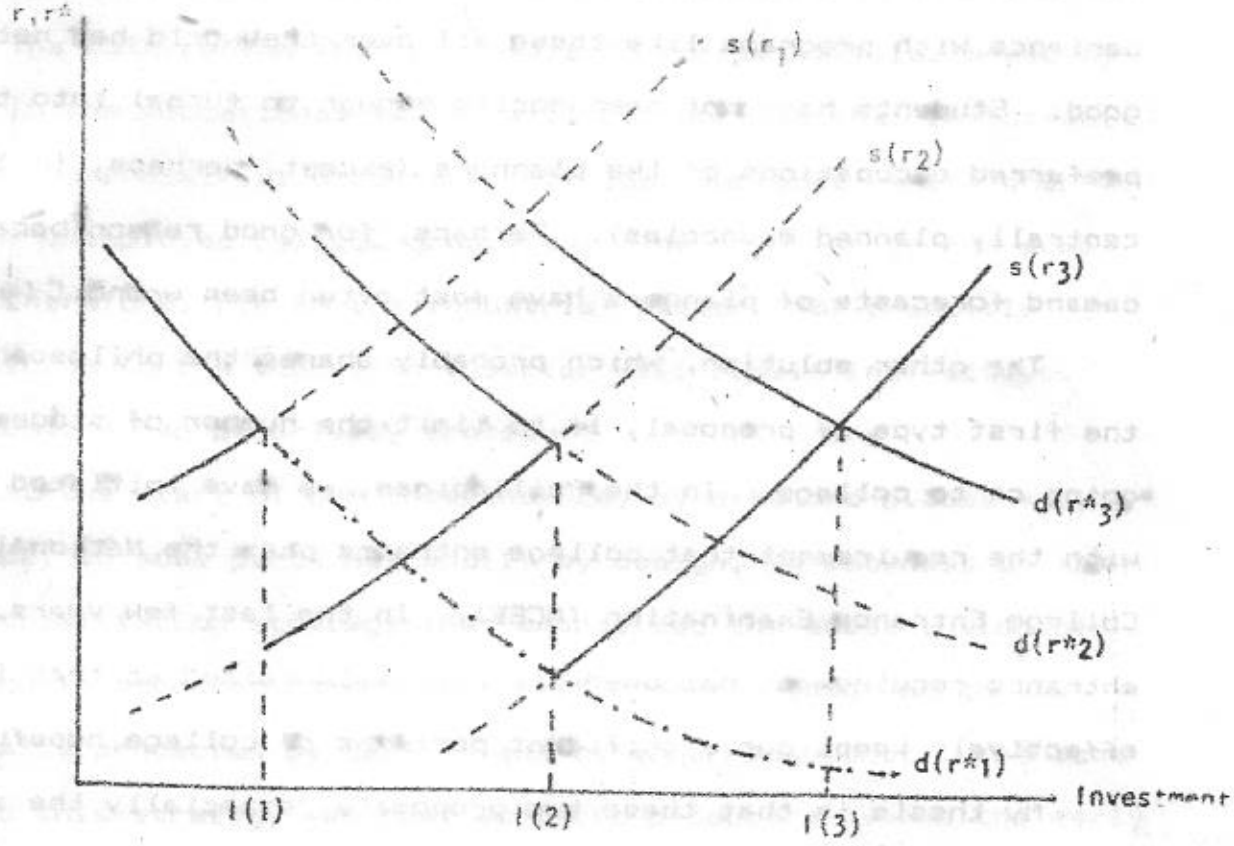

Figure 8

or sectoral manpower planning. Typically, these suggest that the economy's future needs for all types of workers be forecast and the schools allocate the number of graduation slots to fill the predicted demand. This rendition is probably an oversimplification but it captures the thrust of these proposals. Experience with programs like these all over the world has not been good. Students have not been docile enough to funnel into the preferred occupations of the planners (except, perhaps, in the centrally planned economies). Perhaps, for good reason because demand forecasts of planners have most often been wrong.

The other solution, which probably shares the philosophy of the first type of proposal, is to limit the number of students going on to college. In the Philippines, we have initiated this with the requirement that college entrants pass the National College Entrance Examination (NCEE). In the last few years, the entrance requirement has been progressively raised so that it now effectively keeps out significant portions of college hopefuls.

My thesis is that these two proposals, especially the second which is being practiced now, do not address the basic problem and will not solve it. For all its usefulness in transmitting to hopefuls their probable fate in college, the NCEE will not solve the problem of skilled unemployment and is practically useless in that sense. Instead of saving on resources as claimed, NCEE wastes resources by preventing substandard high school graduates from benefitting from extra years of incremental skills in college (no matter how substandard that college may be). As a result, unqualified workers are let loose in the labor market

even before they are ready. A few more years in college could have made them better prepared for economic participation. The resulting restriction on choices and its implication on our freedom is too high a price to pay for results that are vaguely beneficial at best and may even be harmful.

The main reason that proposals to correct skilled unemployment in the educational sector will not work is that the defect is in the industrial structure. It just surfaces in the phenomenon of unemployed college graduates. The solution to the problem, therefore, lie in the industrial sector. All proposals pertaining to the educational sector will remain ineffective. The reasons can be briefly traced.

At the start of our independence, by bits and places and, perhaps, in some parts not wholly by design, we embarked on an industrialization strategy that emphasized the substitution of previously imported commodities with domestic goods which are initially protected by tariffs and other arrangements. The idea behind this strategy was that domestic producers needed the early impulse in order to acquire some familiarity in the production of those goods. After the familiarization period, our producers would be able to compete on an even basis with foreigners. At that time, we would benefit because we would not need to export other goods in order to buy those products from abroad.

The policies have created a dual structure with a pampered, inefficient manufacturing sector with very high abnormal returns unable to create the employment needed by an increasing labor force (Paderanga, 1989). In the labor market, this dualism is

reflected in higher than normal salaries on the protected manufacturing sector and low, sometimes subsistence, wages in the penalized sectors. This wage differential could not disappear because government policies artificially preserved it.

The rational student is confronted with two choices. He could remain in the large, unprotected sectors and earn low wages. Or he could try to enter the working force of the protected industries with their high salaries. However, employment slots in these industries are few and he may be unemployed for substantial periods.

A substantial number choose the second option and endure the initial unemployment period. They expect to rewarded when they finally get into the protected sector. This is the "queuing" phenomenon. In the meantime, a student can increase his chances of employment by increasing his credentials. One way is by amassing higher and higher degrees. Thus, a student just goes on to higher and higher years of schooling. It accomplishes two things: it keeps him occupied; and it decreases the period of unemployment. However, the unemployment period does not disappear. In fact, it is a stable feature of the labor market.

It is apparent that skilled unemployment is just a manifestation of the response of rational students to the signals sent by a dualistic industrial sector. Any policy that leaves this basic structural arrangement intact will not make a dent on the unemployment and "mismatch" phenomenon. That is why the NCEE cannot be expected to solve the unemployment problem. Given that the NCEE does not save resources but, rather, decreases the

chances of low-income students improving their lot, it loses its appeal as a screening device.

Recently, the government initiated a college tuition subsidy program under which students enrolled in schools with tuition below stipulated levels would receive some subsidy. Such a policy can be analyzed using the conceptual framework of this paper. The subsidy tends to decrease the cost of going to college, increasing college enrolment. However, the policy itself will not affect the demand for educated manpower. Thus, its net effect will be to increase the number of applicants in the queue for protected sector employment. It will just increase the number of educated unemployed. That is, it will be ineffective, further increasing the danger of discontent by those not fully employed.

The main recommendation of this paper is to refrain from solving the skilled unemployment problem in the educational sector. It just raises false hopes, has bad side-effects, and will not work. The solution is in the restructuring of our industrial structure. That is where the work should begin.

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Appendix Table 1

Unemployment, Underemployment And Education

Education	% unemployment	% of unemployed with no experience	% experienced unemployment /a	% underemployment	% unemployment + % underemployment	% experienced unemployment + underemployment
o grade	2	18	2	20	22	22
lementary 1-5 years	2	32	2	28	30	30
lementary graduate	4			28	32	30
econdary 1-3 years	8	46	5	26	34	31
econdary graduate	9			23	32	28
ollege 1-3 years	14	62	5	19	33	24
ollege graduate	12			14	26	19
Total	6	49	3	24	30	27

a/ Unemployed people with experience divided by labor force.

ource: World Bank (December 1988), Annex Table A4.4.

Appendix Table 2

Enrolment In Government and Private Schools By Level Of Education: SY 1954-55 to SY 1986-87

School Year	Grand Total	Elementary			Secondary			Tertiary		
		Total	Gov't	Priv	Total	Gov't	Priv	Total	Gov't	Priv
1954-55	4,884,285	3,444,417	3,305,103	139,314	599,868	197,373	372,495	154,233	...	154,233
1959-60	4,762,287	4,130,763	3,970,790	179,993	611,564	200,164	411,388	239,325	...	239,323
1964-65	6,339,468	5,577,901	5,330,334	247,567	961,959	318,498	643,861	381,439	...	381,439
1969-70	8,446,857	6,835,581	6,521,143	334,358	1,391,356	679,840	915,516	638,000	65,000	573,000
1970-71	8,688,364	6,968,978	6,627,734	341,244	1,719,386	762,904	956,482	651,000	67,000	584,000
1971-72	8,882,654	7,081,978	6,659,544	342,426	1,800,684	812,260	988,424	686,000	72,000	614,000
1972-73	8,897,721	7,022,789	6,667,644	355,865	1,875,812	863,326	1,011,686	743,000	76,000	667,000
1973-74	9,167,887	7,209,839	6,845,138	363,981	1,958,848	913,342	1,044,786	791,000	89,000	702,000
1974-75	9,541,425	7,429,249	7,043,522	385,727	2,112,176	975,356	1,136,820	712,000	98,000	614,000
1975-76	9,888,986	7,397,279	7,197,878	399,401	2,291,707	1,061,731	1,229,976	772,000	106,000	666,000
1976-77	11,294,877	7,900,158	7,387,178	428,980	2,568,519	1,285,434	1,383,085	799,000	114,000	685,000
1977-78	11,538,471	7,861,641	7,424,254	437,387	2,696,468	1,319,898	1,376,562	833,000	123,000	710,000
1978-79	12,885,338	8,836,813	7,681,115	454,898	2,820,469	1,378,127	1,439,342	1,129,000	152,000	977,000
1979-80	12,176,332	8,227,335	7,817,458	409,985	2,766,874	1,489,959	1,276,915	1,209,000	184,000	1,025,000
1980-81	12,585,832	8,298,448	7,931,168	359,280	3,818,368	1,614,554	1,484,814	1,254,000	185,000	1,069,000
1981-82	12,789,984	8,518,283	8,073,290	444,993	2,935,732	1,591,510	1,344,222	1,387,000	179,000	1,128,000
1982-83	13,077,881	8,591,267	8,164,861	427,286	3,074,219	1,721,159	1,353,868	1,349,000	194,000	1,155,000
1983-84	13,498,528	8,717,469	8,228,554	488,915	3,284,551	1,844,174	1,368,377	1,391,000	211,000	1,180,000
1984-85	13,244,884	8,793,773	8,269,825	523,948	3,323,863	1,957,444	1,385,619	1,384,000	238,000	1,274,000
1985-86	12,166,354	8,096,928	8,392,163	504,817	3,269,434	1,949,542	1,319,892	...	...	...
1986-87	15,672,336	9,229,395	8,639,399	590,196	5,326,989	1,969,893	3,357,814	1,115,032	...	...

Sources: NSO, Philippine Yearbook, 1987.
NEDA, Philippine Statistical Yearbook, 1974 and 1988.
DECS, Philippine Education Indicators, 1965-85.

Appendix Table 9

Enrollment Distribution By Field in Bachelor's Degree Programs
(Percentages)

	Social science & humanities	Math & natural science	Agriculture	Teacher training	Engineering	Business	a/ Other
Public							
Chartered	5	5	10	26	16	23	15
Nonchartered	3	-	24	32	6	12	24
Total Public	5	4	12	28	14	21	16
Private							
Catholic	4	3	-	12	17	41	23
Protestant	-	3	3	14	9	46	26
Secular nonprofit	-	3	5	14	16	34	28
Total Nonprofit	3	3	2	13	16	40	24
Stock	1	1	-	9	28	40	22
Proprietary	-	1	-	12	31	33	23
Total For-Profit	1	1	-	9	28	39	23
Total Private	2	2	1	11	23	39	23
GRAND TOTAL	2	2	3	13	21	36	22

a/ This includes professional fields such as Medical BS, Nursing, Law & Architecture.

Source: World Bank (December 1988), Annex Table A4.6.

Appendix Table 4

Budget of the Department of Education, Culture and Sports, Share of National Government & GNP: 1956-87

Year	National Budget	DECS		% of GNP
	Total	Amount	% of Budget	
1956	602,087,347	178,668,605	29.68	0.004248
1957	629,274,348	198,383,485	31.53	0.004279
1958	774,366,939	208,718,340	26.95	0.003615
1959	892,057,713	224,659,635	25.18	0.003334
1960	899,673,800	247,386,590	27.50	0.003351
1961	1,092,919,090	306,879,520	28.08	0.002950
1962	1,189,617,668	352,029,968	29.59	0.002859
1963	1,382,978,620	404,771,150	29.27	0.002630
1964	1,972,880,923	507,155,150	25.72	0.001907
1965	2,102,363,873	555,250,130	26.41	0.001879
1966	2,003,048,779	596,211,624	29.77	0.002058
1967	2,073,625,028	646,123,570	31.16	0.002084
1968	2,276,470,844	688,909,856	30.26	0.002083
1969	2,904,717,991	780,265,341	26.86	0.001651
1970	3,323,698,915	829,945,302	24.97	0.001500
				0.001428
1971	3,716,215,837	1,004,394,189	27.03	
1972	4,169,732,780	1,093,620,009	26.23	0.001341
1973	7,941,154,696	1,296,695,883	16.33	0.000769
1974	8,711,146,500	1,496,355,000	17.18	0.000740
1975	14,499,714,500	1,643,183,000	11.33	0.000470
1976	22,399,000,000	1,681,387,000	7.51	0.000327
1977	27,390,000,000	2,040,000,000	7.45	0.000284
1978	28,681,493,000	3,195,276,000	11.14	0.000287
1979	32,226,067,000	3,447,234,000	10.70	0.000273
1980	37,894,032,000	3,414,378,000	9.01	0.000244
1981	50,319,957,000	3,827,280,000	7.61	0.000190
1982	57,090,994,000	4,387,012,000	7.68	0.000170
1983	61,837,776,000	5,471,393,000	8.85	0.000159
1984	53,450,490,000	5,613,082,000	10.50	0.000171
1985	58,328,941,000	6,145,909,000	10.54	0.000150
1986	67,409,044,562	8,712,162,000	12.92	0.000132
1987	79,321,042,000	12,321,912,000	15.53	0.000119

Sources: NEDA, Philippine Statistical Yearbook, 1988.
NEDA, National Income Accounts, various issues.

Appendix Table 3

Private Costs Of Higher Education Per Student,
Per Semester, 1987

	Tuition & fees	Books & supplies	Transport & other	Total	Tuition as % of total
Public					
UP	1,077	429	823	2,329	46
Others	429	368	700	1,497	29
Private					
Catholic	2,039	526	809	3,374	60
Protestant	1,204	448	784	2,336	51
Secular nonprofit	899	379	526	1,804	50
For-profit	1,223	468	809	2,500	49
Average	1,227	457	775	2,459	50

Source: World Bank (December 1988), Annex Table A4.13.